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The Moldovan Medical Journal

The Publication of the Scientific Medical Association of Moldova

Issued once in two months

Vol. 61
RMI Congress Issue
May, 2018

The IVth Congress of Radiology and Medical Imaging of the Republic of Moldova with international participation

Chisinau, May 31 – June 2, 2018

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Welcome to the Moldovan Medical Journal!

The Moldovan Medical Journal is an international scientific double-blind peer reviewed periodical edition, 6 per year, of the Scientific Medical Association of the Republic of Moldova designed for specialists in the areas of medicine, dentistry, pharmacy, social medicine and public health. From its debut the journal has striven to support the interests of Moldovan medicine concerning the new concepts of its development.

The Editorial Board warmly welcomes both the readers of and the authors for the journal, all those who are enthusiastic in searching new and more effective ways of solving numerous medicine problems. We hope that those who want to make their contribution to the science of medicine will find our journal helpful and encouraging.

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Program of the IVth Congress of Radiology and Medical Imaging of the Republic of Moldova with international participation, Chisinau, May 31 – June 2, 2018

Programme du IVème Congrès de Radiologie et d'Imagerie Médicale de la République de Moldova avec participation internationale, Chisinau, 31 mai – 2 juin 2018

Congress venue
Nicolae Testemitsanu State University of Medicine and Pharmacy
165, Stefan cel Mare si Sfant Avenue, Chisinau, the Republic of Moldova

May 31, 2018

Senate Hall

10^{30}- 15^{30} – Registration

Radisson Blu Leogrand Hotel (77, Mitropolit Varlaam Street)

16^{00}- 17^{00} – Concert

17^{00}- 18^{30} – Opening ceremony

18^{30}- 20^{30} – Welcome cocktail

June 1, 2018

Senate Hall

08^{00}-08^{40} – European Society of Radiology (ESR) session
Moderators: Natalia Rotaru (Moldova), Maxim Crivceanschii (Moldova), Robert Gruenkranz (Austria)

- **Derchi Lorenzo.** *Presentation about ESR and ECR*. Genoa, Italy.
- **Derchi Lorenzo.** *Imaging the acute female pelvis*. Genoa, Italy.

08^{40}-09^{00} – Canon Medical Systems Europe session

- **Verlaan Roy**. *Ultra high Resolution Computed Tomography (CT)*. Zoetermeer, The Netherlands.

09^{05}- 10^{00} – Nuclear Medicine session
Moderators: Ion Codreanu (Moldova), Abass Alavi (USA), Viktoriia Kundina (Ukraine)

- **Alavi Abass**. *Unparalleled contributions of FDG-PET imaging to medicine over the past 4 decades*. Philadelphia, USA.
- **Alavi Abass**. *Evolving role of PET imaging in assessment of atherosclerosis*. Philadelphia, USA.
- **Alavi Abass**. *Evolving role of FDG-PET in detecting and characterizing infectious and inflammatory disorders*. Philadelphia, USA.
- **Alavi Abass**. *What can and what cannot be accomplished with PET, clarifying ongoing misconceptions*. Philadelphia, USA.
- **Stănişor Liviu**. *The role of nuclear medicine in modern clinical practice*. Neolife Iaşi, Romania.
- Babkina Tetyana, **Kundina Viktoriia**. *SPECT myocardial perfusion imaging for the assessment of the quantity of viable myocardium*. Kyiv, Ukraine.
- **Nersin Aslan**. *Molecular imaging with Ga68 in prostate cancer*. Neolife, Turkey.

10^{00}-10^{15} – Coffee break

10^{15}-12^{15} – Neuroimaging session
Moderators: Stanislav Groppa (Moldova), Cem Calli (Turkey), Olav Jansen (Germany)

- Chiosa Vitalie, **Ciolac Dumitru**, Anestiadi Vasile, Vataman Anatolie, Groppa Stanislav. *What makes the difference: revealing the neuroanatomical correlates of nocturnal and diurnal seizures*. Chişinău, Moldova.

- **Vataman Anatolie**, Chiosa Vitalie, Anestiadi Vasile, Ciolac Dumitru, Groppa Stanislav. *Brain structural integrity alterations in epilepsy with myoclonic seizures*. Chișinău, Moldova.
- **Jansen Olav**. *Technical developments and clinical results for neurothrombectomy in acute ischemic stroke*. Kiel, Germany.
- **Calli Cem**. *Non-traumatic brain injuries*. Izmir, Turkey.
- **Kastler Bruno**. *Radiologie interventionnelle dans le traitement des céphalées réfractaires*. Paris, France.
- **Moldovanu Maria**, Miron Ana. *Presurgical diagnostic work-up in epilepsy*. Chișinău, Moldova.
- **Sanduța Carolina**. *Le diagnostic d'imagerie de la mort cérébrale*. Chișinău, Moldova.
- Prohin Vladimir, **Orlic Anna**, Bejenari Oleg. *Evaluation of CSF flow dynamics by phase contrast ultra-high field MRI in different types of hydrocephalus*. Chișinău, Moldova.

12^{20}-12^{50} – Lunch

12^{50}-13^{20} – Contrast agents session

- **Gheonea Ioana Andreea**, Lucian Mihai Florescu, Alina-Maria Lapadat, Raluca-Elena Meetescu, Ioana-Adina Cotoi, Maria Violeta Novac, Simona Bondari. *Role of gadoxetic-acid enhanced 3T MRI and diffusion in liver nodules diagnosis*. Craiova. Romania.
- **Rotaru Natalia**. *Substanțele de contrast în patologia glandelor mamare examinate prin IRM 1,5T*. Chișinău, Moldova.

13^{25}-15^{20} – Cardiovascular Imaging session

Moderators: Aureliu Batrînac (Moldova), Gaxotte Virginia (France), Tregubova Mariia (Ukraine)

- **Batrînac Aureliu**. *Imagistica în patologia aortei – viziunea chirurgului cardiovascular.* Chișinău, Moldova.
- **Gaxotte Virginia.** *Comment réussir un scanner cardiaque et coronarien (SCC)?* Paris, France.
- **Grib Andrei**, Abraș Marcel, Surev Artiom. *Măsurarea rezervei fracționale de flux pentru aprecierea funcțională a severității stenozelor coronariene*. Chișinău, Moldova.
- **Tregubova Mariia**. *Le rôle de l'angioscanner coronarien dans l'évaluation de la maladie coronarienne [The role of CT coronary angiography in the evaluation of coronary artery disease]*. Kyiv, Ukraine.
- **Malîga Oxana**, Rotaru Natalia, Repin Oleg, Corcea Vasile, Guzgan Iurie. *Évaluation echocardiographique de l'hypertension artérielle pulmonaire dans les cardiopathies congénitales.* Chișinău, Moldova.
- **Cucu Ilona**, Cerevan Eugen. *Angioplastia cu balon a valvei arterei pulmonare.* Chișinău, Moldova.
- **Cazacu Anatolie**. *Evaluarea deformării globale a miocardului ventricular prin rezonanță magnetică cardiacă la voluntarii sănătoși.* Chișinău, Moldova.
- **Grigore Popusoi**. *Sténose de l'artère carotide chez les patients asymptomatiques: quand et quoi faire? [Carotid artery stenosis in asymptomatic patients: when and what should be done?].* Mercogliano, Italy.

15^{20}-15^{30} – Coffee break

15^{30}-18^{00} – Oncology Imaging session (part I)

Moderators: Frank Boudghene (France), Lorenzo Mannelli (USA), Sukru Mehmet Erturk (Turkey), Dana Stoian (Romania).

- **Boudghene Frank**. *Radiologie interventionnelle percutanée en cancérologie*. Paris, France.
- **Mannelli Lorenzo**. *Liver imaging in oncologic patients lecture.* New York, USA.
- **Mannelli Lorenzo**. *Pancreatic cancer lecture.* New York, USA.
- **Paroder Viktoriya**. *Imaging rectal cancer in 2018: how good are we?* New York, USA.
- **Paroder Viktoriya**. *Imaging esophageal cancer in 2018: achievements and challenges.* New York, USA.
- **Erturk Sukru Mehmet**. *Les défis de l'imagerie hépatique et pancréatique [Challenges in hepatic and pancreatic imaging].* Adiyaman, Turkey.
- **Caramella Davide**. *CT in oncology: the evaluation of response to treatment.* Pisa, Italy.

Conference Hall

10^{00}-12^{15} – Ultrasound Imaging session

Moderators: Vladimir Mitkov (Russia), Aristida Colan-Georges (Romania)

- **Caraiani Cosmin**. *Diagnostic de la cirrhose hépatique [Diagnosticul imagistic al cirozei hepatice]*. Cluj-Napoca, Romania.
- **Mitkov Vladimir**. *Ультразвуковая эластография – современное состояние [Ultrasound elastography – trends and current state]*. Moscow, Russia.
- **Mitkov Vladimir**. *Новые технологии ультразвуковой диагностики [New developments in ultrasound technology]*. Moscow, Russia.
- **Mitkova Mina**. *Ультразвуковая эластография в диагностике патологии яичка [Ultrasound elastography in the diagnosis of testicular pathology]*. Moscow, Russia.
- **Colan-Georges Aristida**. *Une nouvelle approche: l'intégration de 3D Doppler et de la Sono-élastographie strain dans l'Echographie du pelvis féminin [A New Approach: 3D Doppler and Strain Sonoelastography Integration in the Female Pelvis Ultrasonography]*. Craiova, Romania.
- **Puiu Serghei**. *Ultrasound assessment of normal adnexa torsion*. Chișinău, Moldova.
- **Tâmbală Carolina**. *Portal hemodynamics disorders severity scoring by Doppler ultrasound in liver cirrhosis*. Chișinău, Moldova.
- **Ciubotaru Irina**, Sliusarenco Andriana, Fuior-Bulhac Liliana, Beșliu Elena. *Diagnosticul ecografic prenatal al malformațiilor congenitale*. Chișinău, Moldova.
- **Grib Vitalie**. *Rolul sistemului de raportare PI-RADS în stadializarea cancerului de prostată*. Chișinău, Moldova.
- **Moșin Veaceslav Jr**, Bejan Feodosie, Certan-Bejan Rodica. *Rolul investigațiilor imagistice în diagnosticul ageneziei corpului calos*. Chișinău, Moldova.
- **Stoian Dana**, Craciunescu Mihaela, Craina Marius, Varcus Florian, Pantea Stelian. *Faux positifs résultats de l'élastographie en temps réel dans le diagnostic des lésions nodales thyroïdiennes [Rezultate fals pozitive ale elastografiei în timp real, în diagnosticul leziunilor nodulare tiroidiene]*. Timișoara, Romania.

13^{40}-15^{20} – Junior Radiologists and Technologists session

Moderators: Veaceslav Dînga (Moldova), Florin Bîrsăsteanu (Romania)

- **Ursulean Ion**. *Gestion de la qualité en radioprotection et justification des études radiologiques diagnostiques: où en sommes-nous?* Chișinău, Moldova.
- **Sandu Viorel**. Sanduța Carolina, Cuciuc Sergiu. *Actualitatea diagnosticului primar al cancerului și a stărilor precanceroase ale colonului prin irigoscopie.* Chișinău, Moldova.
- **Untilov Adriana.** *The importance of computed tomography in the management of renal trauma*. Chișinău, Moldova.
- **Cojocaru Nadejda**. *Diagnosticul necrozei aseptice a capului femural prin radiografie și IRM*. Chișinău, Moldova.
- **Baroncea Radu.** *Rolul tomografiei computerizate în diagnosticul și managementul angiomiolipoamelor renale*. Chișinău, Moldova.
- **Ursachi Daniela**. *Rolul radiografiei toracice în evaluarea stării postoperatorii la pacienții supuși operațiilor cardiace*. Chișinău, Moldova.
- **Cebanu Tatiana.** *Diagnosticul cancerului glandei mamare prin mamografie*. Chișinău, Moldova.

June 2, 2018

Senate Hall

08^{00}-10^{00} – Oncology Imaging session (part II)

Moderators: Konstantin Kenigsberg (Belarus), Aristida Colan-Georges (Romania), Mario Taha (Ukraine)

- **Kenigsberg Konstantin**. *Whole-Body Diffusion-Weighted MRI: Current Place in Diagnostic Workflow.* Minsk, Belarus.
- **Taha Mario**. *Imagerie par résonance magnétique dans le cancer de la prostate [Magnetic resonance imaging in prostate cancer]*. Odessa, Ukraine.
- **Caraiani Cosmin**. *Le rôle de l'imagerie dans le diagnostic différentiel des lésions focales hépatiques [Rolul imagisticii în diagnosticul diferențial al leziunilor focale hepatice]*. Cluj-Napoca, Romania.

- **Mitkova Mina**. *Ультразвуковая эластография в диагностике рака предстательной железы [Ultrasound elastography in the diagnosis of prostate cancer]*. Moscow, Russia.
- **Cealan Andrei**. *Pièges dans le diagnostic IRM dans le cancer du col de l'utérus.* Chișinău, Moldova.
- **Ibrahimov Roman**. *Image guided Radiotherapy (IGRT). Evolving role of radiology and nuclear medicine in patients undergoing radiotherapy treatment.* Neolife, Turkey.

10^{00}-10^{10} – Coffee break

10^{10}-11^{30} – Osteoarticular Imaging session

Moderators: Florin Birsasteanu (Romania), Nicolai Nalivaico (Moldova), Brunno Kastler (France)

- **Birsasteanu Bogdan**. *Imagerie de l'anatomie de l'articulation du genou [Anatomia imagistică a articulației genunchiului]*. Timișoara, Romania.
- **Birsasteanu Florin**. *IRM pour l'investigation de l'articulation du genou: algorithme d'interprétation [Algoritmul de interpretare a investigatiei RMN a articulații genunchiului]*. Timisoara, Romania.
- **Tutelca Adrian**, Juratu Catalin, Crisenescu Dana, Birsasteanu Florin. *Embolisation préopératoire des tumeurs osseuses [Embolizarea preoperatorie a tumorilor osoase]*. Timisoara, Romania.
- **Moldovan Antonia**, Birsasteanu Florin, Miu Oana. *L'ostéoporose transitoire de la hanche chez les patients post-partum [Osteoporoza tranzitorie a șoldului la paciente în perioada post-partum]*. Timișoara, Romania.
- **Benta Marius**, Birsasteanu Florin, Miu Oana, Onet Dan. *La contribution de l'imagerie par résonance magnétique à diffusion pondérée (DWI) à l'évaluation du degré et de l'évolution de la sacroiliite [Aportul secvenței DWI în diagnosticul și aprecierea gradului și evoluției sacro-ileitei]*. Timisoara, Romania.
- **Kastler Bruno**. *Nouveautés en Radiologie interventionnelle osseuse*. Paris, France.

11^{30}-11^{50} – Canon Medical Systems Europe session

- **Sobiszewski Henio.** Canon Medical Systems. Zoetermeer, The Netherlands.

11^{55}-12^{25} – Thoracic Imaging session

Moderators: Igor Gavrilașenco (Moldova), Nadejda Pisarenco (Moldova)

- **Pisarenco Nadejda**. *Tomosinteza digitală în diagnosticul și monitorizarea tuberculozei organelor respiratorii.* Chișinău, Moldova.
- **Harea Marina**. *Rolul tomosintezei digitale a toracelui în diagnosticul cancerului pulmonar*. Chișinău, Moldova.
- **Crivceanscaia Evghenia**. *Diagnostic accuracy of computed tomography findings in premature infants with bronchopulmonary dysplasia*. Chișinău, Moldova.

12^{30}-13^{00} – Lunch

13^{00}-14^{10} – Urogenital & Breast Imaging session

Moderators: Silviu Condrea (Moldova), Mario Taha (Ukraine)

- **Taha Mario.** *Le rôle de l'imagerie par résonance magnétique dans les endométriose pelvienne profonde [The role of MRI imaging in endometriosis]*. Odessa, Ukraine.
- **Crivceanschii Maxim**. *Diagnostic value of magnetic resonance imaging optimized protocols in evaluation of BI-RADS category 0 lesions detected by conventional imaging***.** Chișinău, Moldova.
- Condrea Silviu, Ersov Serghei, Balabchina Anna, **Șaptefrați Xenia**. *Dual-energy Computed Tomography gemstone spectral imaging: new horizons in visualization and differentiation of kidney stones composition.* Chișinău, Moldova.
- **Cuțitari Irina**, Mișina Ana, Rotaru Natalia. *Uterul unicorn: metode moderne de vizualizare.* Chișinău, Moldova.
- Mișina Ana, **Harea Patricia**, Madan Diana, Fuior-Bulhac Liliana, Cuțitari Irina. *Ovarian mucinous cysts in children and adolescents*. Chișinău, Moldova
- **Colan-Georges Aristida.** *L'utilité du concept d'échographie mammaire complète dans le diagnostic du cancer du sein sans masse développée. [The usefulness of the full breast ultrasonography concept in the diagnosis of the non-mass-like breast cancer]. Craiova, Romania.*

14^{20}-14^{35} – Closing Speech

14^{45}-15^{15} – General Meeting of the Society of Imaging Physicians of the Republic of Moldova

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- TerraMed
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WELCOME MESSAGE

Dear Colleagues, Partners and Friends!

It is a great pleasure and an honor to extend to you a warm invitation to attend the IVth Congress of Radiology and Medical Imaging of the Republic of Moldova with international participation.

The rapid pace of technological development during the last decades has led to fundamental changes affecting not only the practice of radiology and medical imaging, but also that of medicine itself. As in many other countries, the imaging physicians in the Republic of Moldova needed to review and redefine their roles. Our efforts have been boosted by continuous acquisition of advanced imaging equipment, implementation of new imaging modalities and a variety of new multiparametric techniques.

To meet these new demands, the training curriculum in Radiology and Medical Imaging underwent a rapid development at both undergraduate and graduate levels. The specialty residency program has undergone a tremendous transformation, being supplemented by a new Nuclear Medicine residency track, while the formal education of technologists has been transferred to the Nicolae Testemitsanu State University of Medicine of Pharmacy.

We take great pride in hosting this congress and welcome our guests and leading experts from USA, France, Italy, Turkey, Romania, Ukraine, Belarus, Russia and Germany.

A Warm Welcome to All of You!

Natalia Rotaru, MD, PhD, Professor of Radiology
Chairman of the Organizing Committee
Chairman of the Department of Radiology and Imaging
Nicolae Testemitsanu State University of Medicine and Pharmacy
Chisinau, the Republic of Moldova

MESSAGE DE BIENVENUE

Chers collègues, partenaires et amis!

C'est un grand plaisir et un honneur de vous adresser une invitation chaleureuse à participer au IVeme Congrès de Radiologie et d'Imagerie Médicale de la République de Moldavie avec une participation internationale.

Le rythme rapide du développement technologique au cours des dernières décennies a entraîné des changements fondamentaux affectant non seulement la pratique de la radiologie et de l'imagerie médicale, mais aussi celle de la médecine elle-même. Comme dans beaucoup d'autres pays, les radiologues en République de Moldavie ont dû revoir et redéfinir leurs rôles. Nos efforts ont été renforcés par l'acquisition continue d'équipements d'imagerie avancés, la mise en œuvre de nouvelles modalités d'imagerie et une variété de nouvelles techniques multiparamétriques.

Pour répondre à ces nouvelles demandes, le programme de formation en radiologie et en imagerie médicale a connu un développement rapide tant au premier cycle qu'aux cycles supérieurs. Le programme de résidence de spécialité a subi une transformation énorme, complétée par une nouvelle voie de résidence en médecine nucléaire, tandis que la formation des technologues a été transférée à l'Université d'État de médecine et de pharmacie «Nicolae Testemitanu».

Nous sommes très fiers d'accueillir ce congrès et d'accueillir nos invités et les meilleurs experts des Etats-Unis, de France, d'Italie, de Turquie, de Roumanie, d'Ukraine, de Biélorussie, de Russie et d'Allemagne.

Un accueil chaleureux à vous tous!

Natalia Rotaru, MD, PhD, Professeur universitaire
Président du comité d'organisation
Chef du Département de Radiologie et Imagerie Medicale,
l'Université d'État de médecine et de pharmacie «Nicolae Testemitanu»
Chisinau, République de Moldavie

FOREWORD

Dear Colleagues!

In recent years, the role of medical imaging has been increasing at a rapid pace, significantly influencing the diagnosis, treatment and management of a wide range of disorders in both pediatric and adult patients. Newly emerged fusion imaging modalities such as PET/CT and PET/MRI as well as a variety of molecular imaging techniques are widely used for managing patients with cancer, neurologic diseases and cardiovascular disorders, providing valuable information about both anatomy and function.

The constantly advancing field of medical imaging makes it often challenging for radiologists and nuclear medicine physicians to stay current and up-to-date with all the advancements and technological developments in this specialty. At the same time, this is an exciting era to be a radiologist and let us exchange our experience, ideas and knowledge on the various aspects of medical imaging.

I sincerely expect an enjoyable interaction, scientific exchange and collaboration for all those involved in this exciting and evolving field and look forward to our journey together.

Abass Alavi, MD, MD (Hon), PhD (Hon), DSc (Hon)
Honorary Chairman of the Congress
Professor of Radiology and Neurology
Director of Research Education
Department of Radiology
University of Pennsylvania Hospital
Philadelphia, PA, USA

AVANT-PROPOS

Chers collègues!

Au cours des dernières années, le rôle de l'imagerie médicale s'est développé à un rythme rapide, influençant de manière significative le diagnostic, le traitement et la gestion d'un large éventail de troubles chez les patients pédiatriques et adultes. Les nouvelles techniques d'imagerie par fusion telles que TEP / TDM et TEP / IRM ainsi qu'une variété de techniques d'imagerie moléculaire sont largement utilisées pour traiter les patients atteints de cancer, de maladies neurologiques et cardiovasculaires, fournissant des informations précieuses sur l'anatomie et la fonction.

Le domaine en constante évolution comme l'imagerie médicale fait qu'il est souvent difficile pour les radiologues et les spécialistes en médecine nucléaire de rester à jour avec tous les progrès et les développements technologiques dans cette spécialité. En même temps, c'est une époque passionnante pour être radiologue et échanger nos expériences, idées et connaissances sur les différents aspects de l'imagerie médicale.

Je m'attends sincèrement à une interaction agréable, à un échange scientifique et à une collaboration pour tous ceux qui sont impliqués dans ce domaine passionnant et en évolution, et j'attends avec impatience notre voyage ensemble.

Abass Alavi, MD, MD (Hon), PhD (Hon), DSc (Hon)
Président d'honneur du Congrès
Professeur de radiologie et de neurologie
Directeur de l'éducation à la recherche
Département de radiologie,
Hôpital de l'Université de Pennsylvanie
Philadelphie, PA, États-Unis

GREETINGS

Dear Friends!

I am honoured to be a part of the IVth Congress of Radiology and Medical Imaging of the Republic of Moldova. Thanks to you all for being a part of this excellent meeting! I will be happy to contribute to the education of physicians dealing with Radiology in Moldova and to meet them personally. I would like to express my gratitudes to the local organizers, especially Prof. Natalia Rotaru as the Chairman of the Organizing Committee, and Prof. Slava Dinga for preparing an excellent educational programme with international participation.

Looking forward to meet you all!

Prof. Dr. Cem Calli
Head of Neuroradiology Section
Department of Radiology
Treasurer of European Society of Neuroradiology
Secretary General of European Society of Emergency Radiology
Chief Financial Officer (CFO) of European Board of Neuroradiology
Secreteray General of the Turkish Society of Neuroradiology
Ege University, Izmir, Turkey

MASAGES DE SALUT

Chers amis!

Je suis honoré de faire partie du IVème Congrès de Radiologie et d'Imagerie Médicale de la République de Moldavie. Merci à vous tous d'avoir participé à cette excellente réunion! Je serai heureux de contribuer à l'éducation des médecins traitants de la radiologie en Moldavie et de les rencontrer personnellement. Je voudrais exprimer ma gratitude aux organisateurs locaux, en particulier le professeur Natalia Rotaru en tant que président du comité d'organisation, et le professeur Slava Dinga pour avoir préparé un excellent programme éducatif avec une participation internationale.

Au plaisir de vous rencontrer tous!

Prof. Dr. Cem Calli
Chef de la Section de Neuroradiologie
Département de Radiologie
Trésorier de la Société Européenne de Neuroradiologie
Secrétaire général de la Société européenne de radiologie d'urgence
Directeur Financier du Conseil Européen de Neuroradiologie
Secrétaire Général de la Société Turque de Neuroradiologie
Université Ege, Izmir, Turquie

Dear Colleagues from Moldova!

In the recent years Romania and the Republic of Moldova have significantly evolved in terms of radiology and imaging diagnosis, techniques and equipment. Also, the training and educational programs in our countries meet the European criteria.

I am very honored to participate in this congress and also to share and improve our experience in the field of radiology and imaging diagnosis. I hope that this meeting is a bridge and a step of a great renewed collaboration between our countries.

Therefore, I salute the organizing committee and their efforts of joining together in this congress radiologists from Moldova and other countries.

Ioana Andreea Gheonea, MD, PhD, MSc
Professor of Radiology
Radiology and Medical Imaging Department, Faculty of Medicine
University of Medicine and Pharmacy of Craiova
Craiova, Romania

Chers collègues de Moldavie!

Au cours des dernières années, la Roumanie et la République de Moldavie ont considérablement évolué en termes de diagnostic, des techniques et d'équipements de radiologie et d'imagerie. De plus, les programmes de formation et d'éducation de nos pays répondent aux critères européens.

Je suis très honorée de participer à ce congrès et aussi de partager et d'améliorer notre expérience dans le domaine de la radiologie et du diagnostic par imagerie. J'espère que cette rencontre sera un pont et une étape d'une grande collaboration renouvelée entre nos pays.

Par conséquent, je salue le comité organisateur et ses efforts de se joindre à ce congrès des radiologues de Moldavie et d'autres pays.

Ioana Andreea Gheonea, MD, PhD, MSc
Professeur de Radiologie
Département de radiologie et d'imagerie médicale, Faculté de Médecine
Université de Médecine et de Pharmacie de Craiova
Craiova, Roumanie

My dear fellow radiologists from Moldova!

It is a real honour and pleasure for me to join you for the IVth Congress of Radiology and Medical Imaging of the Republic of Moldova. I hope to effectively share my experiences about the radiology with you throughout the congress. I am sure that this meeting will be a great success and a very important step to the further collaboration possibilities between the Society of Imaging Physicians of the Republic of Moldova and both Turkish Society of Radiology and Turkısh Society of Magnetic Resonance Imaging.

I am looking forward to meeting you in Chisinau.

Sukru Mehmet Erturk, MD
Chairman and Professor of Radiology
Department of Radiology
Adiyaman University School of Medicine
Adiyaman, Turkey

Mes chers collègues radiologues de Moldavie!

C'est pour moi un réel honneur et un plaisir de me joindre à vous pour le IVeme Congrès de Radiologie et d'Imagerie Médicale de la République de Moldavie. J'espère partager avec vous mes expériences sur la radiologie tout au long du congrès. Je suis sûr que cette réunion sera un grand succès et une étape très importante pour d'autres possibilités de collaboration entre la Société des Médecins Imagistes de la République de Moldavie et la Société Turque de Radiologie et la Société Turque d'Imagerie par Résonance Magnétique.

Je suis impatient de vous rencontrer à Chisinau.

Sukru Mehmet Erturk, MD
Président et Professeur de Radiologie
Département de radiologie
École de médecine de l'université Adiyaman
Adiyaman, Turquie

Dear Colleagues, Partners and Friends!

This is a great joy to attend the IVth Congress of Radiology and Medical Imaging of the Republic of Moldova with international participation, and to meet you again, so friendly and extremely welcoming people!

The sciences did not recognize any borders, neither in space nor time, and especially in the human mind and intelligence. The Healthcare sciences could not except the rule, and the Radiology and Medical Imaging has one of the most spectacular "expansion" in the diagnostics, treatment, research, all based on the continuous performing technology and the collaboration of the physicians with the engineering specialists. We are able to offer to other medical specialties more than they dare to ask, and a good collaboration should be based on a good multilateral information.

This is the sense of such Congresses, to create a harmony between different specialists, technologies, knowledges and practical experience, similar to a valuable orchestra. We wish a great success to this Congress and to the new relationships to be developed, which will reassure the worldwide continuous development of the Radiology!

Aristida Colan-Georges, MD, PhD
Senior Radiologist
Prima Medical – MedLife
SC PAN MED Laboratories
Craiova, Romania

Chers Collègues, Partenaires et Amis!

Je suis bien heureuse de participer au IVème Congrès de Radiologie et d'Imagerie Médicale de la République de Moldavie, avec une participation internationale, et de vous rencontrer de nouveau, les très aimables et extrêmement chaleureux peuples!

Les sciences n'ont pas connu nulle frontière, soit en espace ou en temps, et surtout en l'esprit humain et son intelligence. Les Sciences Médicales n'ont pas excepté la règle, et la Radiologie et l'Imagerie Médicale ont connu une des plus spectaculaires "expansions" dans le diagnostic, le traitement, la recherche, tous soutenus par la technologie en perfection continue et par la collaboration des médecins avec les spécialistes ingénieurs. Nous sommes capables maintenant d'offrir aux autres spécialités médicales de plus qu'ils osent de demander, et une bonne collaboration doit être soutenue par un échange d'information multilatérale.

C'est le rôle de ce Congrès, de réaliser une harmonie entre différents spécialistes, la technologie, les connaissances et l'expérience pratique, similaire à une magnifique orchestre. Nous souhaitons un grand succès aux travaux de ce Congrès et aux nouvelles liaisons qui vont se développer, et vont assurer le développement de la Radiologie du monde entier!

Aristida Colan-Georges, MD, PhD
Senior Radiologiste
Prima Médical – MedLife
SC PAN MED Laboratoires
Craiova, Roumanie

Dear Colleagues!

The structural changes that Moldovan radiologists have been able to implement in their educational system are impressive. The Moldovan radiology educational system standards now have a leading position among western countries. It is a pleasure and honor to be involved in this modernisation process through this meeting.

Lorenzo Mannelli, MD, PhD
Department of Radiology
Memorial Sloan-Kettering Cancer Center
New York, NY, USA

Chers collègues!

Les changements structurels que les radiologues moldaves ont pu mettre en oeuvre dans leur système éducatif sont impressionnants. Les normes du systéme d'enseignement de la radiologie moldave occupent maintenant une position de premier plan parmi les pays occidentaux. C'est un plaisir et un honneur de participer à ce processus de modernisation grâce a cette réunion.

Lorenzo Mannelli, MD, PhD
Département de radiologie
Mémorial Sloan-Kettering Centre du cancer
New York, NY, États-Unis

Dear Colleagues and Friends!

Radiology can be divided into two sub-branches: diagnostic radiology and interventional radiology, which has become indispensable in the healthcare industry. Interventional radiology and its branches like interventional neuroradiology and interventional cardiology are among the most rapidly evolving disciplines in medicine. Exceedingly dependent upon advancements in medical science, computer engineering, and software development, the range of diseases treatable by endovascular techniques appears nearly infinite. Many vascular and structural diseases, treated in the past with high risk in the operating theatre, can now be safely treated in the angiography suite.

For current physicians, staying up-to-date with medical imaging and technological developments is mandatory, especially with rapid advancements in medical science and technological innovations. I am sure that exchanging our knowledge and experience will be of great importance for us.

I am honored and pleased to participate at the Fourth Congress of Radiology and Medical Imaging of the Republic of Moldova.

Grigore Popusoi, MD
Interventional Cardiologist
Department of Interventional Cardiology and Interventional Radiology
Montevergine Clinic, Mercogliano (AV), Italy

Chers collègues et amis!

La radiologie peut être divisée en deux sous-branches: la radiologie diagnostique et la radiologie interventionnelle, devenue indispensables dans l'industrie de la santé. La radiologie interventionnelle et ses branches comme la neuroradiologie interventionnelle et la cardiologie interventionnelle font partie des disciplines les plus en évolution en médecine. Dépassant largement des progrès de la science médicale, du génie informatique et du développement de logiciels, l'éventail des maladies traitables par les techniques endovasculaires semble presque infini. De nombreuses maladies vasculaires et structurelles, traitées dans le passé en salle d'opération, avec un risque élevé, peuvent maintenant être traitées en toute sécurité dans la salle d'angiographie.

Pour les médecins actuels, rester à jour avec l'imagerie médicale et les développements technologiques est obligatoire, en particulier avec les progrès rapides de la science médicale et des innovations technologiques. Je suis sûr que l'échange de nos connaissances et de notre expérience sera d'une grande importance pour nous.

Je suis honoré et heureux de participer au quatrième Congrès de Radiologie et d'Imagerie Médicale de la République de Moldavie.

Grigore Popusoi, MD
Cardiologue interventionnelle
Département de cardiologie interventionnelle et de radiologie interventionnelle
Clinique de Montevergine, Mercogliano (AV), Italie

Dear Colleagues!

Medical imaging has been advancing at an increasing pace during the last years and is currently involved in most stages of clinical diagnosis and therapy. Within this broad spectrum of modalities and techniques, nuclear medicine has a definite role and is constantly gaining importance and popularity. In this context, it is worth mentioning that Neolife has recently opened a Nuclear Medicine department in Chisinau, with capabilities for both scintigraphy and PET-CT.

It will be my pleasure to review the key points of the nuclear modalities for diagnostic imaging and therapy and to illustrate them with specific cases. I am confident that this meeting will constitute a venue for successful sharing of knowledge and will benefit in equal measure the radiologists, nuclear medicine physicians and clinicians.

Liviu Stănişor, MD, PhD
Head of Nuclear Medicine Department
Neolife Medical Center
Iasi, Romania

Chers collègues!

L'imagerie médicale progresse de plus en plus au cours des dernières années et participe actuellement à la plupart des étapes du diagnostic clinique et de la thérapie. Au sein de ce large spectre de modalités et de techniques, la médecine nucléaire a un rôle défini et gagne constamment en importance et en popularité. Dans ce contexte, il convient de mentionner que Neolife a récemment ouvert un département de médecine nucléaire à Chisinau, avec des capacités à la fois pour la scintigraphie et la TEP-TDM.

Il me fera plaisir de passer en revue les points clés des modalités nucléaires pour l'imagerie diagnostique et la thérapie et de les illustrer par des cas spécifiques. Je suis convaincu que cette réunion constituera un lieu de partage réussi des connaissances et bénéficiera à parts égales des radiologues, des médecins spécialistes de la médecine nucléaire et des cliniciens.

Liviu Stanisor, MD, PhD
Chef du Département de médecine nucléaire
Centre médical Neolife
Iasi, Roumanie

Dear Colleagues!

It is a great pleasure and an honor to participate as an invited speaker at the IVth Congress of Radiology and Medical Imaging of the Republic of Moldova. Being an endocrinologist involved in thyroid and breast ultrasound diagnostics, I appreciate every occasion where I can spread the advantages of ultrasound evaluation, both old and new techniques, seen through the eyes of clinical practitioners.

I am impressed with the ongoing interest present in the community of Moldovan imaging physicians towards information, learning, evolving and using the newest techniques in order to make better recommendations for their patients.

I am looking forward to meet you all in Chisinau!

Dana Stoian, MD, PhD, CCD, FECSM
Associate Professor of Medicine
Senior Endocrine Consultant, Department of Endocrinology
Victor Babeş University of Medicine and Pharmacy
Timisoara, Romania

Chers collègues!

C'est un grand plaisir et un honneur de participer en tant qu'orateur invité au IVème Congrès de Radiologie et d'Imagerie Médicale de la République de Moldavie. En tant qu'endocrinologue impliqué dans le diagnostic échographique de la thyroïde et du sein, j'apprécie chaque occasion où je peux diffuser les avantages de l'évaluation échographique, à la fois anciennes et nouvelles, perçues par les praticiens cliniques.

Je suis impressionné par l'intérêt que présente la communauté des médecins de l'imagerie moldaves pour l'information, l'apprentissage, l'évolution et l'utilisation des techniques les plus récentes afin de faire de meilleures recommandations pour leurs patients.

Je suis impatient de rencontrer vous tous à Chisinau!

Dana Stoian, MD, PhD, CCD, FECSM
Professeur agrégé de médecine
Consultante principale en endocrinologie, Département d'endocrinologie
Université de médecine et de pharmacie Victor Babes
Timisoara, Roumanie

Dear Colleagues!

The Moldovan Radiology has significantly improved its diagnostic standards during the last few years by continuous implementation of new imaging modalities and a variety of new imaging techniques. It is a great honor to be a participant of the IVth Congress of Radiology and Medical Imaging of the Republic of Moldova.

It will be a special pleasure for me to share our experience and to improve my knowledge.

Mariia Tregubova, MD
Department of Radiology
Amosov National Institute of Cardiovascular Surgery
Kiev, Ukraine

Chers collègues!

La radiologie moldave a considérablement amélioré ses normes de diagnostic au cours des dernières années par la mise en œuvre continue de nouvelles modalités d'imagerie et une variété de nouvelles techniques d'imagerie. C'est un grand honneur d'être un participant du IVeme Congrès de Radiologie et d'Imagerie Médicale de la République de Moldavie.

Ce sera un plaisir spécial pour moi de partager notre expérience et d'améliorer mes connaissances.

Mariia Tregubova, MD
Département de radiologie
Institut national de chirurgie cardiovasculaire «Amosov»
Kiev, Ukraine

Dear Colleagues and Friends!

I'm very impressed by improvement of Radiology in Moldova that was made during recent years. Radiology is one of the fastest developing fields of Medicine. New scanners, software and techniques open new possibilities for early detection, correct differential diagnosis and staging of disease that of course lead to better treatment management and improve overall medical service quality.

For me it is a great honor and pleasure to take part in the IVth Congress of Radiology and Medical Imaging of the Republic of Moldova and share Belarussian experience and our latest achievements in the field of Oncologic Radiology and state-of-the-art MRI techniques. I'm looking forward to establish new relationships between the Society of Imaging Physicians of the Republic of Moldova and Belarussian Society of Radiology, to meet Professionals from Moldova, Europe and North America.

I wish all my Colleagues and Friends a great Congress!

Konstantin Kenigsberg, MD
Leading MRI Specialist
Minsk Cancer Center
Attending Lecturer, Belarussian State Medical University
Minsk, Belarus

Chers collègues et amis!

Je suis très impressionné par l'amélioration de la radiologie en Moldavie qui a été faite au cours des dernières années. La radiologie est l'un des domaines de la médecine qui se développe le plus rapidement. De nouveaux scanners, logiciels et techniques ouvrent de nouvelles possibilités de détection précoce, de diagnostic différentiel correct et de classification des maladies, ce qui conduit bien sûr à une meilleure prise en charge thérapeutique et à une amélioration de la qualité globale du service médical.

Pour moi, c'est un grand honneur et un plaisir de participer au IVème Congrès de Radiologie et d'Imagerie Médicale de la République de Moldavie et de partager l'expérience biélorusse et nos dernières réalisations dans le domaine de la Radiologie cancérologique et techniques d'IRM à la fine pointe de la technologie. Je suis impatient d'établir de nouvelles relations entre la Société des médecins Imagistes de la République de Moldavie et la Société biélorusse de radiologie, pour rencontrer des professionnels de la Moldavie, de l'Europe et de l'Amérique du Nord.

Je souhaite à tous mes collègues et amis un grand congrès!

Konstantin Kenigsberg, MD
Spécialiste en IRM
Centre de cancérologie de Minsk
Conférencier, Université d'État de Médecine
Minsk, Biélorussie

Dear Colleagues and Friends,

We are very honored and pleased to participate in the IVth Congress of Radiology and Medical Imaging in the Republic of Moldova.

Medical imaging equipment and technologies are evolving at an incredible speed. Accordingly, the amount of new scientific information is growing. This information should be regularly reported to practitioners, and technologies should be implemented in routine practice. We are confident that this Congress will successfully solve these important tasks! Finally, informal communication on the sidelines, exchange of experience, new professional acquaintances will undoubtedly benefit the further development of medical imaging in the Republic of Moldova.

We are sure that Congress is doomed to success!

Professor Vladimir V. Mitkov, MD, PhD
Director, Diagnostic Ultrasound Department, Russian Medical Academy of Continuous Postgraduate Education
President, Russian Association of Specialists in Ultrasound Diagnostic in Medicine
Member, Education & Professional Standards Committee, European Federation of Societies of Ultrasound in Medicine and Biology
Moscow, Russia

Mina D. Mitkova, MD, PhD
Associate Professor, Russian Medical Academy of Continuous Postgraduate Education
Executive committee member, Russian Association of Specialists in Ultrasound Diagnostic in Medicine
Moscow, Russia

Chers collègues et amis,

Nous sommes très honorés et heureux de participer au IVème Congrès de Radiologie et d'Imagerie Médicale de la République de Moldova.

L'équipement et les technologies d'imagerie médicale évoluent à une vitesse incroyable. En conséquence, la quantité de nouvelles informations scientifiques augmente. Cette information devrait être régulièrement rapportée aux praticiens, et les technologies devraient être mises en œuvre dans la pratique courante. Nous sommes convaincus que ce Congrès réussira à résoudre ces tâches importantes! Enfin, la communication informelle en marge, l'échange d'expériences, de nouvelles connaissances professionnelles seront sans aucun doute bénéfiques pour le développement de l'imagerie médicale en République de Moldova.

Nous sommes sûrs que le Congrès est voué au succès!

Professeur Vladimir V. Mitkov, MD, PhD
Directeur, Département d'échographie diagnostique, Académie médicale russe de l'enseignement postuniversitaire continu,
Président de l'Association russe des spécialistes en diagnostic échographique en médecine,
Membre du Comité de l'éducation et des normes professionnelles, Fédération européenne des sociétés d'échographie en médecine et en biologie
Moscou, Russie

Mina D. Mitkova, MD, PhD
Professeur associé, Académie médicale russe de l'enseignement post-universitaire continu
Membre du comité exécutif, Association russe des spécialistes en diagnostic échographique en médecine
Moscou, Russie

INVITED SPEAKERS

Abass Alavi, MD, MD (Hon), PhD (Hon), DSc (Hon)
Professor of Radiology and Neurology
Director of Research Education
Department of Radiology, University of Pennsylvania Hospital
Philadelphia, PA 19104, USA

Dr. Abass Alavi is a distinguished professor in the Department of Radiology at the Hospital of the University of Pennsylvania (Philadelphia) and is well-known for his exceptional achievements in the field of positron emission tomography (PET) as well as the structural imaging with MRI and CT, including groundbreaking studies in cardiovascular diseases, neurologic disorders, and inflammation. Dr. Alavi is a researcher of the highest international reputation – one of a kind in his class who has mentored and trained a large number of physicians and scientists in the United States, Europe, South America, and Asia. With his unique background and education, he possesses the characteristics and qualities of a true polymath. He has been and remains to be the driving force behind the spread of knowledge about and the application of molecular imaging technology for the benefit of patients and society.

Dr. Alavi was born in 1938 in Tabriz, a city in the Azerbaijani region of Iran. After becoming a physician, he moved to the United States in 1966 to advance his education in a science-based specialty. Together with chemists at Brookhaven National Laboratory (Upton, NY), Dr. Alavi, David Kuhl (MD) and Martin Reivich (MD) introduced 18F-fluorodeoxyglucose (18F-FDG). Through this collaboration, in 1976, Dr. Alavi was the first to administer 18F-FDG to a human subject, producing tomographic images of the brain by means of a handmade Single-photon emission computed tomography (SPECT) device and planar whole-body images with a rectilinear scanner. His group pioneered the positron-emission tomography (PET) imaging of the normal brain and disorders (e.g., dementia, stroke, glioma, schizophrenia, and brain trauma). Professor Alavi has published over 1,000 articles in scholarly and high-impact journals. He is among the most cited physician/scientists in the United States, with current annual citations of 3,000 and citation indices of 50,000.

Previously, Dr. Alavi has been recognized with honorary degrees from the University of Bologna (Italy), the University of the Sciences (Philadelphia, PA), the Medical University of Gdansk (Poland), the University of Southern Denmark (Odense) and the Universities of Shiraz and Tabriz (Iran). He is a past recipient of the De Hevesy and Cassen awards from the Society of Nuclear Medicine and Molecular Imaging (SNMMI) and serves on the editorial board of many international journals.

Lorenzo E. Derchi, MD
President, European Society of Radiology, Vienna, Austria
Chairman and Professor of Radiology
University of Genoa, Genoa, Italy

Prof. Derchi graduated from the University of Genoa in Genoa, Italy, where he also completed his specialty training in Radiology. In his outstanding career, Prof. Derchi has made tremendous contributions in developing and improving the Radiology service at both regional and international levels, working as the Director of Operations Unit for Emergency Radiology, Director of the Radiological Technologies Department, Member of the Board of Directors and President of the Italian Ultrasound Society in Medicine and Surgery, Member of the Board and President of the European Society of Urogenital Radiology, Chairman of the Working Group on US of the European Society of Radiology (ESR), Member of the Executive Board of ESR, Chairman of the Communication and External Affairs Committee of ESR, etc. Prof. Derchi is the author of over 200 publications and an impressive number of book chapters, including the Genitourinary Ultrasound issue of Ultrasound Clinics. He is also acting as an Editorial Board member and reviewer of a variety of fundamental specialty journals such as European Radiology, Medical Radiology, European Journal of Radiology, British Journal of Radiology, Acta Radiologica, Journal of Clinical Ultrasound, European Journal of Radiology and many others.

Currently Prof. Derchi is the President of the European Society of Radiology (ESR), comprising over 75,000 members worldwide, and the President of the European Congress of Radiology (ECR).

Prof. Dr. Cem Calli
Ege University Medical Faculty
Department of Radiology
Chief of Neuroradiology Section
Izmir, Turkey

Dr. Cem Çallı started his work in neuroradiology in 1995 and currently he holds the position as the Chief of Neuroradiology Section in Ege University Medical Faculty, Izmir, Turkey, since 2009. He gave more than 150 invited lectures in national and international meetings. He is currently executive committee member of Turkish Society of Magnetic Resonance Imaging, Secretary General of Turkish Society of Neuroradiology, Secretary General of European Society of Emergency Radiology, and Treasurer of European Society of Neuroradiology.

Presentation at the congress

- Non-traumatic brain injuries

Davide Caramella, MD
Professor of Radiology and Chairman
Radiology Residency Program of the University of Pisa
Chairman, Radiodiagnostica 1 Universitaria
Cisanello Hospital of the University of Pisa
Pisa, Italy

Prof. Caramella studied medicine at the University of Florence in Italy, graduating *Cum Laude* both the Medical School and the Radiology Residency Program. After completing the specialty training, he continued his career at the University of Pisa in Italy as a staff radiologist (1992), Assistant Professor of Radiology (1998), Associate Professor of Radiology (2000), Vice Chairman of the Radiology Residency Program (2006 – 2015), President of the three-year University program for Radiographers (2007 – 2010), Vice Chairman of the Department of Oncology, Transplants and New Technologies in Medicine (2007 – 2012), Chairman of the Radiotherapy Residency Program (2013 – 2015) and full Professor of Radiology (2016).

Apart from his clinical and academic activities, Prof. Caramella conducted a variety of research projects concerning information technology applications in radiology. This gave him the opportunity to explore various issues about teleradiology, PACS systems, advanced image processing and internet applications for radiology. Throughout a period of over 20 years of activity in this field, he carried a broad range of responsibilities at both national and international level, serving as the President of EuroPACS (presently EuSoMII, European Society of Medical Imaging Informatics), President of the Working Group for Computer Science in Radiology of the Italian Society of Medical Radiology, President of the Information Technology Committee of the European Association of Radiology, President of the congress Computer Assisted Radiology and Surgery, member of the ICT subcommittee of European Society of Radiology, Chairman of the Health subcommittee of the European Society of Radiology, Scientific Director of Eurorad (www.eurorad.org), etc.

Prof. Caramella is the co-editor of 9 books on computer applications in radiology, advanced image processing, internet for radiologists, and radiation dose in diagnostic imaging. He published over 200 scientific papers on Magnetic Resonance Imaging, Oncologic Imaging, Pediatric Radiology, IT in Radiology and PAC Systems (h-index 30).

Currently Prof. Caramella is the Chairman of Radiodiagnostica 1 Universitaria of the Cisanello Hospital, Chairman of the Radiology Residency Program and the President of the three-year University program for Radiographers at the University of Pisa as well as the President of the Regional Tuscan Chapter of the Italian Society of Medical Radiology. He is also holding editorial and reviewer positions in various journals, being the Deputy Editor of the *International Journal of Computer Assisted Radiology and Surgery* and the Section Editor of the Computer Applications Section of the *European Radiology* journal.

Presentation at the congress

- CT in oncology: the evaluation of response to treatment

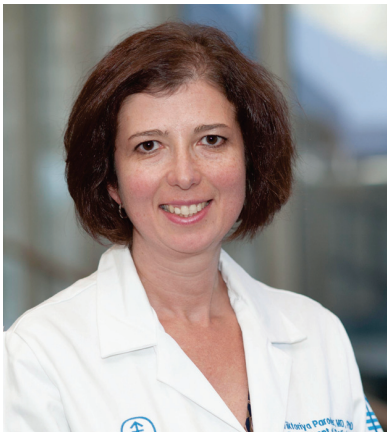
Lorenzo Mannelli, MD, PhD
Department of Radiology
Memorial Sloan-Kettering Cancer Center
New York, NY, USA

Dr. Lorenzo Mannelli is a diagnostic radiologist and nuclear medicine physician with specialty training in abdominal imaging (University of Washington, Seattle, USA and Cambridge University-Addenbrooke's Hospital, Cambridge, UK), cardiac imaging (New York University Medical Center, New York, NY, USA), nuclear medicine (University of Washington, Seattle, USA) and emergency radiology (University of Washington, Seattle, USA). He obtained his PhD degree in liver physiopathology at the University of Florence, Italy and is the author of 4 book chapters and over 70 peer reviewed journal articles.

This diverse training allows him to provide his patients with a comprehensive analysis of their health and disease, Dr. Manelli is a holder of USA, Italian and UK Medical Licences.

Presentations at the congress

- Liver imaging in oncologic patients lecture
- Pancreatic cancer lecture



Viktoriya Paroder, MD, PhD
Department of Radiology
Memorial Sloan-Kettering Cancer Center
New York, NY, USA

Dr. Paroder is a board-certified radiologist at the Memorial Sloan-Kettering Cancer Center in New York, NY, USA, where she is a member of the colorectal and esophageal disease management teams. After graduating as a valedictorian with Bachelor of Science degree with honors in Biochemistry at the State University of New York (SUNY) at Stony Brook, NY, USA, Doctor of Medicine (MD) and Doctor of Philosophy (PhD) in Molecular Pharmacology at the Albert Einstein College of Medicine in NY, USA, Dr. Paroder pursued her residency specialty training in Diagnostic Radiology followed by a fellowship in Abdominal imaging at the Montefiore Medical Center, University Hospital of the Albert Einstein College of Medicine, NY, USA.

Apart from her clinical work, Dr. Paroder is actively involved in teaching activities, teaching residents and fellows at the Memorial Sloan Kettering Cancer center in New York, teaching residents and medical students at the Montefiore Medical Center and Albert Einstein College of Medicine in the Bronx, NY, and radiology residents at St. Vincent's Medical Center in Bridgeport, CT.

Dr. Paroder is the author of over 20 publications and several book chapters and serves as a reviewer for a number of specialty journals such as European Radiology Journal, Clinical Imaging Journal, Abdominal Radiology Journal, Emergency Radiology Journal, Journal of Ultrasound in Medicine. Her achievements have been acknowledged with a variety of awards, including the *Magna cum laude Award*, American Roentgen Ray Society (ARRS) Scientific Program, New Orleans, LA (2017), *Certificate of Merit* for Education exhibit at the 103rd Scientific Assembly and Annual Meeting of the Radiological Society of North America (RSNA), Chicago, Illinois (2017), *Certificate of Merit* for Educational Exhibit at the Annual Society of Abdominal Radiology (SAR) meeting, Waikoloa, Hawaii (2016) and several others.

Presentations at the congress

- Imaging rectal cancer in 2018: how good are we?
- Imaging esophageal cancer in 2018: achievements and challenges

Vladimir V. Mitkov, MD, PhD
Chairman and Professor of Radiology
Diagnostic Ultrasound Department
Russian Medical Academy of Postgraduate Education
Moscow, Russia

Professor Mitkov obtained his Medical Doctor (MD) degree at the 2nd Moscow Medical Institute, his specialty training in Radiology and his PhD degree at the Central Institute for Physicians Post-graduate Training in Moscow, where he continued his activity as an Assistant Professor and an Associate Professor of Radiology. Pursuing his clinical and research goals, Dr. Mitkov defended his habilitated doctoral thesis, being appointed a Professor of Radiology and the Chairman of the Ultrasound Diagnostics Department of the Russian Medical Academy of Postgraduate Education.

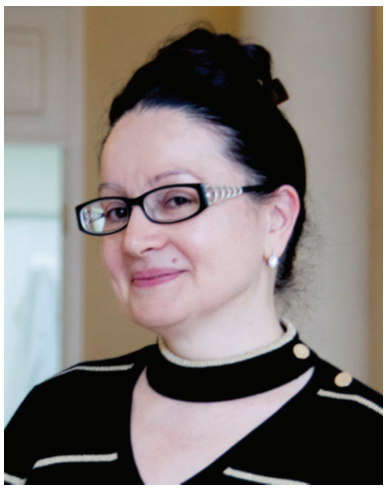
Prof. Mitkov is the co-founder and the President of the Russian Association of Specialists in Ultrasound Diagnostics in Medicine and the founder of the first Department of Ultrasound Diagnostics (1992) in Russia. He also holds a variety of other key appointments, being the Vice-Chief Radiologist (Ultrasound) of the Ministry of Health of Russian Federation and a member of the Education & Professional Standards Committee of the European Federation of Societies of Ultrasound in Medicine and Biology.

Professor Mitkov is the editor and author of 22 books and has published over 370 scientific articles, book chapters and congress abstracts. He is an editorial board member of the *Russian Electronic Journal of Radiology* and the Editor-in-Chief of the *Journal of Ultrasound and Functional Diagnostics*. Under his supervision have been defended 33 doctoral and 9 habilitated doctoral dissertations. In the Department of Diagnostic Ultrasound of the Russian Medical Academy of Continuous Postgraduate Education, he annually trains over 1200 doctors from Russia, Belarus, Kazakhstan, Uzbekistan, Armenia, Moldova and other countries.

Presentations at the congress

- Ultrasound elastography – trends and current state
- New developments in ultrasound technology

Mina D. Mitkova, MD, PhD
Associate Professor of Radiology
Russian Medical Academy of Postgraduate Education
Moscow, Russia



Dr. Mitkova graduated from the North Ossetian State Medical Institute in Ordzhonikidze, Russia. Subsequently she pursued her specialty training in Radiology at the Central Institute for Physicians' Post-graduate Training in Moscow, Russia and her doctorate at the Russian Medical Academy of Postgraduate Education in Moscow, Russia. After defending her PhD thesis, Dr. Mitkova worked as an Assistant Professor of Radiology at the Russian Medical Academy of Postgraduate Education, then as an Associate Professor of Radiology within the same institution.

Her scientific work is reflected in one book, 11 book chapters and over 100 articles published in peer-reviewed specialty journals. Dr. Mitkova is also an invited speaker at numerous scientific meetings across the world, being a member of many national and international professional societies, including the Russian Association of Specialists in Ultrasound Diagnostics in Medicine, the European Federation of Societies of Ultrasound in Medicine and Biology, the European Association of Urology and an Executive committee member of the Russian Association of Specialists in Ultrasound Diagnostics in Medicine. Given her extensive expertise in Ultrasound Imaging, Dr. Mitkova was appointed the Deputy Editor-in-Chief of the *Journal of Ultrasound and Functional Diagnostics*.

Presentations at the congress

- Ultrasound elastography in the diagnosis of prostate cancer
- Ultrasound elastography in the diagnosis of testicular pathology

Stanislav Groppa, MD, PhD

Chairman and Professor of Neurology
Academician of the Academy of Sciences of Moldova
Director, Neurology & Neurosurgery
Institute of Emergency Medicine
Head, Neurobiology and Medical Genetics Laboratory
Chisinau, the Republic of Moldova

Professor Groppa graduated from the Nicolae Testemitsanu State University of Medicine and Pharmacy in 1979. Apart from his training in Moldova, Prof. Groppa acquired a vast international experience at the leading medical institutions in Russia, USA, Germany, China, Australia, Italy and other countries. At the age of 29 years he obtained his PhD degree in Neurology, at the age of 35 years – Habilitated Doctor of Medicine degree and at the age of 39 years – the title of University Professor.

Due to his vast international experience, Prof. Groppa established a variety of fruitful collaborations with an impressive number of researches and scientific institutions around the world. Under his supervision have been defended 18 doctoral and habilitated doctoral dissertations. His research interests cover a wide range of topics with a special emphasis on stroke prevention and its early management, pain management and epilepsy.

Since 2007, Prof. Groppa is a member of the Academy of Sciences of Moldova, being also elected the academician-coordinator of the Medical Department of the Academy of Sciences. During 2015-2016, Prof. Groppa functioned as the Vice-President of the Academy of Sciences of Moldova. He is also an Honorary Member of the Academy of Medical Sciences of Romania, an Editorial Board member of a large number of scientific journals and a member of many international organizations such as International League Against Epilepsy (ILAE), World Stroke Organization (WSO), Romanian National Stroke Association (RNSA), American Neurology and Stroke Association, European Academy of Epileptology, European Academy of Neurology.

Currently Prof. Groppa is the Head of the Neurobiology and Medical Genetics Laboratory and the Chairman of the Neurology Department at the State University of Medicine of Pharmacy as well as the Director of the Neurology & Neurosurgery Department at the Institute of Emergency Medicine. He is also the President of the Moldovan League against Epilepsy, President of the Moldovan Stroke Association and Vice-President of the Moldovan Neurology Society.

Presentation at the congress

- Neuroimaging session overview

Olav Jansen, MD, PhD

Professor and Chairman of Radiology and Neuroradiology
Director, Clinic for Radiology and Neuroradiology
University of Kiel, Kiel, Germany

Professor Jansen studied medicine in Goettingen and Luebeck, Germany, where he also completed his specialty training in Radiology and Neuroradiology. Subsequently he activated as a staff member and leading attending lecturer at the department of Neuroradiology in Heidelberg, where he completed his doctoral dissertation on MRI investigation in brain edema, then as a Professor and Chairman of Neuroradiology at the University of Kiel.

Professor Jansen's main research interests are related to diagnosis and therapy of cerebrovascular diseases, endovascular therapy of stroke, functional MRI and Interventional Neuroradiology. His work is reflected in over 140 publications in peer-reviewed journals and fundamental specialty textbooks such as "*MR Neuroimaging: Brain, Spine, and Peripheral Nerves*", "*MRI: Basics and Clinical Applications*", "*Interventional Stroke Therapy*". Prof. Jansen brought a significant contribution towards the development of Neuroradiology at both national and European levels, acting also as a Board member of the German Radiological Society (DRG), President of the German Society of Neuroradiology, Executive Committee member and Head of the Interventional Radiology subcommittee of the European Society of Neuroradiology (ESNR).

Presentation at the congress

- Technical developments and clinical results for neurothrombectomy in acute ischemic stroke

Frank Boudghene, MD, PhD
Professeur à Sorbonne-Universités
Département de Radiologie, CHU Tenon – HUEP
Université Paris-Sorbonne, Paris, France

Le professeur Frank Boudghene est Référent en radiologie viscérale abdomino-pelvienne et vasculaire interventionnelle à l'hôpital Tenon depuis 1986 (2 premières médicales a l'APHP en 1991 et 1998). Durant cette période, il a formé de nombreux spécialistes hautement qualifiés, créant et dirigeant également un consortium de laboratoires autour du programme Mateo en réponse à un appel national en technologies de la santé. Le professeur Frank Boudghene a mené un nombre impressionnant de projets de recherche appliquée dans les dispositifs médicaux ainsi que des études cliniques sur l'imagerie par résonance magnétique, la tomodensitométrie, l'imagerie oncologique etc. Il est titulaire de 2 brevets internationaux et co-directeur UE M1 d'imagerie biomédicale de l'UPMC depuis 1999 (180 mémoires).

Le professeur Frank Boudghene est l'auteur de plus de 100 publications indexées dans la base de données SIGAPS (Système d'Interrogation, de Gestion et d'Analyse des Publications Scientifiques) et de 3 ouvrages de spécialité, dont les éditions Springer dédiées à l'IRM pelvienne et à l'échographie. Il est Coordonnateur de la Fédération d'Imagerie du Cancer FIC-SFR depuis 2011 et coordinateur scientifique de nombreux congrès nationaux et internationaux. Au cours de sa carrière, le professeur Frank Boudghene a assumé diverses responsabilités administratives et de gestion, y compris Rédacteur adjoint du *Journal de Radiologie et Imagerie Médicale*, Secrétaire général de la Société d'Imagerie Abdominale et Digestive (SIAD), Membre du bureau du Collège des Enseignants de Radiologie (CERF), Président du Groupe des Radiologues Enseignants de langue Française (GREF), Expert APHP pour les appels d'offres Scanners, Coordonnateur pour la Radiologie Interventionnelle du SROS Ile de France, Trésorier du Syndicat des Radiologues Hospitaliers (SRH), Président du Conseil de Surveillance du PERP aPERF, etc.

Le Professeur Frank Boudghene est actuellement Membre du bureau de la Société Française de Radiologie, Membre du Conseil professionnel de la Radiologie (G4) et Président du Syndicat des Radiologues Hospitaliers (SRH).

Présentations au congrès

- Thérapeutiques loco régionales des Carcinomes Hepato cellulaires
- Imagerie nouvelle du cancer du colon: à l'eau et à l'air

Frank Boudghene, MD, PhD
Chairman and Professor of Radiology
Department of Radiology, CHU Tenon – HUEP
Paris-Sorbonne University, Paris, France

Prof. Frank Boudghene is a Referent in abdominal and interventional radiology at Tenon Hospital since 1986. During this period he trained many highly qualified specialists, creating and directing also a consortium of laboratories in the Mateo program in response to a national call in Health Technologies. Prof. Frank Boudghene conducted an impressive number of applied research projects in medical devices as well as clinical studies on magnetic resonance imaging, computed tomography, oncology imaging etc. He is the holder of 2 international patents and the Co-Director of M1 Biomedical Imaging at the Paris-Sorbonne University.

Prof. Frank Boudghene is the author of over 100 publications indexed in SIGAPS *(Système d'Interrogation, de Gestion et d'Analyse des Publications Scientifiques)* database and 3 specialty textbooks, including Springer editions on dedicated pelvic MRI and ultrasound imaging. He is the Coordinator of the FIC-SFR Cancer Imaging Federation since 2011, and the Scientific Coordinator of many national and international congresses. During his career, Prof. Frank Boudghene fulfilled a variety of administrative and managerial responsibilities, including the Associate Editor of the *Journal of Radiology and Imaging*, General Secretary of the Digestive and Digestive Imaging Society, Member of the Office of the College of Radiology Teachers, President of the French Language Radiologists' Teachers, Treasurer of the Union of Hospital Radiologists, Chairman of the PERP Supervisory Board, etc.

Currently Prof. Boudghene is also a Member of the Office of the French Society of Radiology (SFR), a Member of the Professional Council of Radiology (G4) and the President of the Union of Hospital Radiologists (SRH).

Presentations at the congress

- Loco-regional therapies for hepatocellular carcinoma (HCC)
- New imaging of colon cancer: with water and air

Bruno Kastler, MD, PhD, Dhc

Professeur de Radiologie, Université de Paris Descartes
Chef du traitement de la douleur interventionnelle
Département de radiologie Hôpital universitaire Necker et
Hôpital Européen Georges Pompidou
Paris, France

Prof. Kastler a étudié la médecine et la science en parallèle à l'Université d'Aix Marseille en France (1974-1981), obtenant un baccalauréat en mathématique et en physique (1975-76), MS en physique en 1978 et MD en 1981. Après avoir obtenu son diplôme, il a passé trois ans à l'hôpital universitaire de Minneapolis, au Minnesota, en tant que résident en cardiologie et en médecine interne et boursier postdoctoral. Il poursuit sa formation en Sciences et Résidences à Strasbourg à l'Université Louis Pasteur et à l'Hôpital Universitaire Hospices Civils en obtenant sa certification en cardiologie en 1987, en radiologie en 1988, en HDR en 1991 et en doctorat en 1994.

Il a réussi l'examen du personnel hospitalier de la Radiologie Nationale et de l'Imagerie Médicale (1991) en se classant premier au concours, après quoi il a été radiologue à l'Université Louis Pasteur (1992-94). Il a été nommé professeur agrégé de radiologie à l'Université de Sherbrooke (1992), professeur titulaire de radiologie à l'Université de Franche-Comté de Besançon, chef de radiologie à l'Université de Franche-Comté de Besançon (1994-2016), et président du programme de résidence en radiologie (2006-2016). Le Prof. Kastler a fondé et servi comme Président d'un Laboratoire de recherche à l'Université de Franche-Comté – le Laboratoire d'Intervention Sanitaire, Innovation, Imagerie, Ingénierie (I4S) EA 4268, IFR133 INSERM (1997-2016). Il a également inauguré et a été directeur d'un programme de master M2R3i: "Instrumentation, informatique et image" (1994-2016 – Université de Franche-Comté et Université de Bourgogne).

Prof. Kastler a énormément contribué au développement du service de Radiologie aux niveaux régional et international, en tant que Secrétaire Général (2005) et Président (2006-2014) du GREF (Groupe des Enseignants Académiques des Radiologues de langue française), Président de la Société Française de Radiologie Franche-Comté (2002-2016). Il est membre honoraire de la Société Allemande de Radiologie (2016), Société Bulgare de Radiologie (1998), Société Hongroise de Neuroradiologie (1997), Docteur Honoris Causa de l'Université de Sofia (2007), finaliste lauréat du National Medical Award Paris 2006: (Lauréat Victoires de la médecine 2006): "Innovations technologiques": la cimentoplastie combinée à la radiofréquence dans le traitement des métastases osseuses. Pour ses réalisations, Prof Kastler a été deux fois lauréat du Prix d'excellence universitaire en recherche (PEDR Prime d'Excellence et de Recherche – 2009-13 & 2014-19).

Le professeur Kastler est l'auteur de plus de 120 publications scientifiques référencées dans PubMed Central et de plus de 100 communications présentées lors des réunions de la Radiological Society of North America (RSNA). Ses travaux couvrent le domaine de la RM cardiovasculaire, du traitement de la douleur interventionnelle et de la physique IRM. Il est le premier auteur de Understanding MRI (8 éditions françaises en 1994-2018, traduites en 5 langues, dont la version chinoise, 2013), l'IRM des anomalies cardiovasculaires (French 2001, English Springer, 2010) et la radiologie interventionnelle dans le traitement des Pain (2 éditions françaises de 2004 à 2006, version anglaise Springer 2008). Il a également écrit un nombre impressionnant d'autres livres et chapitres de livres en anglais, allemand et français (49 livres sur l'IRM, la cardiologie et la radiologie interventionnelle).

Actuellement, Bruno Kastler est Professeur de Radiologie à l'Université Paris Descartes et Chef du Département de Radiologie Interventionnelle de Traitement de la Douleur à l'Hôpital Universitaire Necker et à l'Hôpital Européen Georges Pompidou, où il a inauguré une "école" de traitement de la douleur maligne et bénigne.

Présentations au congrès

- "Tumeurs osseuses – Comment traiter de manière interventionnelle"? Tumeurs malignes (infiltration, ablation thermique, cimentoplastie)
- Traitement de la douleur interventionnelle autre que la colonne vertébrale (maux de tête, douleurs abdominales et pelviennes)
- Comprendre l'IRM: le savoir-faire de base

Bruno Kastler, MD, PhD, Dhc
Professor of Radiology, Paris Descartes University
Head of Interventional Pain Treatment
Radiology Department, Necker University Hospital & HEGP
(European Hospital Georges Pompidou)
Paris, France

Prof. Kastler studied medicine and science in parallel at the University of Aix Marseille in France (1974-1981), obtaining a Bachelor degree in mathematics and physics (1975-76), MS in Physics in 1978 and MD in 1981. After obtaining his ECFMG certification, he spent three years at the University Hospital in Minneapolis, Minnesota as a Cardiology and Internal medecine Resident and Post-doctoral Fellow. He continued his Science and Residency training in Strasbourg at the University Louis Pasteur and Hospices Civils University Hospital obtaining his board certification in Cardiology in 1987, certification in Radiology in 1988, HDR in 1991 and PhD in 1994.

He passed the French National Radiology and Medical Imaging hospital staff exam (1991) being ranked first in the contest, after which worked as staff radiologist at the University Louis Pasteur (1992-94). He was appointed as an Associate Professor of Radiology at the Sherbrooke University (1992), as a full Professor of Radiology at the University de Franche-Comté University in Besançon, Head of Radiology at the University de Franche-Comté University Hospital Besancon (1994-2016), and the Chairman of the Radiology Residency Program (2006–2016). Prof. Kastler has founded and served as a Chairman of a research laboratory at the University de Franche-Comté the Health Intervention, Innovation, Imaging, Engineering (I4S) laboratory EA 4268, IFR133 INSERM (1997-2016). He also started and was Director of a Master program M2R3i: "Instrumentation, computer science and image" (1994-2016 – University of Franche-Comte & University of Bourgogne).

Prof. Kastler made a tremendous contribution towards the development of Radiology service at both regional and international levels, serving as the General Secretary (2005) and President (2006-2014) of the GREF (Group of Academic Teachers of the French speaking Radiologists and as the President of the French Society of Radiology Franche-Comté (2002-2016). He is an Honorary Member of the German Society of Radiology (2016), Bulgarian Society of Radiology (1998), Hungarian Society of Neuroradiology (1997), Doctor Honoris Causa of Sofia University (2007), Final winner of the National French Medical Award Paris 2006: (Lauréat Victoires de la medicine 2006): "technological innovations": cementoplasty combined with radiofrequency in the treatment of bone metastases ". For his achievements, Prof. Kastler was twice the recipient of the University Award of Excellence in Research (PEDR Prime d'Exellence et de Recherche – 2009-13 & 2014-19).

Prof. Kastler authored over 120 scientific publications referenced in PubMed central and over 100 communications presented at the Radiological Society of North America (RSNA) meetings. His work covers the field of cardio-vascular MR, Interventionnal Pain treatment and MRI physics. He is the first author of Understanding MRI (8 French editions in 1994-2018, translated into 5 languages, including the Chinese version, 2013), MRI of cardiovascular anomalies (French 2001, English Springer, 2010) and Interventional Radiology in the Treatment of Pain (2 French editions in 2004 to 2006, English version Springer 2008). He also authored an impressive number of other books and book chapters in English, German and French (49 books on MRI, Cardiology and Interventional Radiology).

Currently Prof. Kastler is a Professor of Radiology at Paris Descartes University and Head of Interventional Pain Treatment Radiology Department at the Necker University Hospital and European Hospital Georges Pompidou, where he started a "school" in *Interventionnal malignant and benign pain treatment*.

Presentations at the congress

- "Bone Tumours – How to treat interventionally"? Malignant tumors (infiltration, heat ablation, cementoplasty)
- Interventional pain treatment other than spine (headache, abdomen and pelvic pain)
- Understanding MRI: the basic know-how

Virginia Gaxotte, MD

Université de Paris Descartes, CHU Necker et HEGP
Département de Radiologie, Hôpital Centre Sud Francilien
Département de Radiologie, Hôpital Foch
Paris, France

Dr Virginia Gaxotte a étudié la médecine à l'Université de Nice en France et a complété sa résidence en radiologie à l'Université de Lille ainsi qu'une formation spécialisée en imagerie cardiovasculaire à l'Hôpital Universitaire de Lille.

Les intérêts de recherche du Dr Gaxotte couvrent un large éventail de sujets, en particulier l'imagerie cardiovasculaire et oncologique. Grâce à ses intérêts dans l'imagerie cardiovasculaire, elle a poursuivi une bourse de recherche à l'Arizona Heart Hospital à Phoenix, Arizona, États-Unis.

La recherche du Dr Gaxotte se reflète dans plus de 45 présentations lors de conférences scientifiques nationales et internationales et plus de 35 articles publiés dans des revues médicales spécialisées. Pour ses résultats exceptionnels, le Dr Gaxotte a reçu plusieurs prix, notamment le premier prix du concours de vidéos sur les procédures endovasculaires.

Actuellement, le Dr Gaxotte poursuit son activité professionnelle dans les secteurs de la santé publique et privée au Centre Hospitalier Sud Francilien et à l'Hôpital Foch à Paris, France. Elle est membre de la Société Française de Radiologie et de la Société d'Imagerie Cardiovasculaire, ayant des intérêts particuliers dans l'imagerie pathologique cardiovasculaire et oncologique, la tomodensitométrie et l'imagerie par résonance magnétique.

Présentation au congrès

- Comment réussir un scanner cardiaque et coronarien (SCC)?

Virginia Gaxotte, MD

University of Paris Descartes, Necker University Hospital & HEGP
(European Hospital Georges Pompidou)
Department of Radiology, Hospital Center Sud Francilien
Department of Radiology, Foch Hospital
Paris, France

Dr. Virginia Gaxotte studied Medicine at the University of Nice in France and completed her residency training in Radiology at the University of Lille as well as a specialty fellowship training in cardiovascular imaging at the University Hospital of Lille.

Dr. Gaxotte's research interests cover a wide range of topics with a special emphasis on cardiovascular and oncological imaging. Following her interests in cardiovascular imaging, she pursued a research fellowship at the Arizona Heart Hospital in Phoenix, Arizona, USA.

Dr. Gaxotte's research is reflected in over 45 presentations at national and international scientific conferences and over 35 articles published in peer-reviewed medical journals. For her outstanding results, Dr. Gaxotte received a number of awards, including the first prize of the *Endovascular procedures video contest*.

Currently Dr. Gaxotte pursues her professional activity in both public and private health sectors at the Sud Francilien Hospital Center and at the Foch Hospital in Paris, France. She is a Member of the French Radiology Society and Cardiovascular Imaging Society, having special interests in cardiovascular and oncological pathology imaging, computed tomography and magnetic resonance imaging.

Presentation at the congress

- How to perform a cardiac computed tomography (CT) and a coronary CT angiography?

Sukru Mehmet Erturk, MD
Président et Professeur de Radiologie
Département de radiologie
École de Médecine de l'Université Adiyaman
Adiyaman, Turquie

Dr. Erturk est le président de la société turque de l'imagerie par résonance magnétique. Il a étudié la médecine à l'école de médecine Cerrahpasa, à l'université d'Istanbul, et a ensuite terminé un programme de certificat d'un an en gestion hospitalière à l'Institute of Business Administration de la même université. Mehmet a commencé sa formation spécialisée en radiologie à l'hôpital de formation et de recherche Sisli Hamidiye Etfal en 1998. En 2001, il a été observateur au département de radiologie du Klinikum Grosshadern de l'Université Ludwig Maximillian de Munich.

Après avoir achevé sa formation et son travail de radiologue à l'hôpital de formation et de recherche Sisli Hamidiye Etfal, Mehmet a déménagé à Boston et a terminé ses études de gestion en radiologie et en radiologie abdominale entre 2004 et 2006 au Brigham and Women's Hospital et à Harvard. Faculté de médecine, où il était également un conférencier en radiologie. En 2007, il a été élu président du chapitre d'Istanbul de la Société turque de radiologie et en 2009 il est devenu le secrétaire général de la même société, dont il est toujours membre du conseil d'administration.

Les domaines de recherche de Mehmet comprennent des sujets tels que l'imagerie abdominale, la gestion de l'utilisation en radiologie et services de santé, la gestion de la qualité en radiologie et services de santé, l'éducation médicale, l'économie de la santé et l'informatique de la santé. Il est l'auteur de plus de 15 chapitres de livres et de plus de 100 articles publiés dans des revues scientifiques. Étant donné son intérêt particulier pour l'imagerie hépatique et pancréatique, il est également l'auteur d'un atlas d'enseignement de l'imagerie hépatobiliaire et pancréatique. En plus d'être un écrivain prolifique, M. Erturk occupe des postes de rédacteur et de réviseur dans diverses revues. Actuellement, il est professeur de radiologie et président du département de radiologie à l'université Adiyaman, en Turquie.

Présentation au congrès

- Les défis de l'imagerie hépatique et pancréatique

Sukru Mehmet Erturk, MD
Chairman and Professor of Radiology
Department of Radiology
Adiyaman University School of Medicine
Adiyaman, Turkey

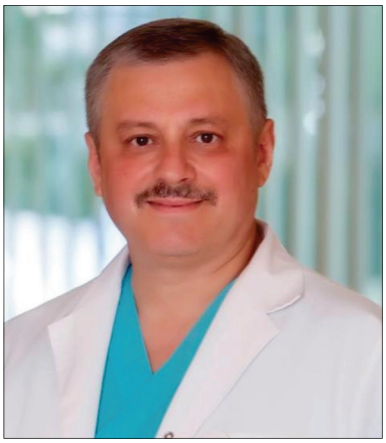
Dr. Erturk is the president of the Turkish Society of Magnetic Resonance Imaging. He studied medicine at Cerrahpasa School of Medicine, Istanbul University, and then completed a one-year certificate program in hospital management at the Institute of Business Administration of the same university. Mehmet started his specialty training in radiology at the Sisli Hamidiye Etfal Training and Research Hospital in 1998. In 2001, he was an observer at the Radiology Department of the Klinikum Grosshadern of Ludwig Maximillian University of Munich.

Upon completing his training and his work as an attending radiologist at Sisli Hamidiye Etfal Training and Research Hospital, Mehmet moved to Boston and completed his fellowships in management in radiology and in abdominal radiology research between 2004 and 2006 at the Brigham and Women's Hospital and the Harvard Medical School, where he was also a lecturer in radiology. In 2007, he was elected the president of the Istanbul Chapter of the Turkish Society of Radiology and in 2009 he became the Secretary General of the same society, of which he is still an executive board member.

Mehmet's areas of research interests include topics such as abdominal imaging, utilization management in radiology and health services, quality management in radiology and health services, medical education, health economics, and health informatics. He authored over 15 book chapters and over 100 articles published in scientific journals. Given his special interest in hepatic and pancreatic imaging, he also authored a teaching atlas of hepatobiliary and pancreatic imaging. Apart from being a prolific writer, Dr. Erturk holds editorial and reviewer positions in various journals. Currently, he is Professor of Radiology and Chairman of Radiology Department at Adiyaman University, Turkey.

Presentation at the congress

- Challenges in hepatic and pancreatic imaging



Aureliu Batrinac, MD, PhD

Professeur Associé de Chirurgie Cardiovasculaire
Directeur Médical, Hôpital International Medpark
Chisinau, République de Moldavie

Dr. Batrinac est diplômé de l'Université d'État de Médecine et Pharmacie "Nicolae Testemitsanu" en 1989, où il a également complété sa formation spécialisée en chirurgie cardiovasculaire. En plus de sa formation en Moldavie, le Dr Batrinac a acquis une expérience internationale enrichissante dans les principaux centres de chirurgie cardiovasculaire de Moscou en Russie (bourse de spécialisation de trois ans (1991-1994) au Centre de Recherche Chirurgicale de l'Académie des Sciences Médicales de Moscou, où il a ensuite accepté un poste de chirurgien cardio-vasculaire), Hanovre, Allemagne (1997-1998, 1999), Zagreb, Croatie (2000), Braunschweig, Allemagne (2002), Novara, Italie (2010), Genève, Suisse (2011), Barcelone, Espagne (2014).

Outre son travail clinique (plus de 2 000 interventions chirurgicales sur le cœur et les gros vaisseaux), le Dr Batrinac poursuit activement divers projets de recherche. Sa thèse de doctorat est liée à la greffe de pontage de l'artère coronaire utilisant l'artère mammaire interne et son travail de recherche est reflété dans plus de 120 publications.

Le Dr. Batrinac a apporté une contribution significative au développement de la chirurgie cardiovasculaire en Moldavie, occupant également diverses fonctions administratives et de gestion telles que Vice-Directeur du Centre de Chirurgie Cardiaque, Vice-Directeur de l'Institut de Cardiologie, Président du Département de Chirurgie Cardiovasculaire à l'Hôpital Républicain Clinique, Président du Département de Chirurgie Cardiovasculaire et Directeur Médical à l'Hôpital International Medpark.

Pour sa performance exceptionnelle, le Dr. Batrinac a reçu de nombreux prix, dont la médaille «*Nicolae Milescu Spataru*» décernée par l'Académie des Sciences de Moldavie et la *Gloire du Travail* décernée par le Président de la République de Moldova.

Présentation au congrès

- Imagerie en pathologie aortique: la vision du chirurgien cardio-vasculaire

Aureliu Batrinac, MD, PhD

Associate Professor of Cardiovascular Surgery
Medical Director, Medpark International Hospital
Chisinau, the Republic of Moldova

Dr. Batrinac graduated from the Nicolae Testemitsanu State University of Medicine and Pharmacy in 1989, where he also completed his specialty training in Cardiovascular Surgery. Apart from his training in Moldova, Dr. Batrinac acquired an enriching international experience at the leading centers of cardiovascular surgery in Moscow, Russia (3-year specialty fellowship (1991-1994) at the Surgical Research Center of the Academy of Medical Sciences in Moscow, where he subsequently accepted a position of a cardiovascular surgeon), Hannover, Germany (1997-1998, 1999), Zagreb, Croatia (2000), Braunschweig, Germany (2002), Novara, Italy (2010), Geneva, Switzerland (2011), Barcelona, Spain (2014).

Apart from his clinical work (over 2000 surgical interventions on the heart and big vessels), Dr. Batrinac is actively pursuing a variety of research projects. His doctoral dissertation is related to coronary artery by-pass grafting using internal mammary artery and his research work is reflected in over 120 publications.

Dr. Batrinac has made significant contributions to the development of Cardiovascular Surgery in Moldova, functioning also in a variety of managerial and administrative positions such as Vice-Director of the Center of Heart Surgery, Vice-Director of the Institute of Cardiology, Chair of the Department of Cardiovascular Surgery at the Republican Clinical Hospital, Chair of the Department of Cardiovascular Surgery and Medical Director at the Medpark International Hospital.

For his outstanding performance, Dr. Batrinac received many awards, including the Medal *"Nicolae Milescu Spataru"* awarded by the Academy of Sciences of Moldova and *The Glory of Labor Order* awarded by the President of the Republic of Moldova.

Presentation at the congress:

- Imaging in aortic pathology: the vision of cardiovascular surgeon

Florin Birsasteanu, MD, PhD
Président et Professeur de Radiologie
Université de médecine et de pharmacie Victor Babes
Président de la Société roumaine de radiologie et d'imagerie médicale
Timisoara, Roumanie

Le Professeur Birsasteanu a étudié la médecine à l'Université de Médecine et de Pharmacie Victor Babes à Timisoara, en Roumanie, où il a suivi la faculté de médecine générale, sa formation spécialisée en radiologie et son doctorat. Par la suite, le Dr Birsasteanu a été professeur adjoint et professeur agrégé de radiologie au sein de la même université. En plus de sa formation en Roumanie, le Prof. Birsasteanu a acquis une vaste expérience internationale, sa formation postdoctorale incluant des formations de spécialité en France, en Autriche, en Hongrie, République Tchèque, États-Unis, Allemagne, Pays-Bas etc. Détenteur de diplômes officiels en gestion des services de santé et en administration publique locale, le Dr Birsasteanu a été nommé à des postes de direction clés, notamment en tant que directeur du Timisoara County Emergency Clinical Hospital, le plus grand centre de santé de Roumanie ou il a également servi comme un spécialiste de l'IRM et a fondé un département d'IRM. Étant un radiologue dévoué et un gestionnaire compétent, le Dr Birsasteanu est le fondateur et le président / gestionnaire de nombreuses installations de diagnostic, y compris le Centre d'imagerie TELESCAN et le Centre d'imagerie CRB DR BIRSASTEANU. En raison de l'impact sur le service de santé du comté, Dr. Birsasteanu a été invité à être membre du Conseil municipal de Timisoara (2004-2008, 2012-2014).

En plus de son dévouement à l'amélioration du service de radiologie et des installations de diagnostic dans le comté, le Dr Birsasteanu s'est assumé de nombreuses responsabilités au niveau national et international en tant que président de la Société roumaine de radiologie et d'imagerie médicale, vice-président de la Société Roumaine de Résonance Magnétique, membre de la Commission Nationale de Spécialité du Ministère de la Santé, Membre fondateur de la Société Roumaine de Neurologie Chirurgicale, fondateur et Président de la Société Roumaine d'Imagerie Musculo-Squelettique, membre du Comité Scientifique de la section Musculo-Squelettique de la Société européenne de radiologie (ESR), membre du Comité exécutif de la Société balkanique de radiologie (BSR) etc. Son travail se reflète dans plus de 100 publications scientifiques. En raison de son impact sur la gestion de la santé et les services communautaires dans les pays, le professeur Birsasteanu a été élu député au Parlement de la Roumanie en 2014.

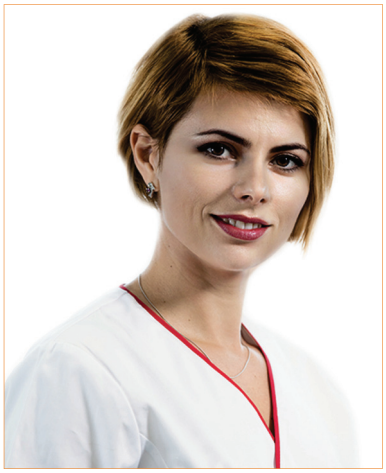
Florin Birsasteanu, MD, PhD
Chairman and Professor of Radiology
Victor Babeș University of Medicine and Pharmacy
President, Romanian Society of Radiology and Medical Imaging
Timisoara, Romania

Prof. Birsasteanu studied medicine at the Victor Babes University of Medicine and Pharmacy in Timisoara, Romania where he completed the General Medicine faculty, his specialty training in Radiology and his doctorate. Subsequently Dr. Birsasteanu worked as an Assistant Professor and an Associate Professor of Radiology within the same university. Apart from his training in Romania, Prof. Birsasteanu acquired a vast international experience, his postgraduate education including specialty and fellowship training in France, Austria, Hungary, Czech Republic, USA, Germany, the Netherlands, etc.

Holding also formal degrees in Health Services Management and Local Public Administration, Dr. Birsasteanu was appointed in key managerial positions, including the Manager of the Timisoara County Emergency Clinical Hospital, the biggest health care facility in the western part of Romania, where he also was a leading MRI specialist and has found an MRI department. Being a devoted radiologist and a proficient manager, Dr. Birsasteanu is the founder and manager of many diagnostic facilities, including the TELESCAN Imaging Center and CRB DR BIRSASTEANU Imaging Center. Due to the impact made on the county health care service, Dr. Birsasteanu was invited to be a member of the Timisoara City Council (2004-2008; 2012-2014).

Apart from his dedication to improving the radiology service and diagnostic facilities in the county, Dr. Birsasteanu carried out a broad range of responsibilities at both national and international level, beeing the President of the Romanian Society of Radiology and Medical Imaging, Vice President of the Romanian Society for Magnetic Resonance, member of the National Specialty Commission of the Ministry of Health, Founding member of the Romanian Society for Surgical Neurology, Founder and President of the Romanian Society for Musculoskeletal Imaging, member of the Scientific Committee of the Musculoskeletal section of the European Society of Radiology (ESR), member of the Executive Committee of the Balkan Society of Radiology (BSR), etc. His work is reflected in over 100 scientific publications.

As a result of his impact on health management and country's community services, in 2014 Prof. Birsasteanu was elected a Deputy in the Parliament of Romania.



Ioana Andreea Gheonea, MD, PhD, MSc
Professeur de Radiologie
Université de Médecine et de Pharmacie de Craiova
Craiova, Roumanie

Dr. Gheonea a étudié la médecine à l'Université de Médecine et de Pharmacie de Craiova en Roumanie où elle a complété sa thèse de médecine, sa thèse de maîtrise en gestion des établissements de santé et sa thèse intitulée *Le rôle de l'élastographie ultrasonore dans le diagnostic des lésions mammaires focales*. Après avoir poursuivi sa formation spécialisée en radiologie et en imagerie médicale, elle a été professeure adjointe et professeure agrégée de radiologie au sein de la même université, où elle a été certifiée en radiologie et en médecine nucléaire. Après avoir soutenu sa thèse d'habilitation intitulée *Recherche avancée en pathologie maligne du système digestif basée sur des techniques d'imagerie*, le Dr Gheonea a été nommée professeur titulaire de radiologie à l'Université de médecine et de pharmacie de Craiova.

En plus de sa formation en Roumanie, Dr. Gheonea a acquis une vaste expérience internationale, ses études postdoctorales incluant des bourses de spécialisation et des échanges professionnels à Maastricht (Pays-Bas), Cracovie (Pologne), Madrid (Espagne), Paris (France), Vienne (Autriche), Orlando (Floride, États-Unis) etc.

Les activités de recherche du Dr Gheonea comprennent une variété de projets de recherche en collaboration, où elle est membre du projet ou directrice de projet. Elle est l'auteure de trois livres, de plus de 50 publications dans des revues à comité de lecture et de plus de 60 résumés présentés lors de rencontres scientifiques nationales et internationales. Elle est également titulaire d'un brevet OSIM pour l'invention d'un système haptique pour la palpation virtuelle des tumeurs du foie et du pancréas avec reconstruction tridimensionnelle calculée (BOPI, n ° 4/2017, Université de Médecine et Pharmacie Craiova).

Pour ses réalisations, Dr. Gheonea a reçu de nombreux prix, dont le Grand Prix de Radiologie de la Société Française pour la meilleure présentation orale au Sectional Imaging Group Réunion (2007), Top Poster Prize 19ème Semaine Européenne de Gastroentérologie Unie (Stockholm, Suède, 2011), le Prix de la Société Roumaine de Radiologie et d'Imagerie Médicale (Roumanie, 2013 et 2017), Prix de la Société Roumaine d'Ultrasonographie en Obstétrique et Gynécologie (Roumanie, 2017), 27ème Prix du Congrès Mondial d'Ultrason en Obstétrique et Gynécologie (Vienne, Autriche, 2017) et plusieurs autres.

Ioana Andreea Gheonea, MD, PhD, MSc
Professor of Radiology
University of Medicine and Pharmacy of Craiova
Craiova, Romania

Dr. Gheonea studied medicine at the University of Medicine and Pharmacy of Craiova in Craiova, Romania where she completed the General Medicine faculty, her MSc thesis in Management of Health Facilities and her PhD thesis entitled *The role of ultrasound elastography in diagnosing focal breast lesions*. After pursuing her specialty training in Radiology and Medical Imaging, she worked as an Assistant Professor and an Associate Professor of Radiology within the same university, being board certified in both Radiology and Nuclear Medicine. After defending her Habilitation thesis entitled *Advanced research in malignant pathology of digestive system based on imaging techniques*, Dr. Gheonea was assigned a full Professor of Radiology at the University of Medicine and Pharmacy of Craiova.

Apart from her training in Romania, Dr. Gheonea acquired a vast international experience, her postgraduate education including specialty scholarships and professional exchange training in Maastricht (Netherlands), Krakow (Poland), Madrid (Spain), Paris (France), Vienna (Austria), Orlando (Florida, USA), etc.

Dr. Gheonea's research activities include a variety of joint research projects, where she acts as a project member or Project Director. She authored 3 books, over 50 publications in peer-reviewed journals and over 60 abstracts presented at the national and international scientific meetings. She is also the holder of an *OSIM Patent* for invention of a haptic system for virtual palpation of liver and pancreatic tumors with tridimensional computed reconstruction (BOPI, no 4/2017, University of Medicine and Pharmacy Craiova).

For her achievements, Dr. Gheonea received a variety of awards, which include the Grand prize of Radiology French Society for the best oral presentation at Sectional Imaging Group Reunion (2007), Top Poster Prize 19th United European Gastroenterology Week (Stockholm, Sweden, 2011), the Romanian Radiology and Medical Imaging Society prize (Romania, 2013 and 2017), Romanian Society of Ultrasonography in Obstetrics and Gynecology prize (Romania, 2017), the 27th World Congress on Ultrasound in Obstetrics and Gynecology prize for the best short oral presentation (Vienna, Austria, 2017) and several others.

Konstantin Kenigsberg, MD

Spécialiste Principal en IRM, Centre de Cancérologie de Minsk
Professeur Agrégé, l'Université Médicale d'Etat de Biélorussie
Minsk, Biélorussie

Le Dr. Kenigsberg a étudié la médecine à l'Université de Médecine d'État de Biélorussie à Minsk, en Biélorussie, où il a fait ses études à la faculté de médecine générale et sa formation spécialisée en radiologie. Il a suivi une formation de troisième cycle en tomodensitométrie, en imagerie par résonance magnétique et en tomographie par émission de positrons à l'Académie nationale des études supérieures de Biélorussie à Minsk et à l'hôpital universitaire de Würzburg à Würzburg en Allemagne.

Étant donné son intérêt particulier pour l'imagerie par résonance magnétique et ses applications, le Dr Kenigsberg a suivi une formation de pointe aux écoles, séminaires et cours de formation ESOR, ESMRMB et ESHI MRI et PET / CT en Europe. Il a un large éventail d'intérêts professionnels liés à la radiologie cancerologique, à la neuroradiologie, à l'IRM multiparamétrique et à l'imagerie hybride. En dehors de ses activités cliniques et didactiques, le Dr Kenigsberg est activement impliqué dans la recherche médicale, ses projets en cours incluant une étude de doctorat étant liés à des applications d'IRM dans le diagnostic et le suivi des tumeurs cérébrales hypervascularisées.

Au cours des trois dernières années, le Dr Kenigsberg a fait plus de 20 présentations orales sur différents congrès internationaux et conférences dans le domaine de la radiologie cancerologique, de la neuroradiologie, de l'imagerie MSK et de la médecine nucléaire. En tant que spécialiste bien connu des applications d'IRM, le Dr Kenigsberg a réalisé plus de 10 master-classes en Russie, en Ukraine et en Biélorussie sur des systèmes d'IRM à haut champ utilisant une large gamme de machines, parmi lesquelles Siemens, GE, Philips et Toshiba. De nos jours, il est impliqué en tant que spécialiste de l'application dans le domaine des systèmes d'IRM MSK dédiés Esaote.

Actuellement, le Dr Kenigsberg est conférencier à l'Université Médicale d'Etat de Biélorussie et le spécialiste de l'IRM au Minsk Cancer Center à Minsk, en Biélorussie. Dr Kenigsberg est professeur agrégé actif dans la communauté internationale de Radiographie et le centre de radiologie médicale à Moscou, en Fédération de Russie.

Il est également membre élu et leader d'opinion du conseil d'administration de la Société biélorusse de radiologie et délégué national au Forum des stagiaires en radiologie de la Société européenne de radiologie.

Konstantin Kenigsberg, MD

Leading MRI Specialist, Minsk Cancer Center
Attending Lecturer, Belarussian State Medical University
Minsk, Belarus

Dr. Kenigsberg studied medicine at the Belarussian State Medical University in Minsk, Belarus, where he completed both the General Medicine faculty and his specialty training in Radiology. His subsequent postgraduate education includes specialty and fellowship training in computed tomography, magnetic resonance imaging and positron emission tomography at the Belarussian State Academy of Postgraduate Education in Minsk, Belarus and at the University Hospital of Würzburg in Würzburg, Germany.

Having his special interests in magnetic resonance imaging and MRI applications, Dr. Kenigsberg underwent state-of-the art training at ESOR, ESMRMB and ESHI MRI and PET/CT schools, seminars and training courses in Europe. He has a broad range of professional interests related to oncologic radiology, neuroradiology, multiparametric MRI and hybrid imaging. Apart from his clinical and didactic activities, Dr. Kenigsberg is actively involved in medical research, his on-going projects including PhD study being related to MRI applications in diagnosis and follow-up of hypervascular brain tumors.

For the last 3 years Dr. Kenigsberg has made more than 20 oral presentations at different international congresses and conferences in the field of oncologic radiology, neuroradiology, MSK imaging and nuclear medicine.

As a well-known MRI application specialist Dr. Kenigsberg made more than 10 master-classes in application of high-field MRI systems in Russian Federation, Ukraine and Belarus using a wide range machines of most popular vendors including Siemens, GE, Philips and Toshiba. Nowadays he is involved as the application specialist in the field of dedicated MSK MRI systems Esaote.

Currently Dr. Kenigsberg is an Attending Lecturer at the Belarussian State Medical University and the leading MRI specialist at the Minsk Cancer Center in Minsk, Belarus. Dr. Kenigsberg is an active Lecturer in Radiographia international community and Medical Radiology Center in Moscow, Russian Federation.

He is also an elected member and opinion-leader of Authority Board of the Belarussian Society of Radiology and the National Delegate at the Radiology Trainee Forum of the European Society of Radiology.

Liviu Stanisor, MD, PhD
Chef du Département de Médecine Nucléaire
Centre Médical Neolife
Iasi, Roumanie

Le Dr Stanisor est actuellement chef du département de médecine nucléaire à Neolife Iasi, en Roumanie. Il est diplômé en médecine à Iasi, en Roumanie. Après une année de formation en orthopédie, il a entamé un programme de doctorat à l'Université libre d'Amsterdam, aux Pays-Bas, où il a soutenu sa thèse. Au cours de ses sept années de recherche en neurosciences cognitives, le travail du Dr Stanisor a été publié dans de prestigieuses revues internationales à fort facteur d'impact. Il est le premier auteur de «*Automatic spread of attentional response modulation along Gestalt criteria in primary visual cortex*», publié en 2011 dans Nature Neuroscience (facteur d'impact 15.2) et «*A unified selection signal for attention and reward in primary visual cortex*». PNAS en 2013 (facteur d'impact 9,7). Il a soutenu sa thèse intitulée «Codage de la signification et de la récompense de l'objet dans le cortex visuel et frontal» en septembre 2012 à l'Université libre d'Amsterdam.

Après avoir terminé ses projets de recherche, Liviu est retourné dans le domaine clinique et a suivi une période de stage en médecine interne ainsi que des spécialités connexes (cardiologie, pneumologie, oncologie et hématologie). Il a ensuite commencé sa formation spécialisée en médecine nucléaire à Amsterdam, aux Pays-Bas, et l'a terminée à Iasi, en Roumanie. Depuis 2016, il travaille comme spécialiste en médecine nucléaire chez Neolife. Sa formation continue en médecine comprend des bourses d'études en oncologie TEP-CT et en imagerie TEP hybride à Zurich, en Suisse, et une formation en radiochimie pour le PSMA à Munich, en Allemagne. Les domaines d'intérêts de Liviu comprennent l'imagerie cardiovasculaire et inflammatoire, l'imagerie hybride, l'éducation médicale et l'informatique de la santé. Ses activités didactiques impliquent l'enseignement de bachelier et de la maîtrise à la faculté de physique médicale. Ses projets actuels comprennent des demandes internationales pour des subventions de recherche et la co-promotion des étudiants pour leurs thèses de maîtrise.

La formation polyvalente du Dr Stanisor lui permet d'aborder le diagnostic et la thérapie dans tous les contextes cliniques et lui permet d'aborder un large éventail de sujets, puisqu'il est spécialisé pour pratiquer la médecine nucléaire au Royaume-Uni ainsi qu'aux Pays-Bas et en Roumanie.

Liviu Stanisor, MD, PhD
Head of Nuclear Medicine Department
Neolife Medical Center
Iasi, Romania

Dr. Stanisor is currently the Head of Nuclear Medicine Department at Neolife Iasi, Romania. He has graduated from medical school in Iasi, Romania. After one year of training in Orthopedics, he started pursuing a PhD program at the Free University of Amsterdam, the Netherlands, where he defended his thesis. During his seven years of research in Cognitive Neuroscience, Dr. Stanisor's work was published in prestigious high-ranking international journals. He is the first author of "Automatic spread of attentional response modulation along Gestalt criteria in primary visual cortex", published in 2011 in Nature Neuroscience (impact factor 15.2) and "A unified selection signal for attention and reward in primary visual cortex", published in PNAS in 2013 (impact factor 9.7). He defended his thesis entitled "Coding of object significance and reward in the visual and frontal cortex" in September 2012 at the Free University of Amsterdam.

After completing his research projects, Liviu returned to the clinical field and followed a period of internship in Internal Medicine as well as related specialties (Cardiology, Pneumology, Oncology and Hematology). He then started his specialty training in Nuclear Medicine in Amsterdam, the Netherlands and finished it in Iasi, Romania. Since 2016 he is working as a Nuclear Medicine specialist at Neolife. His continuing medical training includes fellowships in Oncologic PET-CT and hybrid PET imaging in Zurich, Switzerland and radiochemistry training for PSMA in Munich, Germany. Liviu's areas of interest include cardiovascular and inflammation imaging, hybrid imaging, medical education and health informatics. His didactic activities involve teaching bachelor and master students at the Faculty of Medical Physics. His present projects include international application for research grants and co-promoting students for their master theses.

Dr. Stanisor's all-round training allows him to approach diagnosis and therapy in all clinical settings and enables him to bridge through different backgrounds, since he is specialty registered to practice Nuclear Medicine in the UK as well as the Netherlands and Romania.

Aristida Colan-Georges, MD, PhD
Centre d'imagerie médicale Prima Medical Medlife
SC PanMed Craiova Laboratoires
Craiova, Roumanie

Dr. Colan-Georges a étudié la médecine à l'Université de Médecine et de Pharmacie de Craiova, Roumanie, où elle a obtenu son diplôme en Médecine Générale en 1986. Par la suite, elle a poursuivi sa formation spécialisée en Radiologie et Imagerie Médicale, obtenant la certification de médecin spécialiste en Radiologie depuis 1991, ainsi que des certifications de surspécialité en Échographie, en Tomodensitométrie et en Imagerie par Résonance Magnétique. Ayant un intérêt particulier pour l'Imagerie du pelvis féminin, Dr. Colan-Georges a poursuivi sa thèse de doctorat sur le diagnostic d'imagerie dans l'infertilité féminine de l'étiologie pelvienne, qu'elle a soutenu avec succès en 2006.

En plus de sa formation en Roumanie, le Dr Colan-Georges a acquis une expérience internationale enrichissante. Elle détient des attestations de spécialité délivrées par l'Université Pierre et Marie Curie (UMPC) de Paris, France, 2005 («Attestation de Formation Spécialisée Approfondie», mention Radiodiagnostic et Imagerie Médicale) et par le Centre de Formation Francophone en Échographie, Aix-en-Provence, France, 2007 («Attestation de stage pratique d'Échographie du Sein», Centre francophone de formation en échographie).

Les intérêts de recherche du Dr Colan-Georges comprennent un large éventail de sujets avec un accent particulier sur l'imagerie par ultrasons. Elle est l'auteure de quatre livres (dont un Atlas de l'échographie complète du sein, *Atlas of Full Breast Ultrasonography*, Springer, 2016), de 13 chapitres de livres (dont sept en tant que premier auteur, mention pour deux chapitres dans *Lobar Approach to Breast Ultrasound*, Ed. Amy Dominique, Springer, 2018) et de plus de 100 articles et présentations évalués par des pairs, avec 9 présentations à EPOS at the European Congress of Radiology (ECR) de Vienne, 2010-2017.

Pour son travail exceptionnel, le Dr Colan-Georges a reçu de nombreux prix, dont le "Grand Prix du Congrès Francophone d'Imagerie Médicale des pays d'Europe du Sud-Est" (2006), le prix "Gheorghe Badea de la Société Roumaine d'Échographie en Médecine et Biologie" (2017) et bien d'autres.

Aristida Colan-Georges, MD, PhD
Senior Radiologist, Medical Imaging Center Prima Medical Medlife
SC PanMed Laboratories Craiova
Craiova, Romania

Dr. Colan-Georges studied medicine at the University of Medicine and Pharmacy of Craiova, Romania, where she graduated from the General Medicine Faculty in 1986. Subsequently she pursued her specialty training in Radiology and Medical Imaging, getting Board Certification in Radiology (1991) as well as formal subspecialty certifications in Ultrasonography, Computed Tomography and Magnetic Resonance Imaging. Having a special interest in Women's Healthcare Imaging, Dr. Colan-Georges pursued her PhD thesis on imaging diagnosis in female infertility of pelvic etiology, which she successfully defended in 2006.

Apart from her training in Romania, Dr. Colan-Georges acquired an enriching international experience. She holds specialty attestations issued by the University Pierre and Marie Curie (UMPC) from Paris, France, 2005 ("*Attestation de Formation Specialisée Approphondie, mention Radiodiagnostic et Imagerie Médicale*") and by the Francophone Training Center in Ultrasound from Aix-en-Provence, France, 2007 ("*Attestation de stage pratique d'Echographie du Sein*", Centre Francophone de Formation en Echographie).

Dr. Colan-Georges's research interests include a wide range of topics with a special emphasis on ultrasound imaging. She authored 4 books (including an *Atlas of Full Breast Ultrasonography*, Springer, 2016), 13 book chapters (7 of these as a first author, from which two chapters in the *Lobar Approach to Breast Ultrasound*, Ed. Amy Dominique, Springer, 2018) and over 100 peer-reviewed articles and presentations, from which 9 papers in EPOS at the European Congress of Radiology (ECR) Vienna, 2010-2017.

For her exceptional work, Dr. Colan-Georges received a variety of awards, which include the "Grand prize of the Francophone Congress of Medical Imaging of the countries of South Eastern Europe" (2006), the "Gheorghe Badea prize of the Romanian Society of Ultrasound in Medicine and Biology" (2017) and many others.

Dana Stoian, MD, PhD, CCD, FECSM
Professeur Agrégé de Médecine
Consultante principale en endocrinologie
Université de médecine et de pharmacie Victor Babes
Timisoara, Roumanie

Le Dr Stoian est diplômé de la Faculté de Médecine de l'Université de médecine et de pharmacie Victor Babes de Timisoara, en Roumanie (1997). Par la suite, elle a suivi sa formation spécialisée en endocrinologie, soutenu sa thèse de doctorat avec *Suma cum Laude*, et complété sa formation médicale avec une supra spécialisation en échographie endocrinienne et en sexologie à l'Université de Médecine et de Pharmacie Carol Davila à Bucarest.

Les principaux domaines d'intérêt du Dr Stoian sont représentés par l'échographie endocrine, l'élastographie de la souche principale, l'évaluation échographique en 4D en temps réel, les effets non classiques de la vitamine D et la prédiction du risque néonatal. Elle a publié 3 livres en tant qu'auteur unique, a écrit 12 chapitres de manuels médicaux édités en Roumanie et à l'étranger, plus de 20 articles indexés dans ISI Core Collection, et plus de 20 BDI dans des extenseurs, avec un score Hirsch de 8.

Pour sa performance exceptionnelle, Dr Stoian a reçu une variété de prix, y compris: Bourse de voyage, jeune chercheur, Congrès International de la Ménopause, Berlin, Allemagne (2002); Association Roumaine de Médecine Sexuelle – Meilleure présentation orale, Sinaia, Roumanie (2004); Bourse ESSM – 100% de remboursement pour la FEASM, accordée par le Comité de l'éducation de ESSM, Oxford, Royaume-Uni (2007); Meilleure présentation, Congrès d'Europe centrale pour l'ostéoporose, Cracovie, Pologne (2009); Endocrinologue clinique de l'American Association – Travel Grant Phoenix, États-Unis (2013); 13e Congrès de Saint-Gall sur le cancer du sein – Bourse de voyage, Saint-Gall, Suisse (2013); Meilleure affiche, Congrès de l'Association Roumaine-Allemande de Gynécologie, Timisoara, Roumanie (2014) etc.

Actuellement, le Dr Stoian est professeur agrégé de médecine et consultant principal au département d'endocrinologie de l'Université de Médecine et de Pharmacie Victor Babes à Timisoara. Elle est également membre du Centre d'enseignement en échographie, organisé par le professeur Ioan Sporea à Timisoara, en Roumanie.

Dana Stoian, MD, PhD, CCD, FECSM
Associate Professor of Medicine
Senior Endocrine Consultant, Department of Endocrinology
Victor Babeș University of Medicine and Pharmacy
Timișoara, Romania

Dr. Stoian graduated from the Faculty of Medicine at the Victor Babes University of Medicine and Pharmacy in Timisoara, Romania (1997). Subsequently she followed her specialty training in endocrinology, defended her PhD thesis with *Suma cum Laude*, and completed her medical training with super specialization in Endocrine Ultrasound as well as Sexology at the University of Medicine and Pharmacy Carol Davila in Bucharest.

Dr. Stoian's major areas of interest are represented by endocrine ultrasound, main strain elastography, real time 4 D ultrasound evaluation, nonclassical effects of vitamin D and prediction of neonatal risk. She published 3 books as a single author, authored 12 chapters in medical textbooks edited in Romania and abroad, over 20 articles indexed in ISI Core Collection, and over 20 peer reviewed articles, having a Hirsch Score of 8.

For her outstanding performance, Dr Stoian was awarded a variety of prizes, including: Travel Grant, young Researcher, International Congress of Menopause, Berlin, Germany (2002); Romanian Association for Sexual Medicine – Best oral presentation, Sinaia, Romania (2004); ESSM Grant – 100% reimbursement for the FEASM, granted by the Education Committee of ESSM, Oxford, UK (2007); Best presentation, Central European Congress of Osteoporosis, Krakow, Poland (2009); American Association Clinical Endocrinologist – Travel Grant Phoenix, USA (2013); 13th St. Gallen Congress of Breast Cancer – Travel Grant, St. Gallen, Switzerland (2013); Best Poster, Congress of Romanian-German Association of Gynecology, Timisoara, Romania (2014), etc.

Currently Dr. Stoian is an Associate Professor of Medicine and a Senior Consultant in the Department of Endocrinology at the Victor Babes University of Medicine and Pharmacy in Timisoara. She is also a member of the Teaching Centre in Ultrasound, organized by Professor Ioan Sporea in Timisoara, Romania.

Grigore Popusoi, MD
Cardiologue interventionnel
Département de cardiologie et de radiologie interventionnelle
Clinique de Montevergine, Mercogliano, Italie

Le Dr Grigore Popusoi est un spécialiste ayant une expérience clinique en cardiologie générale et invasive, en radiologie interventionnelle et en angiologie, en anesthésiologie et en réanimation. Après avoir fait ses études à la faculté de médecine générale de l'Université d'État de médecine et de pharmacie Nicolae Testemitsanu à Chisinau, le Dr Grigore Popusoi a poursuivi sa formation spécialisée en anesthésiologie et réanimation (certification du conseil en 1994) et en cardiologie (certification du conseil en 1997).

Sa formation ultérieure comprenait une bourse de cardiologie interventionnelle à l'école de médecine et hôpital universitaire de l'Université Charle à Plzen, République Tchèque (1999), une bourse de cardiologie au programme de séminaires médicaux Cornell-Salzbourg à Salzbourg, Autriche (2000) et une bourse de cardiologie, Chirurgie cardiaque et anesthésiologie à l'International Heart School de Bergame, Italie (2001). Au cours de la période 20012005, le Dr Grigore Popusoi a été chercheur en cardiologie invasive / interventionnelle à la clinique Montevergine de Mercogliano, en Italie. Depuis 2005, il est cardiologue interventionnel à cette clinique.

Le Dr Popusoi s'intéresse à l'angioplastie coronarienne transluminale percutanée, aux endoprothèses carotidiennes et coronariennes, aux interventions endovasculaires, à l'angioplastie par laser et à l'implantation de stents à élution médicamenteuse, ainsi qu'à l'imagerie cardiaque et vasculaire. Il est l'auteur de plus de 30 publications dans des revues spécialisées de premier plan telles que Eurointervention (publication officielle d'EuroPCR et de l'Association européenne des interventions cardiovasculaires percutanées), Europace (European Journal of Stimulation, Arythmies et Cardiac Electrophysiology de l'European Heart Rhythm Association de la Société Européne de Cardiologie), Journal de Médecine de Revascularisation Cardiovasculaire, Excerpta Medica, Journal Italien de Cardiologie, Journal International de Cardiologie, JACC: Interventions Cardiovasculaires, JACC (Journal de l'American College of Cardiology) etc.

Présentation au congrès

- Sténose de l'artère carotide chez les patients asymptomatiques: quand et quoi faire?

Grigore Popusoi, MD
Interventional Cardiologist
Department of Cardiology and Interventional Radiology
Montevergine Clinic, Mercogliano, Italy

Dr. Popusoi is a specialist with clinical experience in general and invasive cardiology, interventional radiology and angiology, anesthesiology and reanimation. After completing the faculty of General Medicine at the Nicolae Testemitsanu State University of Medicine and Pharmacy in Chisinau, Dr. Popusoi pursued his specialty training in Anesthesiology and Reanimation (board certification in 1994) and Cardiology (board certification in 1997).

His subsequent training included an Interventional Cardiology fellowship at the Charle's University School of Medicine and University Hospital in Plzen, Czech Republic (1999), a Cardiology fellowship within the Cornell-Salzburg Medical Seminars program in Salzburg, Austria (2000) and a fellowship in Cardiology, Cardiac surgery and anesthesiology at the International Heart School in Bergamo, Italy (2001). In the period 2001 – 2005, Dr. Grigore Popusoi practiced as a Fellow in Invasive / Interventional Cardiology, at the Montevergine Clinic in Mercogliano, Italy. Since 2005 he is an Interventional Cardiologist at this Clinic.

Dr. Popusoi has a broad area of research interests related to percutaneous transluminal coronary angioplasty (PTCA), carotid and coronary artery stenting, endovascular interventions, laser angioplasty and drug eluting stents (DES) implantation, as well as cardiac and vascular imaging. He authored over 30 publications published in leading specialty journals such as Eurointervention (the official publication of EuroPCR and the European Association of Percutaneous Cardiovascular Interventions), Europace (the European Journal of Pacing, Arrhythmias and Cardiac Electrophysiology of the European Heart Rhythm Association of the European Society of Cardiology), Journal of Cardiovascular Revascularization Medicine, Excerpta Medica, Italian Journal of Cardiology, International Journal of Cardiology, JACC: Cardiovascular Interventions, JACC (Journal of the American College of Cardiology), etc.

Presentation at the congress:

- Carotid artery stenosis in asymptomatic patients: when and what should be done?

Mariia Tregubova, MD
Département de radiologie
Institut national de chirurgie cardiovasculaire Amosov
Kiev, Ukraine

Le Dr. Tregubova a étudié la médecine à la Faculté de médecine générale de l'Université Nationale de Médecine Bogomolets de Kiev, en Ukraine. Par la suite, elle a poursuivi sa formation spécialisée à l'Académie nationale de médecine Shupyk de l'enseignement post-universitaire à Kiev, en Ukraine, obtenant des certifications du Conseil en cardiologie et en radiologie.

En dehors de son travail clinique, Dr. Tregubova est activement impliquée dans des activités académiques et de recherche, participant à divers événements éducatifs tels que l'école d'imagerie par résonance magnétique Farmak à Kiev, en Ukraine (2016, 2017), le congrès de la Société européenne de radiologie à Vienne, en Autriche (2018) et l'École d'hiver de l'École européenne de multimodalité en imagerie et thérapie (ESMIT) à Bergame, en Italie (2018). Ses principaux intérêts de recherche sont liés à l'imagerie cardiovasculaire. Compte tenu de ses certifications en cardiologie et en radiologie, le Dr Tregubova a rejoint le personnel de l'Institut national de chirurgie cardiovasculaire Amosov.

Présentations au congrès

- Le rôle de l'angioscanner coronaire dans l'évaluation de la maladie coronarienne
- Reconnaissance TDM de la dissection aortique aiguë

Mariia Tregubova, MD
Department of Radiology
Amosov National Institute of Cardiovascular Surgery
Kiev, Ukraine

Dr. Tregubova studied medicine at the Faculty of General Medicine, National Bogomolets Medical University in Kiev, Ukraine. Subsequently she pursued her specialty training at the Shupyk National Medical Academy of postgraduate education in Kiev, Ukraine, getting Board certifications in Cardiology and Radiology.

Apart from her clinical work, Dr. Tregubova is actively involved in academic and research activities, participating in a variety of educational events such as the Farmak Magnetic Resonance Imaging School in Kiev, Ukraine (2016, 2017), the European Society of Radiology congress in Vienna, Austria (2018) and the European School of Multimodality Imaging & Therapy (ESMIT) Winter School in Bergamo, Italy (2018). Her main research interests are related to cardiovascular imaging. Given her Board certifications in both Cardiology and Radiology, Dr. Tregubova joined the staff of the Amosov National Institute of Cardiovascular Surgery.

Presentations at the congress:

- The role of CT coronary angiography in the evaluation of coronary artery disease
- CT recognition of acute aortic dissection

Mario Taha, MD
Directeur Général
Centre d'Imagerie Médicale Yuzh-Ukrmedtekh
Directeur Médical, Chef du Département de Radiologie
Clinique Medcor, Odessa, Ukraine

Dr. Taha est le Directeur Médical et Chef du Département de Radiologie de Medcor & Acc Medicale et le chef de la Direction (CEO) du Centre Médical Yuzh-Ukrmedtekh, Odessa, Ukraine. Il a étudié la médecine à Grodno State Médical Université à Minsk, en Biélorussie, après il a suivi sa formation en radiologie diagnostique et interventionnelle à l'Académie Nationale de Médecine de l'Education de troisiéme cycle à Minsk, en Biélorussie, puis à Université Saint-Joseph de Beyrouth (HDF) Beyrouth, Liban, et Paris, France. Il a été ensuite radiologue à l'hôpital universitaire de Dar Al Al Amal de Baalbek, au Liban (2004-2006) et en tant que chef du département de radiologie à l'hôpital Bekaa, un des principaux établissements de soins de santé dans la région de Bekaa au Liban (2006-2012).

En dehors de son travail clinique, le Dr Taha est titulaire d'un diplôme associé de recherche, ses recherches d'intérêt étant liées à l'imagerie par résonance magnétique dans une variété de troubles tels que l'endométriose, le cancer du rectum, le cancer de la prostate etc. Enfin et surtout, le Dr. Taha participe activement à la promotion de l'enseignement et de l'éducation radiologique, y compris par les médias locaux et des présentations de télévision. Il est le co-fondateur et le chef de la Direction (CEO) des communautés de radiologues sur le web **radiographia.ru** & **radiographia.info**

Présentations au congrès

- Imagerie par résonance magnétique dans le cancer de la prostate
- Imagerie par résonance magnétique dans le cancer du rectum
- Le rôle de l'imagerie par résonance magnétique dans l'endométriose pelvienne profonde

Mario Taha, MD
Chief Executive Officer (CEO)
Yuzh-Ukrmedtekh Medical Imaging Center
Medical Manager, Chief of Radiology Department
Medcor Clinic, Odessa, Ukraine

Dr. Taha is the Medical Manager and Chief of Radiology Department of the Medcor & Acc Medical and the Chief Executive Officer (CEO) of the Yuzh-Ukrmedtekh Medical Center, Odessa, Ukraine. He studied medicine at Grodno State Medical University in Belarus, after which followed his training in Diagnostic and Interventional Radiology at the National Medical Academy of Postgraduate Education in Minsk, Belarus, then at the Saint Joseph University, France University Hospital (HDF) Beirut Lebanon & Paris France. Subsequently he worked as a radiologist at the Dar Al Al Amal University Hospital in Baalbek, Lebanon (2004 – 2006) and as the Chief of Radiology Department at the Bekaa Hospital, a leading health care institution in Bekaa region, Lebanon (2006 – 2012).

Apart from his clinical work, Dr. Taha holds a Research Associate degree, his research interests being related to magnetic resonance imaging in a variety of disorders such as endometriosis, rectal cancer, prostate cancer, etc. Last, but not least, Dr. Taha is actively engaged in promoting radiology teaching and education, including via local mass media and TV presentations. He is also the co-founder and the Chief Executive Officer (CEO) of the web based radiologists' communities **radiographia.ru** & **radiographia.info**

Presentations at the congress:

- Magnetic resonance imaging in prostate cancer
- Magnetic resonance imaging in rectal cancer
- The role of magnetic resonance imaging in deep pelvic endometriosis

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- X-Ray
- Interventional Radiology

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- PET/CT
- Gamma Camera (Scintigraphy)

Laboratory
- Genetics
- Cytogenetics
- Molecular Cytogenetics
- Molecular Genetics
- Genetic Predisposition Test

Pathology

Treatment Services
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- Chemotherapy
- Targeted Therapies
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- TrueBeam™ STX with Novalis® Radiosurgery
- 3D Conformal Radiotherapy
- IMRT (Intensity Modulated Radiotherapy)
- IGRT (Image-guided Radiotherapy)
- SBRT (Stereotactic Body Radiotherapy)
- RapidArc (Volumetric Intensity Modulated Arc Therapy)
- SRS (Stereotactic Radiosurgery)
- Electron Therapy
- 3D Brachytherapy

Gynecology and Obstetrics

Psycho-Oncology

ABSTRACTS

Unparalleled contributions of FDG-PET imaging to medicine over the past 4 decades

Abass Alavi

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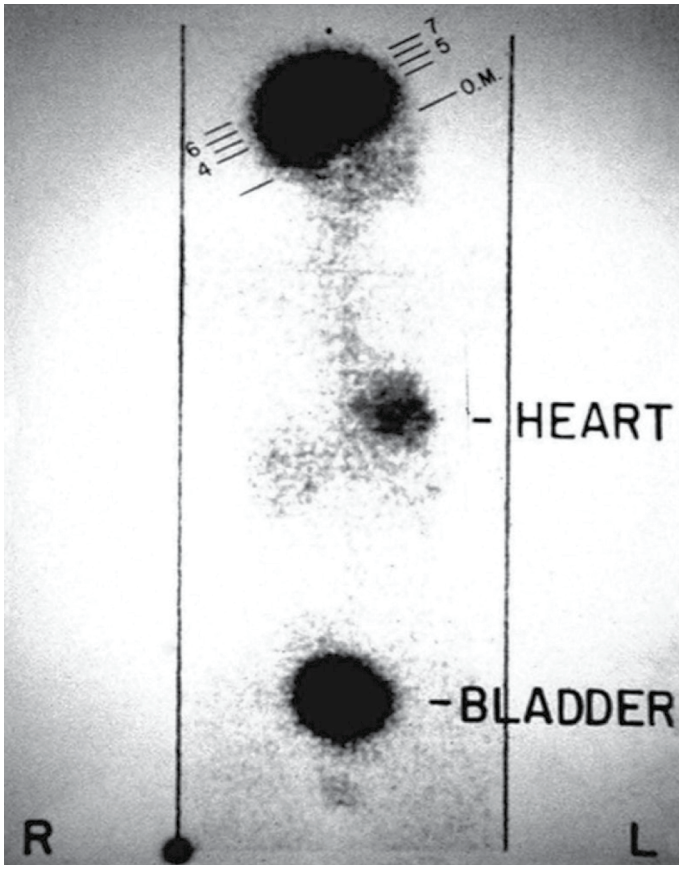
Background: Positron emission tomography (PET) with 2-deoxy-2-[18F]fluoro-D-glucose (FDG) is currently one of the most widely used imaging modalities. Both the technology and the radiopharmaceutical were conceived in the 1970s, facing a variety of challenges. Nowadays, a variety of PET techniques using partial volume correction and segmentation allow accurate quantification of metabolic activity in different tissues of the human body in normal and disease states.
Content: The presentation reviews the long journey of FDG-PET from its origin up to date with a large number of case illustrations, including the first images obtained personally while working on developing the modality in the 1970's. A brief summary of the imaging equipment and its evolution as well as the main contributions of FDG-PET imaging to medical practice and research activities are also discussed.
Conclusion: FDG-PET-CT imaging has had a substantial impact on research and on the day to day practice of medicine. This has resulted in minimizing pain and suffering for millions of patients and in reducing the cost of health care worldwide.
Key words: Positron emission tomography, fluorodeoxyglucose, FDG-PET evolution.



The first whole body human FDG-PET scan performed by Abass Alavi in 1976 at the University of Pennsylvania by employing a conventional rectilinear machine as the only option at that time.

Evolving role of FDG-PET in detecting and characterizing infectious and inflammatory disorders

Abass Alavi

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Background: Because of its ability to quantify the rate of 2-deoxy-2-[18F]fluoro-D-glucose (FDG) uptake, FDG PET/CT can provide valuable information related to the degree of inflammatory activity, its location and extension even before morphological changes may become evident. It is not surprising that the modality is being used as a diagnostic tool in a variety of infectious and inflammatory disorders.
Content: Due to its high sensitivity and whole-body approach, FDG PET has been used for detecting culprit lesions and/or evaluation of disease activity in systemic infections and inflammations, fever of unknown origin, chronic osteomyelitis, prosthetic joint infections, vasculitis, spinal infections, diabetic foot infections, inflammatory bowel disease (IBD), degenerative joint disease, active granulomatous diseases such as sarcoidosis, as well as in a variety of non-infectious/inflammatory or proliferative conditions such as radiation pneumonitis and post-lung transplant lymphoproliferative disorders. Novel PET radiopharmaceuticals for imaging infection and inflammation tracers are also being tested. The presentation reviews the current state of this very important application of FDG-PET imaging. Relevant FDG PET/CT and PET/MRI images showing the pattern of FDG uptake in common infectious and inflammatory disorders are also provided.
Conclusion: FDG-PET/CT imaging represents a perspective modality for evaluation of infectious and inflammatory disorders that can provide valuable information in the appropriate clinical setting.
Key words: Positron emission tomography, infection and inflammation imaging, fever of unknown origin, FDG.

Evolving role of PET imaging in assessment of atherosclerosis

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Background: Atherosclerosis is a major health problem and a leading cause of cardiovascular disease worldwide. The disease frequently coexists in more than one vascular bed and the clinical outcome and therapeutic options are largely dependent on early diagnosis.
Content: Atherosclerosis represents a dynamic inflammatory process, therefore many principles of diagnostic imaging studies can be directed at the biological composition and inflammatory state of atherosclerotic lesions. FDG-PET/CT holds great potential in the diagnostic work-up of atherosclerosis, by enabling both functional imaging reflecting the inflammatory activity within the atherosclerotic plaques and structural whole-body imaging reflecting local arterial wall thickening and the degree of arterial stenosis. Functional imaging becomes especially relevant knowing that vascular FDG uptake and calcification do not overlap significantly. Studies also show that FDG PET may be useful in evaluating and individualizing therapeutic interventions as the arterial FDG activity attenuates after administration of lipid-lowering medication or life style interventions. The presentation provides a brief overview of animal and clinical studies illustrated with relevant images on this topic.
Conclusion: Data from both animal and human studies show that FDG-PET has great potential for assessing large artery atherosclerosis and evaluating the effect of therapeutic interventions. However, new studies are needed for further validation and standardization of imaging protocols before FDG-PET imaging of atherosclerosis can be adopted in clinical practice.
Key words: Atherosclerosis, positron emission tomography, FDG-PET/CT.

What can and what cannot be accomplished with PET: clarifying ongoing misconceptions

Abass Alavi

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Background: The introduction of 2-deoxy-2-[18F]fluoro-D-glucose (FDG) in 1976 as a joint effort of the University of Pennsylvania and Brookhaven National Laboratory opened new perspectives in medical imaging. Although FDG PET/CT has become a unique cornerstone of molecular imaging and one of the most widely used imaging modalities, familiarity with its limitations is of paramount importance for avoiding unnecessary examinations.
Content: FDG PET and PET/CT are now widely used in many oncologic diseases for tumor staging/re-staging and monitoring of disease activity as well as for evaluating the response to administered therapy. However, FDG is a nonspecific tracer and can also accumulate at the sites of many benign processes. Even though dual time-point imaging of FDG PET may be helpful in differentiating malignant from benign processes, exceptions exist, and some authors have even demonstrated significant overlap of FDG uptake patterns in malignant and benign lesions. A variety of other PET radiopharmaceuticals such as FLT, ^{60}Cu-ATSM, ^{18}F-EF5, ^{18}F-FMISO, FIAU, FHBG, FHPG, ^{11}C-Acetate, ^{18}F-Fuoride, ^{94m}Tc-MIBI, ^{18}F or ^{11}C -labeled Choline are increasingly being used in various disorders and their area of clinical applications is expanding. In this context, the lecture is also approaching various controversial domains such as PET applications for imaging islets in pancreas, detecting plaques and tangles in Alzheimer's disease or bacteria at sites of infection. Last, but not least, the presentation provides a brief summary related to novel quantitative techniques such as partial volume correction and global disease assessment.
Conclusion: At the end of the lecture attendees would expand their knowledge about what can and what cannot be accomplished with FDG PET/CT imaging.
Key words: Positron emission tomography, fluorodeoxyglucose, FDG PET/CT limitations.

Imaging of the acute female pelvis

Derchi Lorenzo

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Background: Female patients with acute abdomino/pelvic symptoms are a relatively common problem in the Emergency Department. The diagnostic approach to them is based first on clinical ground (which symptoms, which age), then on lab tests (especially a serum beta-hCG assessment) and imaging.
Content: Ultrasound (US) is the preferred imaging technique when clinical findings suggest an acute pelvic condition; however, symptoms are not always specific and also computed tomography (CT) and magnetic resonance imaging (MRI) are frequently employed. Although, ideally, imaging examinations should be performed with full knowledge of both clinical and laboratory situation, this is not always the case, since some lab tests are time-consuming and emergency studies have to be performed before knowing their results.
Conclusion: A large variety of conditions may cause acute pelvic symptoms but the most common and "dangerous" ones are adnexal torsion, pelvic inflammatory disease (PID) and ectopic pregnancy. This presentation will describe the imaging findings observed in them and will underline the need for integration of clinical information with imaging findings to reach the correct diagnosis.
Key words: acute pelvic symptoms, imaging examinations, female pelvis.

Non-traumatic brain injuries

Calli Cem

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Corresponding author: cem.calli@gmail.com

Background: Non-traumatic brain injuries consist of many diverse pathologies of the brain and need urgent diagnosis and treatment. Non-traumatic brain injuries include vascular and non-vascular conditions like stroke, spontaneous intracranial hemorrhage, infections, tumors, intoxications, etc.
Content: The aim of this presentation is to give information about common pathologies of non-traumatic brain injuries and imaging findings how to diagnose them correctly, thus enabling the appropriate treatment. The roles of different imaging modalities will be discussed and emphasized.
Key words: non-traumatic brain injuries, spontaneous intracranial hemorrhage, brain infections, brain tumors, brain imaging modalities.

Liver imaging in oncologic patients lecture

Mannelli Lorenzo

Department of Radiology, Memorial Sloan-Kettering Cancer Center, New York, NY, USA
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Background: Multiple cancers have potential for metastasizing to the liver. Cancer treatment very often affects liver parenchyma causing for example steatosis or cirrhosis. The lecture aims to discuss imaging techniques (CT, MRI, ultrasound, and PET) in hepatic imaging in oncologic patients as well as the pitfalls of hepatic imaging in an oncologic population.
Content: Available literature on liver imaging in oncologic patients will be reviewed and several cases will be used as examples to illustrate the imaging approach to liver imaging in an oncologic center. Interactive questions/answers with audience will be used to assess the proper delivery of the objectives. In particular the audience will be asked an opinion on multiple cases and the different answers will be discussed during the lecture.
Conclusions: Attendees will be familiar with standardized approach to liver imaging and different imaging modalities in an oncologic population. The attendees will also learn how to assess post treatment response and the pitfalls of hepatic imaging in oncologic patients.
Key words: liver malignancy, magnetic resonance imaging, ultrasound, positron emission tomography.

Pancreatic cancer lecture

Mannelli Lorenzo

Department of Radiology, Memorial Sloan-Kettering Cancer Center, New York, NY, USA
Corresponding author: mannellilorenzo@yahoo.it

Background: Pancreatic cancer staging is performed by imaging, with CT being the warhorse for T and M staging. MRI and ultrasound are routinely used to address specific clinical questions. Positron emission tomography has a role in post treatment assessment. The lecture aims to discuss the role of common imaging techniques (CT, MRI, ultrasound, and PET) in pancreatic cancer staging and post treatment evaluation.
Content: Available literature on pancreatic cancer staging will be reviewed and several cases will be used as examples to illustrate the imaging approach to pancreatic cancer staging and post treatment follow-up. Interactive questions/answers with audience will be used to assess the proper delivery of the objectives. In particular the audience will be asked an opinion on multiple cases and the different answers will be discussed during the lecture.
Conclusions: Attendees will be familiar with standardized reporting of pancreatic cancer staging and the use of the different imaging modalities. The attendees will also learn how to assess post treatment response and the pitfalls of pancreatic staging by imaging.
Key words: pancreatic ductal adenocarcinoma, magnetic resonance imaging, ultrasound, positron emission tomography.

CT in oncology: the evaluation of response to treatment

Caramella Davide

Diagnostic and Interventional Radiology, University of Pisa, Italy
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Background: In the last decades, cancer treatment has increased in complexity and cost, therefore a careful monitoring of the response to treatment has become increasingly relevant in our clinical practice.
Content: In this presentation the discussion will focus on a few clinical examples able to give an overview of the state-of-the art in cancer treatments and of the most relevant issues in the evaluation of the response to treatment, with particular reference to the role of computed tomography (CT). Patient series of different oncologic subspecialties will be also analyzed, highlighting challenges and opportunities in terms of the use of CT for assessing the response to treatment. The materials will be put in a clinical perspective to give practical guidance to the participating physicians.
Conclusions: The presentation aims will be achieved if the participating physicians will improve their knowledge of the most relevant issues in the evaluation of the response to oncologic treatments.
Key words: computed tomography, cancer therapy, treatment response evaluation.

Imaging rectal cancer in 2018: how good are we?

Paroder Viktoriya

Department of Radiology, Memorial Sloan-Kettering Cancer Center, New York, NY, USA
Corresponding author: paroderv@mskcc.org

Background: Colorectal Cancer is one of the leading causes of cancer deaths worldwide**.**
Learning objectives: Critical role of radiologist in multidisciplinary pre-treatment assessment of rectal cancer will be outlined. Surgically relevant anatomy and surgical procedures for treatment of high, mid and low rectal tumors will be discussed in the context of interpretation of rectal magnetic resonance imaging (MRI) findings and staging computed tomography (CT) scans. Most up-to-date MR imaging protocols for rectal tumor staging and post treatment assessment will be outlined. Rectal and anal cancer staging will be discussed using multiple cases demonstrating entities corresponding to different types of rectal tumors. Pitfalls of MR imaging with case-based examples will also be discussed.
Outcomes: Attendees will increase their familiarity with the most up-to-date imaging techniques for staging and surveillance of rectal cancer. Attendees will enhance their ability to conduct pre-treatment assessment of rectal tumors, including identifying risk factors for recurrence and predicting clear circumferential resection margin. Attendees will also become familiar with pitfalls commonly encountered on rectal MRI scans.
Key words: colorectal cancer, rectal adenocarcinoma, magnetic resonance imaging, computed tomography.

Imaging esophageal cancer in 2018: achievements and challenges

Paroder Viktoriya

Department of Radiology, Memorial Sloan-Kettering Cancer Center, New York, NY, USA
Corresponding author: paroderv@mskcc.org

Background: Esophageal cancer is the 8th most common cancer worldwide and the 6th leading cause of cancer death worldwide with 5-year survival rates rarely exceeding 40%.
Learning objectives: Epidemiology and causes of esophageal cancer will be discussed. Surgical and minimally invasive approaches to treatment of esophageal cancer will be discussed with imaging correlation. Role of CT and PET/CT in staging and surveillance of esophageal cancer will be outlined. Potential role of diffusion weighted imaging, PET/MRI and novel molecular imaging markers for preoperative and post-treatments assessment of esophageal cancer will be discussed.
Outcomes: Attendees will increase their familiarity with the most up-to-date imaging techniques for staging and surveillance of esophageal cancer as well as of the most current experimental approaches. Attendees will broaden their understanding of the role of a radiologist in the multidisciplinary management of esophageal cancer patients.
Key words: esophageal cancer, esophageal cancer staging, adenocarcinoma of the esophagus, squamous cell carcinoma of the esophagus, gastroesophageal junction tumors, her-2 positive tumors, diffusion weighted imaging, PET/CT, PET/MRI.

Thérapeutiques loco régionales des Carcinomes Hepato cellulaires

Boudghene Frank

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Introduction: Le Carcinomes Hepato cellulaires (CHC) qui représente actuellement la troisième cause de décès par cancer dans le monde (> 0,5 Millions patients chaque année), est une des tumeurs malignes les plus fréquentes. C'est une affection qui survient sur hépatopathie chronique (cirrhose virale ou métabolique) et sa détection est essentielle : elle repose en grande partie sur l'imagerie ce qui nécessite une surveillance rapprochée des patients à risque (6-12 mois), qui se fait habituellement par echographie. L'objectif est de détecter assez tôt cette tumeur qui peut alors être curable (30% cas) lorsqu'elle est limitée (unique < 5 cm ou <3 nodules < 3 cm). Le bilan d'extension de cette tumeur est alors réalisé à l'aide du scanner ou de l'IRM avec injection de contraste.
Contenu: La radio fréquence est une bonne alternative à la résection chirurgicale dans les stades A, avec une mortalité < 1% (versus 14-24%) et donne une survie d'environ 80% à 3 ans et de plus de 50% à 5 ans. En cas de lésion tumorale plus évoluée (> 3 nodules ou > 5 cm) un traitement palliatif prolongeant la durée et la qualité de vie des patients par chimio-embolisation artérielle intra-hépatique peut être indiqué. L'utilisation récente de particules relarguant la drogue au sein de la tumeur semble améliorer les résultats de la chimio embolisation. De

même les traitements combinés voire adjuvants associant radiofréquence et administration de drogues semblent plus efficaces. Une approche multidisciplinaire semble plus que jamais nécessaire dans la prise en charge de cette maladie qui répond de mieux en mieux au traitement loco-régional qui lui-même évolue vers des traitements combinés.
Conclusions: La présentation passe en revue les principes de ces techniques de radiologie interventionnelle hépatique ainsi que leurs indications et résultats.
Mots-clés: carcinomes hepato cellulaires, thérapeutiques loco régionales, chimio-embolisation artérielle intra-hépatique.

Loco-regional therapies for hepatocellular carcinoma (HCC)

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Introduction: Hepatocellular carcinoma (HCC) is currently the third leading cause of cancer death worldwide (affecting over 0.5 million patients each year), being one of the most common malignancies. It is a condition that occurs in chronic liver disease (viral or metabolic cirrhosis) and its detection is essential: it is largely based on imaging which requires close monitoring of patients at risk (6-12 months), usually by abdominal ultrasound. The goal of imaging is to detect this tumor at an early stage that can be curable (30% cases), when the tumor size is limited (single nodule <5 cm or <3 nodules <3 cm). A more detailed assessment of this tumor is then performed using computed tomography or magnetic resonance imaging with contrast injection.
Content: Radiofrequency ablation of HCC is a good alternative to surgical resection at stage A, with a mortality <1% (versus 14-24%) and gives a survival of about 80% at 3 years and more than 50% at 5 years. In case of more advanced HCC (> 3 nodules or > 5 cm), palliative treatment prolonging the duration and quality of life by intrahepatic arterial chemo-embolization may be indicated. The recent use of particles releasing the drug within the tumor seems to improve the results of chemo embolization. Similarly, combination and even adjuvant combination of radiofrequency ablation and drug administration appear to be more effective. A multidisciplinary approach seems more necessary than ever in the management of this disease, which responds better and better to locoregional treatment, which itself is evolving towards combination treatments.
Conclusions: The presentation reviews the principles of these interventional radiology techniques as well as their indications and results in patients with HCC.
Key words: hepatocellular carcinoma, loco-regional therapy, intrahepatic arterial chemoembolization.

Imagerie nouvelle du cancer du côlon: à l'eau et à l'air

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Introduction: Avec 36.000 nouveaux cas par an les cancers colo-rectaux sont au deuxième rang des cancers (15 %) et des décès par cancer (16.000 décès annuels) en France. L'incidence de ce cancer risque de s'accentuer sous l'effet conjugué du vieillissement de la population et des facteurs de risques alimentaires ou génétiques (+ 40% depuis 20 ans en Europe).
Contenu: Le diagnostic est souvent fait par la coloscopie : mais c'est un examen invasif qui nécessite une anesthésie générale. Le coloscanner à l'eau a remplacé le lavement baryté et c'est un examen simple et facile à réaliser notamment chez les sujets agés en cas de suspicion de cancer colique : il permet d'identifier la tumeur et de préciser dans le même temps le bilan d'extension qui conditionne les choix thérapeutiques. La survie globale de ce cancer dépasse à peine 50% à 5 ans mais découvert au stade d'adénome, ce cancer est tout à fait curable par la résection des polypes (risque dégénérescence = 1% si < 10 mm, 10% si > 10 mm, 40% si > 20 mm). Le dépistage de masse par Hémocult dès 50 ans (tous les 2 ans) va provoquer en France une augmentation des demandes de coloscopie. Comme des polypes ne sont découverts que dans 20% cas, le coloscanner à l'air (coloscopie virtuelle) plus efficace qu'à l'eau pour détecter des petits polypes pourra être proposée comme méthode alternative peu invasive et moins couteuse. Mais il faudra que la technique réponde à des critères de qualité optimum : tous les temps de l'examen devront être optimisés de façon à égaler la sensibilité de la coloscopie.
Conclusions: La présentation passe en revue les différents temps indispensables à la réalisation d'un examen de qualité: préparation, acquisition, post-traitement. Il va permette aussi aux auditeurs de se familiariser avec la technique et d'en apprécier les principaux résultats. La lecture étant assez difficile, une formation assidue aux différents pièges que l'on peut rencontrer et une pratique importante seront probablement nécessaires comme en mammographie.
Mots-clés: cancer du côlon, imagerie du côlon, le coloscanner à l'eau.

New imaging of colon cancer: with water and air

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Introduction: With 36,000 new cases per year, colorectal cancer is the second most common cancer (15%) and cause of cancer death (16,000 annual deaths) in France. The incidence of this cancer is likely to increase under the combined effect of population aging, type of food intake and genetic risk factors (+ 40% for 20 years in Europe).
Content: The diagnosis is often made by colonoscopy, but this represents an invasive examination that requires general anesthesia. The water-based colonography has replaced the barium enema and it is a simple and easy way to carry out the investigation, especially in the elderly with suspected colic cancer: it allows to identify the primary tumor, to evaluate its extension and to determine the therapeutic options. The overall survival of this cancer barely exceeds 50% at 5 years, but if discovered at the stage of adenoma this cancer is quite curable by the resection of polyps (risk of degeneration = 1% if <10 mm, 10% if > 10 mm, 40% if > 20 mm). Mass screening with Hémocult from the age of 50 (every 2 years) will provoke in France an increase in colonoscopy requests. Since polyps are only found in 20% of cases, the use of CT (virtual colonoscopy) for detecting small polyps may be proposed as a minimally invasive and less costly alternative method. But it will be necessary that the technique meets criteria of optimum quality: all the steps of the examination will have to be optimized so as to equal the sensitivity of the colonoscopy.
Conclusions: The presentation reviews the different components required for a quality examination: preparation, acquisition, post-processing. It will also allow the listeners to become familiar with the technique and to appreciate the main results. As reading is quite difficult, careful training about various pitfalls that can be encountered and relevant practice are likely to be necessary as in mammography.
Key words: colon cancer, colon imaging, colonoscopy with water.

Comment réussir un scanner cardiaque et coronarien (SCC)?

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Introduction: Grâce à la performance diagnostique élevée du scanner cardiaque et coronarien (SCC), il est devenu une des méthodes couramment utilisées, dans la pathologie cardiaque. En effet le SCC est le seul examen complet, qui permet de manière non invasive, d'évaluer d'une part l'anatomie cardiaque et son environnement, et d'autre part, appréhender l'étendue de la maladie coronarienne.
Contenu: La présentation passe en revue plusieurs techniques qui s'offrent à nous. Dans un premier temps, une acquisition sans injection de produit de contraste va permettre le calcul du score calcique qui s'est imposé comme prédicteur le plus puissant d'évènements coronariens chez les patients asymptomatiques. Dans un second temps, l'injection de produit de contraste va nous permettre d'étudier de manière précise, le luminogramme des artères coronaires à l'aide de différents moyens de reconstruction, et ceci avec une valeur prédictive négative > 90% permettant ainsi d'éviter la réalisation d'une coronarographie à visée diagnostique. Cependant, malgré les progrès très rapides de ces dernières années, le SCC connait de nombreuses limites. La plupart d'entre elles sont liées au patient (poids, fréquence cardiaque, arythmie, coopération…), ce qui va nous conduire à une première sélection pour espérer tirer bénéfice de l'exploration. Puis secondairement, nous allons être amenés à avoir une «bonne mise en condition du patient» pour la réussite de l'examen. Plusieurs paramètres vont alors intervenir, ceux liés à la physiologie du patient, et ceux liés à la technique découlant d'un choix judicieux et adapté de protocole d'acquisition puis de reconstruction.
Conclusions: Cet exposé a pour but d'apporter des solutions aux problèmes auxquels nous pouvons être confrontés lors de la réalisation d'un SCC.
Mots-clés: scanner cardiaque et coronarien, score calcique, le luminogramme des artères coronaires.

How to perform a cardiac computed tomography (CT) and a coronary CT angiography?

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Introduction: Thanks to its high diagnostic performance, cardiac computed tomography with coronary CT angiography, also known as coronary computed tomography angiography (CCTA), has become one of the commonly used methods of investigation in cardiac pathology. In fact, it represents the only complete, non-invasive examination that assesses both the cardiac anatomy and the extent of coronary artery disease.
Content: The presentation reviews several techniques available to us. Initially, an acquisition without injection of contrast medium will allow the calculation of the calcium score which has emerged as the most powerful predictor of coronary events in asymptomatic patients. At a second step, the injection of contrast medium will allow us to study in a precise way, the luminogram of the coronary arteries using different means of reconstruction. The technique has a negative predictive value over 90%, allowing to avoid performing coronary angiography for diagnostic purposes. However, despite its very rapid progress in recent years, the technique has many limitations. Most of these limitations are related to the patient's status (weight, heart rate, arrhythmia, cooperation, etc), and can be minimized by patient selection in order to increase the benefit from the investigation. Secondly, we will have to have a «good condition of the patient» for the success of the examination. This involves adjusting the parameters related to the physiology of the patient, and those related to the employed technique and adapted protocols for image acquisition and reconstruction.
Conclusions: The presentation provides a variety of explanations and solutions to the potential problems we may face when performing the investigation.
Keywords: cardiac computed tomography, coronary CT angiography, calcium score, coronary artery luminogram.

Les défis de l'imagerie hépatique et pancréatique

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Introduction: Les pathologies hépatobiliaires et pancréatiques sont relativement fréquentes et continuent à présenter divers défis diagnostiques**.**
Contenu: Les caractéristiques d'imagerie des lésions hépatiques et pancréatiques seront examinées en mettant l'accent sur les résultats de l'imagerie par résonance magnétique (IRM) et de la tomodensitométrie (TDM). Les cas cliniques seront utilisés comme exemples pour illustrer des présentations typiques et atypiques ainsi que des pièges courants et des défis diagnostiques. La première partie de la conférence est consacrée à la caractérisation par imagerie de diverses lésions hépatiques, en particulier dans le cadre clinique de la cirrhose du foie. Diagnostic différentiel de pathologies telles que nodules hépatiques régénératifs et dysplasiques, hyperplasie nodulaire focale (HNF), cholangiocarcinome intrahépatique, carcinome hépatocellulaire (CHC), échinococcus alvéolaire hépatique et kystes hydatiques, hémangiomes atypiques, métastases hépatiques. La deuxième partie de la conférence est consacrée à l'imagerie et aux caractéristiques démographiques des lésions kystiques pancréatiques courantes, y compris les pseudokystes, les cystadénomes séreux, les tumeurs kystiques mucineuses, les tumeurs intracanalaires papillaires mucineuses (IPMN), les tumeurs pseudopapillaires solides du pancréas etc. Des questions / réponses interactives avec le public seront également utilisées.
Conclusions: Les participants se familiariseront avec les caractéristiques de l'IRM et de l'imagerie CT des lésions hépatiques et pancréatiques, des pièges courants et des problèmes de diagnostic.
Mots-clés: cirrhose du foie, pathologie hépatique, lésions kystiques pancréatiques, provocations diagnostiques, imagerie par résonance magnétique, tomodensitométrie.

Challenges in hepatic and pancreatic imaging

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Background: Hepatobiliary and pancreatic pathologies are relatively common and continue to present a variety of diagnostic challenges.
Content: Imaging features of hepatic and pancreatic lesions will be reviewed with a special emphasis on magnetic resonance imaging (MRI) and computed tomography (CT) findings. Clinical cases will be used as examples to illustrate typical and atypical presentations as well as common pitfalls and diagnostic challenges. The first part of the lecture is dedicated to imaging characterization of various liver lesions, especially in the clinical setting of liver cirrhosis. Differential diagnosis of such pathologies as regenerative and dysplastic liver nodules, focal nodular hyperplasia (FNH), intrahepatic cholangiocarcinoma, hepatocellular carcinoma (HCC), hepatic echinococcus alveolaris and hydatid cysts, atypical hemangiomas, hepatic metastases are discussed. The second part of the lecture is dedicated to discussing imaging and demographic features of common pancreatic cystic lesions, including pseudocysts, serous cystadenomas, mucinous cystic tumours, intraductal papillary mucinous neoplasms (IPMN), solid pseudopapillary tumors, solid pseudopapillary tumours of the pancreas, etc. Interactive questions/answers with audience will be also used.
Conclusions: Attendees will increase their familiarity with MRI and CT imaging features of hepatic and pancreatic lesions, common pitfalls and diagnostic challenges.
Key words: liver cirrhosis, liver pathology, pancreatic cystic lesions, diagnostic challenges, magnetic resonance imaging, computed tomography.

IRM pour l'investigation de l'articulation du genou: algorithme d'interprétation

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Introduction: En tant que principale articulation portante, le genou est sujet à diverses blessures. En raison de son excellent contraste des tissus mous, l'imagerie par résonance magnétique (IRM) est de plus en plus utilisée comme outil diagnostique pour évaluer une variété de troubles musculo-squelettiques, le genou étant l'articulation la plus souvent examinée avec l'IRM. Une approche systématique liée aux protocoles d'imagerie et à l'interprétation de l'analyse est d'une importance primordiale dans cette situation.
Contenu: La présentation propose une approche systématique de l'IRM articulaire et concerne des aspects techniques et des protocoles d'imagerie, l'évaluation détaillée de toutes les structures du genou et l'algorithme recommandé pour l'évaluation de l'imagerie afin d'éviter les lésions manquantes, mauvaises interprétations, ainsi que la structuration du rapport final. Une variété d'images cliniques sont utilisées à titre d'illustration.
Conclusions: L'IRM a un grand potentiel pour une évaluation précise de l'articulation du genou et peut remplacer l'arthroscopie diagnostique chez de nombreux patients. Les participants vont s'élargir leur base de connaissances liées au potentiel de diagnostic de l'IRM articulaire du genou et à l'importance d'utiliser une approche systématique pour une interprétation correcte des résultats de l'étude.
Mots-clés: imagerie par résonance magnétique, articulation du genou, algorithme d'interprétation.

MRI for investigation of the knee joint: interpretation algorithm

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Background: As a major weight bearing joint, the knee is prone to a variety of injuries. Due to its excellent soft-tissue contrast, magnetic resonance imaging (MRI) is increasingly being used as a diagnostic tool to evaluate a variety of musculoskeletal disorders, the knee being the most frequently examined joint with MRI. A systematic approach related to the imaging protocols and scan interpretation are of paramount importance in this situation.
Content: The presentation proposes a systematic approach to the knee joint MRI and relates to such issues as technical aspects and imaging

protocols, detailed evaluation of all knee structures and recommended algorithm for imaging evaluation to avoid missing lesions, imaging aspects of commonly encountered pathology and potential misinterpretations, as well as structuring the final report. A variety of clinical images are used for illustration.
Conclusions: MRI has great potential for an accurate evaluation of the knee joint and can replace diagnostic arthroscopy in many patients. Attendees would expand their knowledge base related to the diagnostic potential of knee joint MRI and the importance of using a systematic approach for proper interpretation of the study results.
Key words: magnetic resonance imaging, knee joint, interpretation algorithm.

Rôle de l'IRM 3T renforcée par l'acide gadoxétique et diffusion dans le diagnostic des nodules hépatiques

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Introduction: La capacité multiparamétrique et l'imagerie par résonance magnétique (IRM) 3T à haute résolution jouent un rôle clé dans la caractérisation non invasive des lésions hépatiques focales (LHF). Certaines LHF ont des caractéristiques atypiques. De nouvelles techniques telles que les séquences à diffusion pondérée et les agents de contraste spécifiques aux hépatocytes sont actuellement utilisées en pratique clinique pour améliorer la détection et la caractérisation des LHF. L'étude visait à valider un protocole d'imagerie hépatique de haute qualité en utilisant une IRM à haute résolution combinée à un milieu de contraste spécifique à la diffusion et à l'hépatocyte pour le diagnostic de la LHF.
Matériel et méthodes: 110 patients hépatiques ont été étudiés en utilisant une IRM à haute résolution de 3T (Phillips Ingenia) en utilisant une bobine de matrice en phase de corps. Le protocole inclue les séquences Dixon-all T1, T2, SPAIR et de diffusion. L'IRM améliorée a supposé l'utilisation des séquences Dixon-T1 de l'acide gadoxétique (PRIMOVIST), y compris la phase hépatobiliaire à 20 minutes et 30 minutes.
Résultats: 65 patients ont été diagnostiqués avec précision des lésions bénignes, y compris les hémangiomes, les kystes, l'hyperplasie nodulaire focale et les adénomes. Parmi 45 lésions malignes, nous avons trouvé des métastases, un carcinome hépatocellulaire (CHC) et une pseudotumeur inflammatoire. Les lésions ont été suivies ou une pathologie a été obtenue.
Conclusions: L'IRM est capable de fournir des informations diagnostiques complètes et très précises, avec l'avantage supplémentaire de l'absence de rayonnements ionisants nocifs. Un protocole IRM de haute qualité pour le foie est également nécessaire pour établir un diagnostic correct.
Mots clés: lésions hépatiques focales, acide gadoxétique, IRM, séquences pondérées en diffusion.

Role of gadoxetic-acid enhanced 3T MRI and diffusion in liver nodules diagnosis

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Background: The multiparametric ability and high-resolution 3T magnetic resonance imaging (MRI) plays a key role in non-invasive characterization of focal liver lesions (FLL). Some FLL have atypical features. New techniques such as diffusion-weighted sequences and hepatocyte-specific contrast agents are being currently used in clinical practice improving the detection and characterization of FLL. The study aimed to validate a high-quality hepatic imaging protocol using high-resolution MRI combined with diffusion and hepatocyte-specific contrast media for FLL diagnosis.
Material and methods: 110 patients were liver investigated using a 3T high-resolution MRI (Phillips Ingenia) using body-phase array coil. The protocol included Dixon-all T1, T2, SPAIR and diffusion sequences. The enhanced MRI assumed the use of gadoxetic-acid (PRIMOVIST) Dixon-T1 sequences, including the hepatobiliary phase at 20 minutes and 30 minutes.
Results: 65 patients were accurately diagnosed with benign lesions, including hemangiomas, cysts, focal nodular hyperplasia and adenomas. Among 45 malignant lesions we found metastasis, hepatocellular carcinoma (HCC) and one inflammatory pseudotumor. The lesions were followed-up or pathology was obtained.
Conclusions: MRI is able to provide comprehensive and highly accurate diagnostic information, with the additional advantage of lack of harmful ionizing radiation. Also a high-quality liver MRI protocol is needed in order to establish a correct diagnosis.
Key words: focal liver lesions, gadoxetic-acid, magnetic resonance imaging, diffusion-weighted sequences.

Sténose de l'artère carotide chez les patients asymptomatiques: quand et quoi faire?

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Introduction: La sténose asymptomatique de l'artère carotide se réfère à la présence des lésions sténosées ou occlusives impliquant une artère carotide interne ou une bifurcation carotidienne chez des patients sans symptômes cliniques de maladie cérébrovasculaire. Elle survient habituellement chez les patients atteints d'athérosclérose systémique et les lésions coexistent dans plus d'un système artériel. En effet, chez la plupart des patients, les artères carotides sont atteintes quelques années plus tard que les artères coronaires. Comme les lésions carotidiennes peuvent être associées à des événements ischémiques non identifiés dans la circulation cérébrale, leur prise en charge chez des patients asymptomatiques pose de nombreux défis.
Contenu: La conférence aborde diverses modalités et critères utilisés pour identifier les patients à haut risque présentant une sténose de l'artère carotide asymptomatique pouvant nécessiter des interventions. Celles-ci concernent la détection des plaques athérosclérotiques instables à l'échographie carotidienne, la détection des microembolies par Doppler transcrânien, la réduction de la réserve cérébrale sanguine, la détection des infarctus cérébraux emboliques silencieux à l'examen tomodensitométrique ou IRM, l'identification hémorragique de la plaque athéromateuse à l'IRM ou la progression de la sténose de l'artère carotide. Une brève revue de la littérature est également fournie.
Conclusions: La plupart des recommandations indiquent une revascularisation chez les patients asymptomatiques présentant une sténose de l'artère carotide de 60% à 99%, à condition que le risque périopératoire d'accident vasculaire cérébral, d'infarctus du myocarde ou de décès soit inférieur à 3%. L'évaluation du risque est effectuée sur une base individuelle et comprend généralement une variété de facteurs, y compris la sévérité de la sténose carotidienne et sa progression, les caractéristiques morphologiques de la plaque sténosée, la présence d'emboles asymptomatiques, l'évaluation de la réserve cérébrale et les comorbidités du patient.
Mots-clés: sténose de l'artère carotide asymptomatique, hémorragie de la plaque athérosclérotique, Doppler transcrânien, microembolie de l'artère carotide, réserve de débit sanguin cérébral réduite.

Carotid artery stenosis in asymptomatic patients: when and what should be done?

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Background: Asymptomatic carotid artery stenosis refers to the presence of stenotic or occlusive lesions involving internal carotid artery or carotid bifurcation in patients without clinical symptoms of cerebrovascular disease. It usually occurs in patients with systemic atherosclerosis and the lesions coexist in more than one arterial system. As a matter of fact, in most patients the carotid arteries become affected a few years later than the coronary arteries. As the carotid lesions may be associated with unheralded ischemic events in the cerebral circulation, their management in asymptomatic patients is posing a variety of challenges.
Content: The lecture discusses various modalities and criteria used to identify high risk patients with asymptomatic carotid artery stenosis that may require interventions. These refer to detection of unstable atherosclerotic plaques on carotid ultrasound exam, detection of microemboli by transcranial Doppler, reduced cerebral blood flow reserve, detection of silent embolic cerebral infarctions on CT or MRI exam, hemorrhage identification within the atherosclerotic plaque on MRI exam or progression of the carotid artery stenosis. A brief literature review is also provided.
Conclusions: Most guidelines recommend revascularization in asymptomatic patients with carotid artery stenosis from 60% to 99%, provided the perioperative risk of stroke, myocardial infarction or death is less than 3%. The risk evaluation is performed on individual basis and commonly includes a variety of factors, including the severity of carotid artery stenosis and its progression, morphologic characteristics of the stenotic plaque, presence of asymptomatic emboli, cerebral blood flow reserve assessment and patient's comorbidities.
Key words: asymptomatic carotid artery stenosis, atherosclerotic plaque hemorrhage, transcranial Doppler, carotid artery microemboli, reduced cerebral blood flow reserve.

L'utilité du concept d'échographie mammaire complète dans le diagnostic du cancer du sein sans masse développée

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Introduction : Le terme «Non-Mass-Like Enhancement/Le rehaussement sans masse» est utilisé dans l'imagerie par la Résonance Magnétique mammaire (IRM) avec une sensibilité de 40,5% ; en Mammographie, certains cancers ne sont pas saillants (pas d'opacités, de spicules ou de microcalcifications), ou présentent des distorsions architecturales non spécifiques (zones de convergence ou rétractions locales à la frontière de la glande). Les rapports de l'Histopathologie évaluent les lésions bénignes jusqu'à 1/2 cas dans les patients symptomatiques et jusqu'à ¾ chez les asymptomatiques. Nous illustrons une évaluation comparative du cancer du sein sans masse (NMLBC) en utilisant les techniques d'imagerie disponibles de nos jours, y compris le dernier concept d'Echographie mammaire complète (FBU), représenté par la triade : le balayage radial anatomique du sein entier, le Doppler et la Sono-élastographie (SE).
Matériel et méthodes : Nous présentons une analyse rétrospective de 1716 FBU impliquant 1090 patients, (Février 2015-Février 2018), réalisée dans deux Laboratoires d'Ultrasons privés. Les résultats ont été reliés aux rapports histopathologiques ou à l'aspect bénin stable aux examens de contrôle pendant 1 ou 2 ans.
Résultats : La FBU a détecté 54 cancers évalués selon US BI-RADS dans les catégories 4, 5 ou 6, dont 10 cas de NMLBC, avec une sensibilité et une spécificité de 100%, à partir des cancers de moins de 5 mm aux cancers multifocaux, lobaires et diffuses avec des métastases d'origine inconnue, avec des Mammographies false-négatives et une évaluation IRM incertaine
Conclusions: Les lésions bénignes sans-masse ont été plus fréquemment détectées par FBU que par l'évaluation classique, généralement multiples chez la même patiente et avec une incidence réelle pratiquement non calculée en raison de l'absence d'une étude prospective. Les cas de cancer sans-masse NMLBC ont été détectés par FBU, qui a permis une biopsie ciblée.
Mots-clés: rehaussement sans masse, cancer du sein, échographie.

The usefulness of the full breast ultrasonography concept in the diagnosis of the non-mass-like breast cancer

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Background: The term "Non-Mass-Like Enhancement" is used in breast Magnetic Resonance Imaging (MRI) with a sensitivity of 40,5%; in Mammography some cancers are either not salient (no opacities, spicules or microcalcifications), or present unspecific architectural distortions (convergence areas or local retractions at the border of the gland). Pathology reports assess benign lesions in up to 1/2 cases in symptomatic and ¾ cases in asymptomatic patients. We illustrate a comparative evaluation of the Non-Mass-Like Breast Cancer (NMLBC) using the imaging techniques available nowadays, including the latest concept of Full Breast Ultrasonography (FBU), represented by the triad: anatomical radial scanning of the whole breast, Doppler and strain Sonoelastography (SE).
Material and methods: We present a retrospective analysis of 1716 FBU involving 1090 patients, (February 2015-February 2018), performed in two private Ultrasound Laboratories. The results were related to the pathological reports or to the stable benign aspect at 1-2-year follow-up examinations.
Results: The FBU detected 54 cancers assessed US BI-RADS 4, 5 and 6 categories, from which 10 cases of NMLBC, with a sensibility and specificity of 100%, from the less 5mm cancers to the multifocal, lobar and diffuse cancers usually referred with metastases of unknown origin, with false-negative Mammograms and uncertain MRI evaluation.
Conclusions: The benign Non-Mass-Like lesions were more frequently detected by FBU than the classical evaluation, usually multiple in the same patient and with real incidence practically uncalculated due the absence of a prospective study. The NMLBC cases were detected by FBU that allowed targeted biopsy.
Key words: non-mass-like enhancement, breast cancer, ultrasonography.

Une nouvelle approche: l'intégration de 3D Doppler et de la Sono-élastographie strain dans l'Echographie du pelvis féminin

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Les objectives: Illustration des aspects anatomiques et physiologiques variées du pelvis féminin en utilisant l'Echographie multi planaire complétée avec le *Doppler spectral et couleur 3D* et de la *Sono-Elastographie strain (SE),* intégration appelée *l'Echographie Gynécologique Complète ("Full Gynecological Ultrasonography"-FGU);* l'évaluation de cette technique dans le diagnostic non-invasif de l' infertilité et dans le diagnostic différentiel des lésions bénignes et malignes du pelvis féminin.
Matériel et méthodes: Une analyse rétrospective des 344 patientes consécutive appartenant aux services d'Endocrinologie, Gynécologie et Oncologie, âgées 16–81 années, examinées durant Août 2014 – Déc. 2017 dans le Laboratoire d'Echographie de Pan Med de Craiova. Nous avons utilisé un transducteur transabdominal convexe 4D et un transducteur transvaginal avec SE et software 3D Doppler. Les résultats ont été reliés avec les rapports cliniques, biologiques et histopathologiques.
Résultats: Pour l'évaluation de l'infertilité le Doppler a démontré des corrélations significatives de la dysfonction ovarienne (cycles anovulatoires, apoptoses, tumeurs) avec l'aspect utérine (le volume et la morphologie de l'utérus, l'épaisseur de l'endomètre, la cartographie et la vélocimétrie des artères utérines). FGU a été utile dans la détection et le suivi du cancer endométrial, du récidive de cancer cervical, des fibromes utérins avant et post embolisation des artères utérines, du cancer ovarien, des endométrioses etc.
Conclusions : FGU a accru la précision de diagnostic de l'Echographie dans le cas des affections malignes du pelvis féminin en éliminant les biopsies inutiles ; le monitoire de cycle menstruel a été plus précis que les tests hormonaux. FGU a permis la corrélation des données morphologiques avec ceux fonctionnels, n'importe l'âge, avec une application spéciale dans les affections endocrines, la fertilité assistée, la suivie post-embolisation, avec le meilleur rapport coût/bénéfice en comparaison avec le scanner avec contraste et l'IRM.
Mots-clés: Pelvis féminin, Doppler, Sono-Elastographie.

A new approach: 3D Doppler and strain sonoelastography integration in the female pelvis ultrasonography

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Objectives: Illustration of various anatomical-physiological and pathological aspects of the female pelvis using the multiplanar Ultrasonography completed with spectral and 3D Doppler and strain Sonoelastography (SE), integration named "Full Gynecological Ultrasonography" (FGU); evaluation of this technique in the non-invasive diagnosis of infertility and in the differential diagnosis of benign from malignant female pelvis.
Material and methods: A retrospective analysis of 344 consecutive patients referred from Endocrine, Gynecological or Oncological Services, aged 16 – 81-year-old, examined between August 2014 – December 2017 in the Ultrasound Laboratory of Pan Med Craiova. We used a transabdominal convex 4D probe and a transvaginal probe with SE and 3D Doppler software. The results were related to the clinical, biological and pathological reports.
Results: In the infertility evaluation the Doppler presented significant correlations of the ovarian disfunction (anovulatory cycles, apoptosis, tumors) with the uterine aspect (uterus volume and morphology, endometrial thickness, uterine arteries mapping and velocimetry). FGU was useful in detection and monitoring of the endometrial cancer, cervical stump recidivism, uterine fibroids before and after uterine artery embolization, ovarian carcinoma, endometrioma.
Conclusions: FGU increased the US accuracy in the diagnosis of female pelvic malignancies reducing the unnecessary biopsies; the monitoring of the menstrual cycle was more accurate than the hormonal tests. FGU allowed the coupling of the morphological with the functional data, whatever the age, with special application in the endocrinological disorders, assisted fertility, post-embolization survey, with the best cost/benefit ratio as compared with contrast CT and MRI.
Key words: Female pelvis, Doppler, Sonoelastography.

Faux positifs résultats de l'élastographie en temps réel dans le diagnostic des lésions nodulaires thyroïdiennes

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Introduction: L'élastographie en temps réel est une méthode de diagnostic qui ajoute de la qualité dans le diagnostic des lésions nodulaires thyroïdiennes. La méta-analyse actuelle suggère une bonne performance diagnostique avec une spécificité générale de 80% et une sensibilité générale de 85%. La présente étude est une analyse rétrospective des causes les plus fréquentes de faux negatifs et faux positifs résultats rencontrés dans l'échographie thyroïdienne.
Matériel et méthodes: Nous avons analysé 433 des lésions nodulaires, opérés et évaluées par l'échographie de la thyroïde classique et l'élastographie, avec la même sonde linéaire, multifréquence, Hitachi Preirus machine, Hitachi Inc., Japon. Les résultats de l'échographie n'ont pas été communiqués au pathologiste. Une analyse rétrospective des résultats a été réalisée.
Résultats: Nous avons évalué 433 cas avec des nodules avec un volume moyen de 2,14 ml (allant de 0,78 ml à 10,45 ml). 134/433 cas ont été identifiés avec un cancer de la thyroïde, 251/434 étant bénignes. La sensibilité de l'élastographie était de 82,02%, la spécificité de 83,94%, la précision de 83,37%. Nous avons observé 48 cas de lésions bénignes, identifiées par l'élastographie comme des lésions suspectes – 23/48 lésions avec de cellules Hürthle, sans maladies vasculaires, 8/48 lésions prolifératives potentiellement incertaines, 5/48 prolifération folliculaire, 8/48 thyroïdite myxomateuse / granulomateuse et 12/48 cas de maladie thyroïdienne auto-immune.
Nous avons également noté 24 résultats faussement négatifs: 19/24T microcarcinomes papillaires, 5/25 carcinomes folliculaires. Être mentionné que les microcarcinomes qui ont été observés dans les nodules, ont de diamètres supérieurs à 3,5 cm.
Conclusions: Les proliférations de cellules Hürthle et les microcarcinomes papillaires sont les conditions pour faux diagnostic le plus fréquent chez l'élastographie de la thyroïde.
Mots-clés: l'échographie de la thyroïde classique et l'élastographie, lésions nodulaires thyroïdiennes.

False positive results of real-time elastography in the diagnosis of thyroid nodal lesions

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Introduction: Real-time elastography is an imaging method that adds quality to the diagnosis of nodular thyroid lesions. Meta-analysis data suggest a good diagnostic performance with an overall specificity of 80% and sensitivity of 85%. The present study is a retrospective analysis of the most common causes of false negative and false positive results encountered in thyroid ultrasound.
Material and methods: We analyzed 433 nodular lesions, operated and evaluated by classical thyroid ultrasound and elastography, using a linear probe on a Hitachi Preirus machine, Hitachi Inc., Japan: The results of the ultrasound were not communicated to the pathologist. A retrospective analysis of the results was performed.
Results: We evaluated 433 thyroid nodules with an average volume of 2.14 ml (ranging from 0.78 ml to 10.45 ml). 134/433 cases were identified with thyroid cancer and 251/434 were identified as benign lesions. The sensitivity of the elastography was 82.02%, the specificity – 83.94%, the accuracy being 83.37%. We observed 48 cases of benign lesions, identified by elastography as suspicious lesions : 23/48 – lesions with Hürthle cells, without vascular diseases, 8/48 – proliferative lesions potentially uncertain, 5/48 – follicular proliferation, 8/48 – myxomatous / granulomatous thyroiditis and 12/48 cases of autoimmune thyroid disease. We also noted 24 false negative results: 19 / 24 – papillary microcarcinomas, 5/25 – follicular carcinomas. Of note is that microcarcinomas that have been observed in nodules, had > 3.5 cm in diameter.
Conclusions: Hurtle cell proliferations and papillary microcarcinomas are the most common misdiagnosed conditions in thyroid elastography.
Key words: classical thyroid ultrasound and elastography, nodal thyroid lesions.

IRM pondérée par diffusion sur tout le corps: place actuelle dans le workflow diagnostique

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Introduction: L'imagerie médicale moderne est représentée par un large éventail de modalités telles que la radiographie conventionnelle, la tomodensitométrie, l'imagerie par résonance magnétique et la médecine nucléaire – SPECT, SPECT / CT, TEP / TDM et TEP / IRM avec différents radiotraceurs. Chaque année, les fournisseurs publient de nouvelles versions d'équipements et de logiciels, élargissant ainsi nos capacités de diagnostic. D'autre part, la morbidité globale du cancer augmente dans le monde entier en raison de différents facteurs. C'est pourquoi nous avons besoin de quelques mises à jour sur la gestion des patients en radiologie et en médecine nucléaire et l'utilisation de nouvelles approches diagnostiques, telles que l'imagerie pondérée par diffusion du corps entier.
Contenu: La présentation reflète les capacités actuelles de l'IRM-DWI en cancerologie et parmi les maladies non cancerologiques, les principes techniques d'obtention d'images diagnostiques de bonne qualité en scantime acceptable, les indications d'exécution et la place de la méthode IRM-DWI dans un large éventail de modalités concurrentes de la radiologie et de la médecine nucléaire.
Conclusions: Avec les capacités techniques actuelles, l'IRM-DWI peut être utilisée en oncologie pour la stadification primaire N et M, le rétablissement et la surveillance des patients présentant les types de tumeurs malignes les plus courants sur un pied d'égalité avec le FDG-PET / CT. Avec l'aide de DWI, il est possible d'évaluer la réponse tumorale à la chimiothérapie plus tôt. L'IRM-DWI peut potentiellement remplacer la scintigraphie squelettique traditionnelle pour l'évaluation des lésions osseuses métastatiques, en tant que méthode non invasive non associée aux rayonnements ionisants. DWI pourrait être une technique prometteuse en rhumatologie dans l'évaluation de processus multiarticulaire ou étendu.
Mots-clés: imagerie par résonance magnétique, IRM pondérée par diffusion dans tout le corps.

Whole-Body Diffusion-Weighted MRI: Current Place in Diagnostic Workflow

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Background: Modern medical imaging is represented by a wide range of modalities such as conventional X-Ray, Computed Tomography, Magnetic Resonance Imaging, and Nuclear Medicine modalities – SPECT, SPECT/CT, PET/CT and PET/MRI with different radiotracers. Every year vendors release new versions of equipment and software, expanding our diagnostic capabilities. On the other hand, overall cancer morbidity grows worldwide due to different factors. That is why we need some updates about patient management in Radiology and Nuclear Medicine and usage of new diagnostic approaches, such as Whole-Body Diffusion Weighted Imaging.
Content: The presentation reflects the current capabilities of DWI-MRI in oncology and among non-oncological diseases, the technical principles of obtaining good quality diagnostic images in acceptable scantime, indications for carrying out, and the place of the DWI-MRI method in a wide range of competing modalities of radiology and nuclear medicine.
Conclusions: With current technical capabilities, DWI-MRI can be used in oncology for primary N- and M-staging, restaging and monitoring patients with most common types of malignant tumors on a par with FDG-PET/CT at comparable accuracy. With the help of DWI it is possible to evaluate the tumor response to chemotherapy at an earlier time. DWI-MRI can potentially replace traditional skeletal scintigraphy for the evaluation of metastatic bone lesions, as a non-invasive method not associated with ionizing radiation. DWI could be a promising technique in rheumatology in evaluation of multiarticular or extended process.
Key words: magnetic resonance imaging, whole-body diffusion-weighted MRI.

Le rôle de la médecine nucléaire dans la pratique clinique moderne

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Introduction: Bien que présente dans le monde de l'imagerie depuis quelques décennies, la médecine nucléaire en tant que modalité d'imagerie gagne encore en popularité. De nombreuses indications et utilisations des investigations spécifiques sont encore largement inconnues à la fois des spécialités cliniques et de la communauté de radiologie. La présentation vise à combler le fossé de la communication entre le travail clinique quotidien et la médecine nucléaire en passant en revue succinctement les types les plus importants de modalités de médecine nucléaire.
Contenu: La présentation passe en revue les indications, les principes et le rôle dans le diagnostic et le traitement des modalités suivantes: scintigraphie avec ses types d'investigation les plus utilisés (rénale, thyroïde, parathyroïdienne, myocardique, pulmonaire, osseuse et sentinelle), TEP-TDM avec ses indications les plus largement utilisées et les modalités de traitement par radionucléides avec les émetteurs alpha et bêta. Chaque fois que cela est possible, une illustration de cas est fournie par la bibliothèque numérique de Neolife Iaşi.
Conclusions: La médecine nucléaire joue un rôle important pour de nombreuses spécialités cliniques car elle fournit des outils pour la mise en place d'un diagnostic positif et différentiel, assure le traitement par elle-même et surveille l'efficacité de la thérapie dans de nombreuses conditions pathologiques.
Mots-clés: médecine nucléaire, imagerie hybride, thérapie par radionucléides, scintigraphie, PET-CT, imagerie médicale.

The role of nuclear medicine in modern clinical practice

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Background: Although present in the imaging world for a good few decades, nuclear medicine as an imaging modality is still gaining popularity. Many indications and uses of the specific investigations are still largely unknown to both the clinical specialties and the radiology community. The presentation aims to bridge the communication gap between everyday clinical work and nuclear medicine by succinctly reviewing the most important types of nuclear medicine modalities.
Content: The presentation reviews the indications, principles and role in diagnosis and treatment of the following modalities: scintigraphy with its mostly used investigation types (renal, thyroid, parathyroid, myocardial, pulmonary, bone scan, and sentinel node), PET-CT with its most widely used indications and radionuclide therapy modalities with alpha and beta emitters. Whenever possible, case illustration is provided from the digital library of Neolife Iaşi.
Conclusions: Nuclear medicine plays a valuable role for many clinical specialties as it provides tools for enacting positive and differential diagnosis, ensures treatment by itself and monitors therapy efficiency in many different pathological conditions.
Key words: nuclear medicine, hybrid imaging, radionuclide therapy, scintigraphy, PET-CT, medical imaging.

Imagerie par résonance magnétique dans le cancer de la prostate

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Introduction: Le cancer de la prostate est un problème majeur en urologie et nécessite une attention particulière pour le diagnostic précoce par l'imagerie. À l'heure actuelle, l'imagerie par résonance magnétique (IRM), basée sur les critères PIRADS, est la norme d'imagerie de pointe.
Contenu: PIRADS – Qu'est-ce que cela signifie et quels composants importants sont inclus dans ce système? Nous discuterons de la méthodologie IRM et des exigences obligatoires pour le balayage de la prostate multi-paramétrique et bi-paramétrique selon les dernières directives des sociétés européennes et américaines. L'imagerie de l'anatomie de la prostate, la terminologie appropriée et les critères d'interprétation seront présentés avec une discussion basée sur les cas. Certains pièges et fausses interprétations fréquentes seront mis en évidence.
Conclusions: Les participants connaîtront les fonctions IRM PIRADS, les pièges courants et les défis diagnostiques.
Mots-clés: cancer de la prostate, imagerie par résonance magnétique.

Magnetic resonance imaging in prostate cancer

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Background: Prostate cancer is a major problem in urology and requires focused attention for early imaging diagnosis. At the moment, magnetic resonance imaging (MRI) based upon PIRADS criteria is the state-of-the-art imaging standard.
Content: PIRADS – what it means and what important components are included in this system? We will discuss MRI methodology and obligatory requirements for multi-parametric and bi-parametric prostate scanning according to the last European & US societies guidelines. Imaging prostate anatomy, appropriate terminology and interpretation criteria will be presented with case-based discussion. Some frequent pitfalls and misinterpretations will be highlighted.
Conclusions: Attendees will get familiar with MRI PIRADS imaging features, common pitfalls and diagnostic challenges.
Key words: prostate cancer, magnetic resonance imaging.

Le rôle de l'imagerie par résonance magnétique dans l'endométriose pelvienne profonde

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Introduction: L'endométriose, y compris sa forme pelvienne profonde, est un problème majeur lié à la gynécologie et à la fertilité qui touche un large éventail de jeunes femmes fertiles à travers le monde. L'imagerie par résonance magnétique (IRM) est une modalité non invasive de dernière intention qui peut aider au diagnostic et à l'évaluation de la propagation de la maladie avant la laparoscopie.
Contenu: Des séquences d'IRM appropriées et des stratégies de planification pour une évaluation adéquate des structures pelviennes seront démontrées. L'échographie de l'endométriose pelvienne profonde et les caractéristiques de l'imagerie par résonance magnétique seront examinées en mettant l'accent sur les régions ciblées. Quelques conseils et astuces seront présentés pour augmenter la perception du radiologue et améliorer l'interprétation adéquate dans les cas suspects d'endométriose pelvienne profonde. Les cas cliniques seront utilisés comme exemples pour illustrer des présentations typiques et atypiques ainsi que des pièges courants et des défis diagnostiques.
Conclusions: Les participants vont augmenter leur familiarité avec les caractéristiques IRM de l'endométriose pelvienne profonde, les pièges communs et les défis diagnostiques.
Mots-clés: endométriose pelvienne profonde, imagerie par résonance magnétique, imagerie de l'endométriose, présentations typiques et atypiques de l'endométriose.

The role of magnetic resonance imaging in deep pelvic endometriosis

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Background: Endometriosis, including its deep pelvic form is a major gynecological and fertility related problem that involves a wide range of young fertile women worldwide. Magnetic resonance imaging (MRI) is a last-line non-invasive modality that may help in diagnosis and disease spread assessment before laparoscopy.
Content: Appropriate MRI sequences and planning strategies for adequate pelvis structures evaluation will be demonstrated. Deep pelvic endometriosis ultrasound and magnetic resonance imaging features will be reviewed with a special emphasis on targeted regions. Some tips and tricks will be presented to increase radiologist's perception and improve adequate interpretation in suspected deep pelvic endometriosis findings. Clinical cases will be used as examples to illustrate typical and atypical presentations as well as common pitfalls and diagnostic challenges.
Conclusions: Attendees will increase their familiarity with MRI features of deep pelvic endometriosis, common pitfalls and diagnostic challenges.
Key words: deep pelvic endometriosis, magnetic resonance imaging, endometriosis imaging, typical and atypical presentations of endometriosis.

Imagerie par résonance magnétique dans le cancer du rectum

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Introduction: Une planification appropriée du cancer du rectum est cruciale pour une planification réussie du traitement chirurgical et radiologique, et l'IRM est considérée comme la modalité de pointe pour atteindre cet objectif.
Contenu: Les caractéristiques de l'imagerie du cancer du rectum seront examinées en mettant l'accent sur la méthodologie de l'imagerie par résonance magnétique (IRM). La stadification du TNM par cancer du rectum sera présentée avec la démonstration de cas cliniques en tant qu'exemples illustrant la participation des couches mésorectales de graisse et de couches fasciales mésorectales, ainsi que les pièges courants et les défis diagnostiques pouvant survenir et influencer les stratégies de traitement. Les points culminants sur l'implication nodale et l'invasion veineuse extra-muros seront brièvement discutés. Enfin, des recommandations pour l'évaluation des maladies récurrentes seront présentées.
Conclusions: Les participants amélioreront leur familiarité avec les fonctions d'imagerie par IRM de la stadification du cancer du rectum, des pièges courants et des problèmes de diagnostic.
Mots-clés: cancer rectal, imagerie par résonance magnétique, stadification TNM.

Magnetic resonance imaging in rectal cancer

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Background: Appropriate rectal cancer staging is crucial for successful surgical and radiation treatment planning and magnetic resonance imaging (MRI) is considered the state-of-the-art modality for achieving this goal.
Content: Rectal cancer imaging features will be reviewed with main emphasis on magnetic resonance imaging (MRI) methodology. Rectal cancer TNM based staging will be presented with demonstration of clinical cases as examples to illustrate mesorectal fat and mesorectal fascial layers involvement, as well as common pitfalls and diagnostic challenges that may occur and impact treatment strategies. Highlights on nodal involvement and extramural venous invasion will be briefly discussed. Finally, recommendations for recurrent disease evaluation will be presented.
Conclusions: Attendees will increase their familiarity with MRI imaging features of rectal cancer staging, common pitfalls and diagnostic challenges.
Key words: rectal cancer, magnetic resonance imaging, TNM staging.

Évaluation quantitative de la stéatose hépatique à l'aide d'une séquence spectroscopique – corrélation entre la Spectroscopie par Résonance Magnétique et l'histopathologie

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Introduction: La stéatose hépatique entraîne l'accumulation des lipides dans les hépatocytes. La tomographie computerisée (CT) et l'échographie (US) peuvent évaluer qualitativement la graisse du foie. La technique d'imagerie la plus précise en termes de quantification de la stéatose hépatique est la Spectroscopie par Résonance Magnétique (MRS). L'objectif de l'étude était de valider le rôle de MRS 3T dans l'évaluation quantitative de la stéatose hépatique.
Matériel et méthodes: Le foie de 33 patients a été évalué qualitativement par des tests de laboratoire et d'échographie. Tous les patients ont été étudiés avec une 3T haute résolution IRM, constituée de séquences en phase, déphasées et de séquences spécifiques pour la steatose en T1 pondérées, ainsi que des séquences en T2 pondérées et de séquences de spectroscopie. L'évaluation qualitative a été réalisée en utilisant la fraction de graisse calculée manuellement après l'analyse par spectroscopie. La stéatose a été classée 0 = jusqu'à 10%, grade 1 = 10-33%, grade 2 = 34-66%, grade 3 = ≥67%. La biopsie hépatique a été réalisée chez des patients opérés pour différentes pathologies.
Résultats: Limitée par un petit nombre de patients et par les manoeuvres chirurgicales invasives de la biopsie hépatique, l'étude montre que cinq patients présentaient une stéatose classée en grade 0, treize – en grade 1, six – en grade 2 et un – en grade 3, offrant une bonne corrélation entre MRS et histopathologie.
Conclusions: En dépit d'être une étude pilote, nous pouvons conclure que MRS est une technique non invasive efficace qui peut être extrêmement utile dans le diagnostic et la quantification de la stéatose hépatique.
Mots-clés: spectroscopie par résonance magnétique, stéatose hépatique.

Quantitative evaluation of fatty liver using spectroscopic sequence – correlation between Magnetic Resonance Spectroscopy and histopathology

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Background: Hepatic steatosis results in the accumulation of lipids within hepatocytes. Computed Tomography (CT) and Ultrasound (US) can qualitatively assess liver fat. The most accurate imaging technique in terms of quantifying hepatic steatosis is Magnetic Resonance Spectroscopy (MRS). The study aimed to validate the role of 3T MRS in quantitative assessment of liver steatosis.
Material and methods: The liver of 33 patients was qualitatively assessed through lab and ultrasound tests. All patients were investigated with a 3T high resolution MRI consisting of T1 weighted sequences with in-phase, out-of-phase and fat specific phases and also T2 weighted and spectroscopy sequences. The qualitative assessment was carried out using the fat fraction calculated manually after spectroscopy computer analysis. The steatosis was graded as grade 0 = up to 10%, grade 1 = 10-33%, grade 2 = 34-66%, grade 3 = ≥ 67%. Liver biopsy was performed in patients who underwent surgery for different pathologies.
Results: Limited by a small number of patients and surgical invasiveness of liver biopsy, the study shows that five patients had grade 0 steatosis, thirteen had grade 1, six patients – grade 2 and one patient – grade 3, offering a good correlation between MRS and histopathology.
Conclusions: Despite being a pilot study, we can conclude that MRS is an effective noninvasive technique that can be extremely useful in diagnosing and quantifying hepatic steatosis.
Key words: magnetic resonance spectroscopy, liver steatosis.

Le rôle de l'angioscanner coronaire dans l'évaluation de la maladie coronarienne

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Introduction: Le scanner cardiaque est couramment pratiqué pour acquérir des connaissances sur l'anatomie cardiaque ou coronaire, pour détecter ou diagnostiquer une coronaropathie, pour évaluer la perméabilité des pontages coronaires ou des stents coronaires implantés ou pour évaluer la fonction volumétrique et cardiaque (y compris la fraction d'éjection).
Contenu: La présentation discute des possibilités du scanner cardiaque dans le diagnostic de la maladie coronarienne, y compris l'évaluation de la perméabilité du pontage coronarien et le diagnostic de la resténose intra-stent. La littérature disponible sur l'angiographie coronarienne sera examinée et plusieurs cas seront utilisés comme exemples pour illustrer l'approche d'imagerie de la coronaropathie, de l'anatomie cardiaque et coronaire. Des questions / réponses interactives avec le public seront utilisées pour évaluer la bonne exécution des objectifs. En particulier, le public sera invité à donner son opinion sur plusieurs cas et les réponses seront discutées pendant la conférence.
Conclusions: Les participants seront familiers avec les indications, les possibilités et les limites de l'angioscanner coronaire.
Mots-clés: la maladie coronarienne, la tomodensitométrie, l'angioscanner coronaire.

The role of CT coronary angiography in the evaluation of coronary artery disease

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Background*:* Cardiac CT is routinely performed to gain knowledge about cardiac or coronary anatomy, to detect or diagnose coronary artery disease, to evaluate patency of coronary artery bypass grafts or implanted coronary stents or to evaluate volumetry and cardiac function (including ejection fraction).
Content*:* The presentation discusses the possibilities of cardiac CT in diagnosis of coronary artery disease, including the evaluation of coronary bypass graft patency and the diagnosis of in-stent restenosis. Available literature on coronary angiography CT will be reviewed and several cases will be used as examples to illustrate the imaging approach to coronary artery disease, cardiac and coronary anatomy. Interactive questions/answers with audience will be used to assess the proper delivery of the objectives. In particular the audience will be asked an opinion on multiple cases and the answers will be discussed during the lecture.
Conclusions*:* Attendees will be familiar with indications, possibilities and limitations of CT coronary angiography.
Key words: coronary artery disease, computed tomography, CT coronary angiography.

Reconnaissance TDM de la dissection aortique aiguë

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Introduction: La dissection aortique aiguë est une urgence cardiovasculaire qui nécessite un diagnostic et un traitement rapides. La tomodensitométrie hélicoïdale permet le diagnostic de la dissection aortique aiguë avec une sensibilité et une spécificité de près de 100%.
Contenu: La présentation traite du rôle de la TDM dans le diagnostic et la prise en charge de la dissection aortique et des complications associées. La littérature disponible sur l'aortographie tomodensitométrique sera revue et plusieurs cas seront utilisés comme exemples pour illustrer l'approche d'imagerie de la dissection aiguë de l'aorte. Des questions / réponses interactives avec le public seront utilisées pour évaluer la bonne exécution des objectifs. En particulier, le public sera invité à donner son opinion sur plusieurs cas et les réponses seront discutées pendant le congres.
Conclusions: Les participants seront en mesure d'identifier les caractéristiques hélicoïdales de la dissection aortique, les hématomes intramuraux, les ulcères athérosclérotiques pénétrentes et être familier avec les changements qui se produisent pendant le suivi de la dissection aortique.
Mots-clés: dissection aortique, ulcères athérosclérotiques pénétrants, tomodensitométrie.

CT recognition of acute aortic dissection

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Background*:* Acute aortic dissection is a cardiovascular emergency that requires prompt diagnosis and treatment. Helical computed tomography (CT) allows diagnosis of acute aortic dissection with a sensitivity and specificity of nearly 100%.
Content*:* The presentation discusses the role of CT with arterial contrast enhancement in the diagnosis and management of aortic dissection and related complications. Available literature on CT aortography will be reviewed and several cases will be used as examples to illustrate the imaging approach of acute aortic dissection. Interactive questions/answers with audience will be used to assess the proper delivery of the objectives. In particular the audience will be asked an opinion on multiple cases and the answers will be discussed during the lecture.
Conclusions*:* Attendees will be able to identify the helical CT features of aortic dissection, intramural hematomas, penetrating atherosclerotic ulcers and be familiar with the changes that occur during the follow-up of aortic dissection.
Key words: aortic dissection, penetrating atherosclerotic ulcers, computed tomography.

The role of ultrasound in the prognosis of adverse perinatal outcome in fetuses with intrauterine growth restriction

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Background: Doppler ultrasound may indicate poor fetal prognosis by detecting abnormal blood flow waveforms. The study aimed to evaluate the Doppler ultrasound assessment on umbilical artery (UA) and middle cerebral artery (MCA) as a predictive marker of perinatal outcome in fetuses with intrauterine growth restriction (IUGR).
Material and methods: A total of 126 IUGR pregnancies with a birth weight <10 percentiles were ultrasonographically evaluated. Doppler velocity in UA and MCA, was performed at 30.6-32.6 weeks of pregnancy. We considered adverse perinatal outcome: Apgar score ≤7 to 1 and 5 minutes, admission to the Department of Neonatal Intensive Care (NICU), gestational age <37 weeks at birth.
Results: In the abnormal Doppler group, the newborns weight was 7±1.51 percentile, Doppler anomaly (absent/reversed end diastolic flow, UA-PI>95 percentiles, cerebro-placental ratio <1) determined the Apgar score of 6±0.75/1 minute and 7±0.64/5 minutes, a gestational age at birth of 36.2±1.01 weeks (premature birth), an admission to the NICU of 30.15% for neonates. Comparatively, in the normal Doppler group, the newborns weight was 9±1.03 percentile, the Apgar score was 8±0.95/1 minute and 9±0.76/5 minutes, the gestational age at birth was 37.4±0.99 weeks and admission to the NICU was required in only 12.69% of neonates of this group.
Conclusions: Doppler antenatal monitoring may be a useful marker in the prognosis of perinatal evolution in fetuses with severe growth restriction.
Key words: intrauterine growth restriction, Doppler ultrasound, antenatal monitoring.

The diagnosis and follow-up of breast cancer in advanced pregnancy

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Background: Breast cancer is the most common form of cancer worldwide, with a high mortality rate. Romania ranks first in Europe in the incidence and mortality of breast cancer.
Content: The presentation highlights the principles of management of breast cancer in advanced pregnancy. The case of a 39-year-old woman, 32 weeks pregnant, taken to the emergency department for painful uterine contractions is also presented. General clinical examination revealed a palpable breast mass in the right breast with perilesional skin erythema and a bloody nipple discharge, raising the suspicion of Paget's disease of the breast. The breast ultrasound (US) described a hypoechogenic mass between the inferior breast quadrants. The diagnosis of invasive ductal carcinoma was sustained by elastography and established after ultrasound-guided breast biopsy. The caesarean delivery was performed (33-34 weeks) followed by bilateral ovariectomy. Subsequently, after neoadjuvant chemotherapy, the patient underwent Madden modified radical mastectomy and continued with chemotherapy and radiotherapy. Medical imaging provided valuable information for tumor staging and re-staging, guiding the treatment strategy as well as subsequent follow-up.
Conclusions: This case underlines the limited treatment options in pregnant women with oncological pathology and highlights the fine line between maternal health and child safety for ensuring the best outcome.
Key words: advanced pregnancy, breast cancer, ultrasound-guided breast biopsy, medical imaging.

A rare case of extrahepatic cholangiocarcinoma – a multidisciplinary approach

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Background: Bile duct carcinoma is an extremely aggressive and rare primary hepatobiliary malignancy affecting nearly 1-2/100,000 people in most countries in Europe. Biliary tract malignancies located in the distal third of the common bile duct (CBD) account for approximately 17-18% of all cholangiocarcinomas. This report aims to provide a step-by-step evaluation of a rare case of cholangiocarcinoma.
Content: The current report focuses on a 65-year-old male patient who was presented to the emergency department with signs and symptoms suggestive for a biliary tract obstruction. An intense cooperation between multiple departments was required in order to perform a complete and accurate evaluation of the patient. Initially, the patient underwent an abdominal Ultrasonography (US), followed by an abdominal and pelvic Computed Tomography (CT), which revealed an intraductal tumor affecting the distal CBD. Furthermore, the patient underwent an endoscopic retrograde cholangiopancreatography (ERCP) in order to provide tissue samples and to perform a dilatation of the CBD in the affected area. The histopathology report confirmed the malignant nature of the lesion describing it as an adenocarcinoma. The surgeons performed a pancreaticoduodenectomy (Whipple procedure), managing to achieve negative tumor resection margins. However, the patient developed several complications that required multiple surgical reinterventions.
Conclusions: This report presents a fully investigated less common type of cholangiocarcinoma, highlighting the principles of diagnosis and management as well as of a multidisciplinary approach in such patients.
Key words: cholangiocarcinoma, adenocarcinoma, pancreaticoduodenectomy.

Radioimaging aspects in knee degenerative pathology

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Background: Gonarthrosis represents one of the most frequent knee conditions, most commonly found in the 5th-6th life decades and not only, mainly in women, being the main cause of motoric disability in Europe, with a high impact on the social and economic status. The aim of the presentation is to aid the interdisciplinary team in interconnecting the imaging and clinical diagnosis of the osteo-articular system pathology.
Content: The presentation reviews the radioimaging aspects of knee degenerative pathology. The imaging findings of a 35-year-old patient, known with right femur-coxal congenital subluxation, secondary left gonarthrosis and motoric disability are also presented as an illustration. The imaging technique included the pangonogram (hip-knee-ankle), which is an x-ray of the entire lower limb in orthostatism.

The pangonogram allowed us to measure the hip-knee-ankle (HKA) angle, the internal mechanic alpha-femur angle, the Calton index – kneecap height, the beta – internal mechanic tibial angle and the gamma angle – tibial chute. Based on the imaging technique, there were highlighted changes in the bone structure of the left femural head, with a suspicious aspect of an aseptic necrosis, an internally curved tibia and peroneum on the left and secondary left gonarthrosis. The patient was admitted to the Orthopedics Department and underwent the necessary measurements for receiving a personalized knee prosthesis.

Conclusions: This presentation highlights the challenging presentations of gonarthrosis and the modern techniques of diagnosis and treatment.

Key words: gonarthrosis, osteo-articular system, motoric disability, imaging investigations.

SPECT myocardial perfusion imaging for the assessment of the quantity of viable myocardium

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Background: Assessment of viable myocardium (VM) is one of the most important indications in examination of patients with ischemic heart disease and systolic dysfunction of the left ventricle (LV) before planned surgical revascularization. There is a clear dependence of survival of patients with ischemic cardiomyopathy (ICMP) on the quantity of VM. One of the main methods for the assessment of VM is SPECT/SPECT-CT myocardial perfusion imaging. The study aimed to evaluate the role of diagnostic capabilities of SPECT/SPECT-CT myocardial perfusion imaging in the assessment of VM in patients with ICMP and LV ejection fraction (LVEF) <35%.

Material and methods: 48 patients with ICMP and LVEF <35% were examined. The age of the patients varied between 39 – 72 years, with an average of 52.5 ± 7.2 years. SPECT/SPECT CT myocardial perfusion imaging was performed on GE's gamma camera "Infinia Hawkeye" at rest with ECG synchronization. A radiopharmaceutical (RFP) of 99mTc-MIBI with an activity of 7.5 MBq / kg was used. The results of the SPECT/SPECT-CT myocardial perfusion imaging were assessed using a quantitative approach, polar maps, and a 17-segment myocardium model. VM was considered at levels of accumulation of RFP more than 50%. The software ECToolBox and Myovation were used for assessment.

Results: In right coronary artery – stenosis between 90-100%, the RFP absorption was 45.4 ± 12.7% ($p < 0.001$), while the VM was 66.2 ± 6.9%. In 90-100% stenosis in the basin of the right interventricular branch of the left coronary artery, the RFP absorption was 57.2 ± 13.6% ($p < 0.05$), VM – 54.8 ± 7.5%. In 90-100% stenosis in the basin of the envelope of the branch of the left coronary artery, the RFP absorption was 65.1 ± 9.7% ($p < 0.05$), VM – 58.9 ± 5.6%. In patients with lesions of two or three coronary arteries, the RFP absorption was 42.6 ± 9.4% ($p < 0.001$), while the VM was 35.3 ± 8.2%.

Conclusions: SPECT/SPECT-CT myocardial perfusion imaging is a highly informative, noninvasive technique for the assessment of the quantity of viable myocardium in patients with ICMP and low LVEF.

Key words: SPECT myocardial perfusion imaging, viable myocardium, ischemic cardiomyopathy.

Ultrasound assessment of normal adnexa torsion

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Background: Adnexal torsion is a common gynecologic emergency. The evolution of torsion is unpredictable from complete spontaneous detorsion (rarely) to rapid progression and necrosis. Persistence at the stage of edema for several days is also possible. Prompt diagnosis and surgery are important, particularly in young fertile patients to preserve ovarian viability. The purpose of this study was to evaluate the ultrasound features of normal adnexa torsion.

Material and methods: The study included 7 women of reproductive age (including 2 pregnant), referred for ultrasound assessment of clinically suspected adnexal torsion. Out of 7 patients, 6 underwent subsequent laparoscopy. Absence of any additional ovarian pathology was confirmed by both ultrasound and intraoperative inspection. The ultrasound description included ovarian volume, vascularization, ovarian stroma and parenchyma aspect, "whirlpool sign" and tubal edema.

Results: Out of 7 cases, 6 were operated on and the diagnosis was confirmed, including 2 detorsions. In one case spontaneous detorsion has occurred with complete regression of edema within 1 month. Two sonographic patterns of twisted ovaries were noted: (1) unilaterally enlarged ovary with peripherally displaced follicles – noted in 4 cases, including in 2 patients with over 48 hrs after onset of symptoms, and (2) solid-appearing heterogeneous mass with echogenic and/or hypoechoic areas – noted in 3 cases. The "whirlpool sign" was present in 3 patients and tubal edema was present in 1 patient with normal adnexa torsion. Blood flow in the affected ovary was completely absent in only 3 patients.

Conclusions: Ultrasound appearance of normal adnexa torsion may vary according to the duration of the condition. Recognition of different sonographic features of twisted normal adnexa may improve the diagnosis.

Key words: Adnexal torsion, ultrasound, spontaneous detorsion

Dual-energy Computed Tomography gemstone spectral imaging: new horizons in visualization and differentiation of kidney stones composition

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Background: Optimization of viewing tools and understanding the chemical composition of renal calculi become essential for choosing the best treatment strategy. In this study we aimed to assess the localization and chemical composition of renal stones using gemstone spectral imaging (GSI) color map mode on a single-source dual-energy computed tomography (CT).
Material and methods: A total of 45 urinary stones with an unknown chemical composition were imaged with a dual-energy CT scanner using special scanning protocols with different combinations of tube voltage and conventional polychromatic imaging. The mean attenuation value (in Hounsfield units) of each stone was recorded on both low- and high-energy CT images for each protocol. The dual-energy CT ratio of the mean attenuation value of each stone was computed for each protocol. The difference between the CT numbers obtained was compared among the stone groups.
Results: The obtained data enabled us to classify the urinary stones into 3 main groups: uric acid (n = 11), oxalate (n = 24) and phosphate (n = 10) stones. The estimated sensitivity and specificity of dual-energy CT for detecting uric acid stones was 98.0 and 99.2%, calcium stones – 95.1% and 97%; and mixed stones – 93.0% and 94.5% accordingly.
Conclusions: Single-source dual-energy CT with GSI represents a perspective modality for evaluating the characteristics and chemical composition of urinary stones. The CT results were consistent with the spectral data, suggesting that spectral CT imaging techniques can be accurately used to improve the stone differentiation capability of dual-energy CT imaging.
Key words: dual-energy CT, kidney stones, spectrum optimization.

What makes the difference: revealing the neuroanatomical correlates of nocturnal and diurnal seizures

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Background: Presentation of epileptic seizures throughout the day is a non-random phenomenon that is strongly dependent on neural synchronization of locally and distantly interconnected cortical and/or subcortical networks. Here we aimed to identify the structural correlates that underlie the propensity of seizures to occur during the night- and daytime.
Material and methods: We performed brain magnetic resonance imaging (MRI) at a 3Tesla scanner in 13 patients (28 ± 9 years) with nocturnal seizures, in 12 patients (26 ± 9 years) with diurnal seizures and in 10 healthy controls (28 ± 4 years) in order to compute the cortical and subcortical volumes by using FreeSurfer processing stream.
Results: Patients with nocturnal seizures showed greater volumes of bilateral insula, superior temporal and orbitofrontal cortices compared to those with diurnal seizures. When compared to healthy controls, patients with nocturnal seizures showed smaller volumes of left postcentral and right middle temporal cortices. Patients with diurnal seizures in comparison to healthy controls displayed reduced cortical volumes mainly in frontal, temporal and parietal lobe regions of the right hemisphere. Patients with nocturnal seizures showed larger volumes of hippocampus (8208.6 ± 1006.1 mm^3) than patients with diurnal seizures (3859.1 ± 508.1 mm^3, $p = 0.02$) as well as larger volumes of amygdala (1797.3 ± 323.2 mm^3 vs 1500.5 ± 246.2 mm^3, $p = 0.03$).
Conclusions: Epileptic seizures in patients with nocturnal seizures and diurnal seizures are related to distinct neuromorphological correlates that could be regarded as potential substrates favoring the generation of seizures during the night- or daytime.
Key words: neuroanatomical correlates, nocturnal seizures, diurnal seizures.

Brain structural integrity alterations in epilepsy with myoclonic seizures

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Background. Recurrent myoclonic seizures are associated with morphological changes in brain regions, engaging cortical as well as subcortical structures. The purpose of this study was to characterize the abnormalities of brain structural integrity in epilepsy patients with myoclonic seizures.

Material and methods. Surface-based morphometry was applied to process the 3T brain magnetic resonance images acquired in 11 epilepsy patients (mean age ± standard deviation: 24 ± 6 years; 3 males) with myoclonic seizures and 11 healthy controls (28 ± 4 years; 6 males) and quantify the cortex thickness and subcortical volumes.

Results. Patients with myoclonic seizures in contrast to healthy controls showed significant cortical thickness alterations in left postcentral, and bilateral rostral middle frontal and supramarginal cortices ($p < 0.001$, uncorrected). Cortical thickness correlated with patients‘ disease duration in left superior, middle and inferior temporal, and inferior parietal and right supramarginal, inferior parietal and rostral anterior cingulate cortices. Volumetric analysis of subcortical structures disclosed significantly lower ($p = 0.014$, $p = 0.001$) thalamic volumes (right 7078.5 ± 508.7 / left 7804.1 ± 737.4 mm^3) in patients compared to healthy controls (right 8155.9 ± 702.1/left 9168.1 ± 1442.5 mm^3).

Conclusions. These findings evidence clear widespread abnormalities of brain structural integrity linked to myoclonic seizures and represent the neuroanatomical fingerprints that potentially underlie the generation of this seizure type.

Key words: myoclonic seizures, cortical thickness, thalamic volume.

Portal hemodynamics disorders severity scoring by Doppler ultrasound in liver cirrhosis

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Background: Splenoportal hemodynamics assessment in portal hypertension syndrome is a well-known problem, due to the high incidence of this pathology and associated complications. The accuracy of employed diagnostic methods is of paramount importance as early diagnosis and appropriate management can certainly improve the prognosis and life expectancy of these patients. The study aim was to identify reliable Doppler measurements for developing a scoring system of portal flow alteration severity in liver cirrhosis and classification of these disturbances.

Material and methods: The study included 111 patients with liver cirrhosis. Ultrasound examinations were performed with a *Voluson E8* ultrasound system, using a 3.5-5 MHz convex transducer. The examination included B mode, color Doppler and pulse-wave Doppler techniques. All patients also underwent extended clinical and biological evaluation. Obtained data were processed using case-based reasoning, data segmentation and clusterization.

Results: A scoring system for severity of portal hemodynamics disorders in liver cirrhosis was developed based on five most relevant conventional and Doppler parameters. The scoring system allows classification of portal flow alterations as low, middle and high severity.

Conclusions: The developed scoring system can be used as a useful complementary tool in differential diagnosis of portal flow alterations in liver cirrhosis. The proposed score also allows a better dynamic imaging follow-up of patients with liver cirrhosis.

Key words: doppler ultrasound, portal hemodynamics, liver cirrhosis, diagnostic scoring system.

Pneumatosis intestinalis in acute mesenteric ischemia

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Background: One of the radiological signs of acute arterial mesenteric ischemia (AMI) according to data of Multi-spiral Computed Tomography with angiography (MCTA) is pneumatosis intestinalis (PI). Taking into consideration absence of reliable information on the pathophysiology of PI, we performed a comparison of radiological data and morphological studies of the resected bowel wall segments.
Material and methods: We analyzed MCTA images of 15 patients with arterial AMI (men-9, women-6; average age – 71.1±3.5 years (95% CI: 63.64–78.49).
Results: PI was determined in all cases of AMI: type I (bubbly-like) was diagnosed more frequently ($p<0.01$) than type II (semilunar) and constituted 11(73.3%) vs. 4(26.7%) cases, respectively. During histological evaluation of bowel wall tissues, a number of particularities of these phenomena were revealed: (1) PI in all cases of AMI was associated with necrosis and desquamation of bowel mucosa; (2) morphologically they have a "honeycomb" appearance and are localized predominantly in perivascular areas; (3) the pattern of spreading – from mucosa to serosa layer, distinguish it from "benign" forms of PI. Also, it was determined that type I PI was associated with transmural necrosis of the bowel wall in 63.6% cases, whereas in type II PI – in 100% cases ($p<0.05$). Diagnostic value of this sign (PI) in arterial AMI constituted: Se, Sp, PPV, NPV=100%.
Conclusions: MCTA should be considered a method of choice for diagnosis of AMI. PI should be considered as a specific radiological sign of AMI. PI type II is associated in all the cases with transmural bowel wall necrosis.
Key words: computed tomography, acute mesenteric ischemia, pneumatosis intestinalis.

Associated complications of congenital aortopathies in children

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Background: Congenital aortopathies include a variety of disorders such as aortic stenosis, aortic coarctation, bicuspid aortic valve. The overall mortality rate following complications is 2.49-2.78 per 100,000 population. The study aimed to assess the factors with potential for development of complications in congenital aortopathies in children.
Material and methods: The study included 71 children aged from 1 month to 18 years (mean age of 9.26 ± 0.82 years). The ratio of girls to boys was 1:2. A total of 55 children were from rural areas and 16 were from urban areas.
Results: Echocardiographic data and the Z score revealed distinct aortic dilatation in 30 children, the most common site of dilation being the Valsalva sinus (26.03 ± 1.24, $p<0.005$). The most common pathologies associated with aortic dilatation were aortic coarctation and bicuspid aortic valve (accounting for 63.33% cases), followed by aortic stenosis (30% cases) and genetic diseases affecting the aortic wall structure (6.67% cases).
Conclusions: Aortic dilatation is commonly encountered in congenital aortopathies and can lead to life-threatening complications such as aortic aneurysms, aortic dissection and rupture. Early diagnosis and close follow-up are essential in this situation.
Key words: Congenital aortopathies, aortic dilatation, children.

Ovarian mucinous cysts in children and adolescents

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Background: Mucinous ovarian cysts (MOC) in children and adolescents are extremely rare. The study aimed to determine the particularities of imaging diagnosis, surgical treatment and morphological characteristics of MOC in pediatric patients.
Material and methods: We performed a retrospective analysis of pediatric patients (≤ 19 years) with ovarian tumors (n = 117) treated at the Institute for Mother and Child Health Care from 2000 to 2017. The diagnosis was confirmed by immunohystochemical analysis with monoclonal antibodies for cytokeratin 7 (CK-7), cytokeratin 20 (CK-20) and CEA.

Results: MOC was identified in 17(14.5%) cases. The average age was 16.7 ± 0.6 years (95% CI: 15.44-17.98). MOC was on the left ovary – 9(52.9%), right – 6(35.3%) and in 2(11.8%) – bilateral. After radiological exam data: unilateral MOC – cystic, multicameral formations with max. 12.7 ± 1.4 cm (from 8 to 27.7) and the "morphological" index (MI) after Jeoung HY. – 6.5 ± 0.1; bilateral (or secondary, appendectomy anamnesis) – are preponderant solid formations with max. – 6.9 ± 0.4 cm and MI = 4. Surgical interventions were performed by laparotomy – 15(88.2%) and laparoscopic – 2(11.8%). According to the volume of operations, ovarian tissue preserving – 11(64.7%), adnexectomy – 4(23.5%) and ovariectomy – 2(11.8%) were performed. On the immunohystochemical exam: Primary MOC (benign cystic adenoma) – CK-7 + / CK-20- / CEA-, and secondary MOC – CK20 + / CEA + / CK-7-.
Conclusions: MOC are quite rare epithelial tumors in pediatric patients with specific radiological and immunohystochemical characteristics. Secondary MOCs must be examined as metastatic formations in the mucinous tumors of the appendix having the potential for developing pseudomixomas of the abdominal cavity.
Key words: mucinous ovarian cysts, adolescents, children, cystadenoma.

Diagnostic value of MRI optimized protocols in evaluation of BI-RADS category 0 lesions detected by conventional imaging

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Background: Due to its higher sensitivity, breast magnetic resonance imaging (MRI) is increasingly being used to evaluate a variety of breast lesions when the results of conventional methods are inconclusive. The aim of this study was to assess the diagnostic value of breast MRI optimized acquisition protocols in the assessment of suspicious lesions rated as BI-RADS category 0 on previous mammography and/or breast ultrasound exam.
Material and methods: The study included a total of 214 suspicious lesions referred for breast MRI evaluation in the period 10.2015 – 02.2018. All lesions had been rated as BI-RADS category 0 on previous mammography and/or breast ultrasound exam. The MRI results were correlated with the final diagnosis and histopathology findings when available.
Results: A total of 214 lesions were restaged by MRI optimized protocols from BI-RADS 0 to the following categories: I – 35 lesions (16.4%), II – 24 lesions (11.2%), III – 75 lesions (35.0%), IV – 64 lesions (29.9%), V – 13 lesions (7.5%). BI-RADS category III lesions were recommended a short-term follow-up MRI at intervals of 6, 12, and 24 months. All BI-RADS IV and V lesions underwent biopsy, which revealed that 28.1% (18/64) BI RADS IV lesions were malignant and 71.9% (46/64) were benign, while 84.6% (11/13) BI RADS V lesions were malignant and 15.4% (2/13) were benign.
Conclusions: Breast MRI optimized protocols provide relevant additional details for evaluation of BI-RADS 0 lesions, significantly improving cancer detection rate.
Key words: breast MRI, optimized protocols, BI-RADS category 0 lesions.

Chest X-ray utility in chronic dialysis patients

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Background: Respiratory system pathologies are one of the most frequent causes of hospital admission for patients to chronic dialysis. Chest X-ray is an accessible and cost-effective way to diagnose such comorbidities and guide their management. The study aim was to assess the efficiency of follow-up chest X-rays performed twice per year for evaluation of chronic dialysis in outpatients.
Material and methods: The study included 350 outpatients who underwent dialysis in Chisinau Dialysis unit of "BB-Dializa" S.R.L. during 2016. Basing on the National Clinical Protocol each patient except those on holiday dialysis underwent a chest X-ray in 3 projections twice per year. Additional chest X-rays could be performed if clinically indicated.
Results: Simple chest X-ray in 3 projections has demonstrated to be an efficient instrument in diagnosis of both acute and chronic pulmonary, mediastinal and cardiac pathology. During the study period, 2 cases of BAAR+ tuberculosis were diagnosed and successfully treated. A total of 12 cases of pneumonia, 26 cases of chronic bronchitis, 1 case of primary lung cancer and 1 case of pulmonary metastases were also diagnosed at the routine follow-up chest X-rays. A total of 9 patients required hospital admission, while the rest underwent ambulatory treatment. Further investigations of the patient with lung metastases revealed a pancreatic malignancy.
Conclusions: Proposed imaging management approach to the chronic dialysis outpatients has demonstrated its viability and efficiency in this cohort of 350 outpatients.
Key words: chest X-ray, dialysis, respiratory system.

Evaluation of CSF flow dynamics by phase-contrast ultra-high field MRI in different types of hydrocephalus

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Background: The widespread use of mini-invasive neurosurgical methods for correcting cerebrospinal fluid (CSF) dynamics, dictates the need for its accurate evaluation. The study aimed to evaluate the possibilities of ultra-high field phase-contrast MRI for qualitative and quantitative assessment of CSF dynamics in different types of hydrocephalus.
Material and methods: 62 patients were included in the study presenting with either open-type post-traumatic hydrocephalus, normotensive hydrocephalus or occlusion hydrocephalus. A cohort of 20 healthy volunteers served as controls. All patients underwent a brain MRI on a Siemens 3T Magnetom Skyra scanner, using conventional sequences in three projections, phase-contrast MRI protocol and acquiring quantitative and qualitative data: amplitude of the linear velocity (Av) of the CSF flux, ejection volume (VE) and surface of the cerebral aqueduct (A).
Results: CSF flow parameters were within normal values in the control group. In occlusive hydrocephalus forms, CSF flow at the aqueduct level was reduced to a minimum or not detectable at all. Considerable increases in the values of the parameters were determined in patients with open-type post-traumatic hydrocephalus (VE-0.27 ± 0.075 ml, Av-11.95 ± 1.1 cm / s) and normotensive hydrocephalus (VE-0.21 ± 0.0764 ml, Av-13.3 ± 0.8cm / s), as compared to the control group. The recorded CSF flow parameters improved postoperatively, reaching the upper limit of the normal values. This was associated with a decrease in volume of the ventricular system and reduction of periventricular edema.
Conclusions: Phase-contrast MRI is a relevant method for assessing CSF flow dynamics, guiding the treatment strategy, and postoperative follow-up in patients with hydrocephalus.
Key words: Phase-contrast MRI, hydrocephalus, CSF flow parameters.

Presurgical diagnostic work-up in epilepsy

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Background: Hippocampal sclerosis is the most common cause of epilepsy in adults. Patients with intractable seizures are evaluated for surgical treatment and preoperative magnetic resonance imaging (MRI) can help localize epileptogenic lesions. Brain MR imaging using a 3 Tesla scanner and a specially designed "Epilepsy Protocol" and MR Spectroscopy help to evaluate hippocampal volume, internal structures and extensive metabolic impairments which are correlated with the extent of neuropathologic changes in mesial temporal sclerosis. Proton MR Spectroscopy has been shown to be useful in the preoperative evaluation of patients with temporal lobe atrophy, confirming the neuronal dysfunction by detecting low N-acetyl aspartate (NAA). N-acetyl aspartate is almost exclusively concentrated in neurons of the nervous system and has been used as a neuronal marker in 1H-MRS studies. Proton MR Spectroscopy has been shown to be able noninvasively to confirm the epileptogenic hippocampus by showing low levels of N-acetyl aspartate.
Content: The presentation reviews the non-invasive epilepsy work-up. Diagnostic work-up in a case of temporal lobe epilepsy from our practice is presented as an illustration. A complex approach including correlation of various factors such as seizure semiology, video-EEG monitoring and brain MRI findings plays a significant role in detecting potential surgical candidates and predicting the outcome of epilepsy surgery.
Conclusions: Brain MRI is an important tool in the presurgical epilepsy diagnosis. Specially designed MRI protocols for investigating epilepsy patients significantly increase the chance of detection of epileptogenic lesions.
Key words: epilepsy, seizure, brain MRI, hippocampal sclerosis.

Evaluation of three dimensional segmental myocardial motion using cardiac magnetic resonance

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Background: Cardiovascular disease is one of the leading causes of morbidity and mortality worldwide. Assessment of global and regional cardiac wall motion represents an important part of the evaluation of cardiac disease and ventricular function. The study aims to provide a brief overview of cardiovascular magnetic resonance techniques used for quantification of global and regional myocardial wall motion.
Content: Quantification of myocardial wall motion using various parameters such as radial, circumferential and longitudinal velocities, strain and strain rate, torsion and torsion rate demonstrated a high sensitivity for revealing even subtle functional alterations in myocardial wall motion and holds great potential for detecting a variety of cardiac diseases in their early stage. The presentation discusses commonly used techniques for this purpose such as myocardial tagging by magnetization saturation, strain encoded (SENC) imaging, phase-contrast velocity encoding (VENC) or tissue phase mapping, displacement-encoding with stimulated echoes (DENSE) and 3D cine DENSE tissue tracking methods, etc. The underlying principles of each technique, main advantages and disadvantages as well as their potential clinical applications are also discussed.
Conclusions: Recent advances in cardiovascular magnetic resonance have allowed the development of a variety of techniques for accurate quantification of global and regional myocardial wall motion that can facilitate the diagnosis and management of cardiac diseases.
Key words: cardiovascular magnetic resonance, displacement-encoding with stimulated echoes (DENSE), MR tissue tagging, phase-contrast velocity encoding (VENC), tissue phase mapping, strain encoded (SENC) imaging.

Cardiac remodeling and correlation between anthropometric parameters and epicardial adipose tissue in children with metabolic syndrome

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Background: Epicardial adipose tissue (EAT) is an active endocrine organ located at the surface of the heart and playing an important role in the development and progression of cardiovascular pathology.
Material and methods: The study included a group of 22 children with metabolic syndrome (MS) and a group of 38 children with pre-MS. The diagnosis of MS was established according to the International Diabetes Federation (IDF) consensus definition of metabolic syndrome in children and adolescents (IDF, 2007). Anthropometric parameters and echocardiographic results were studied in detail and correlated. The study was approved by the Scientific Research Ethics Committee. An informed consent was obtained for all participants included in the study.
Results: EAT thickness measured by echocardiography was 5,73±1,53mm in MS *vs* 3,87±1,25mm in pre-MS ($p < 0,05$). Furthermore, EAT thickness demonstrated a strong correlation with abdominal index, abdominal-gluteal index, body mass index, left ventricular mass index, left ventricular hypertrophy and abnormal geometric changes of the left ventricle related to ventricular remodeling. At the same time, EAT thickness showed no distinct correlation with abdominal circumference, gluteal circumference and left ventricular mass in both groups.
Conclusions: Epicardial adipose tissue represents an indirect, safe, accessible marker of visceral adiposity assessment. The study results also demonstrate a direct correlation between increased epicardial adipose tissue and abnormal left ventricular parameters as well as ventricular remodeling.
Key words: children, metabolic syndrome, epicardial adipose tissue, cardiac remodeling.

Implementation of preoperative embolization of intracranial meningiomas: a preliminary experience

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Background: Preoperative embolization of intracranial tumors is used for more than four decades to minimize intraoperative bleeding and facilitate surgical removal. The goal of embolization is to occlude intratumoral vessels and the large feeding arteries. Preoperative embolization is recommended for large menigiomas (>3–4 cm in diameter) with pure or predominant external carotid artery supply, tumors in eloquent areas and hypervascular tumors. Debate remains on several aspects of preoperative embolization of meningiomas including selection of embolic agent and injected volume as well as optimal timing of embolization before the open surgery.
Content: The presentation provides a brief overview of embolization agents and techniques. We also present two patients with large intracranial meningiomas (located on the sphenoid wing and the parasagittal region) who underwent microsurgery during the same session after endovascular treatment. In both cases the tumor was embolized with microparticles, after which we resected the tumor in our hybrid operating room. Complete tumor resection (Simpson Grade II) was achieved in both cases. The estimated blood loss was about 500 ml for each intervention. Postoperative histopathological exam revealed embolization particles in tumor vessels and small foci of necrosis.
Conclusions: The implementation of preoperative embolization can further improve the treatment strategy of intracranial tumors in our country. We hope that the combination of microsurgical and endovascular techniques would lead to improvement in overall clinical outcomes and further reduce the mortality and morbidity of neurooncological patients.
Key words: interventional neuroradiology, preoperative embolization, intracranial tumor, meningioma, hybrid operation.

Diagnostic accuracy of computed tomography findings in premature infants with bronchopulmonary dysplasia

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Background: Bronchopulmonary dysplasia (BPD) is the most common chronic lung disease in newborns and premature infants. Low radiation dose high-resolution chest computed tomography (CT) holds great potential for providing valuable information related to the severity of BPD in premature infants and guiding the treatment strategy. The study aimed to evaluate the chest CT findings in premature infants with bronchopulmonary dysplasia (BPD).
Material and methods: The study included a total of 32 premature infants with BPD who underwent a high-resolution chest CT between January 2015 and February 2018. Their CT findings were analyzed and diagnostic value evaluated.
Results: The 3 most frequent CT findings included: mosaic lung parenchymal pattern – noted in 93.8% (30/32) patients, bronchial wall thickening – noted in 90.6% (29/32) patients and subpleural triangular/linear opacities – noted in 87.5% (28/32) patients. The diagnostic accuracy of each CT finding was as follows: mosaic lung parenchymal pattern – 89.13% (95% CI from 76.43% to 96.38%), bronchial wall thickening – 85.42% (95% CI from 72.24% to 93.93%), subpleural triangular/linear opacities – 81.25% (95% CI from 69.54% to 89.92%).
Conclusions: Low radiation dose high-resolution chest computed tomography provided valuable diagnostic information in premature infants with BPD. The most accurate diagnostic finding was the mosaic lung parenchymal pattern, which was frequently associated with bronchial wall thickening and subpleural triangular/linear opacities.
Key words: bronchopulmonary dysplasia, low radiation dose high-resolution chest CT, mosaic lung parenchymal pattern.

Clinical and radiological features of cortical bone trajectory pedicle screw fixation of lumbar spine

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Background: Spinal fusion with pedicle screw fixation has become the gold standard of surgical treatment of degenerative conditions of the lumbar spine. The main drawback of this technique is its invasiveness associated with high complication rates. Consequently, a variety of minimally invasive spine procedures have been developed, the cortical bone trajectory (CBT) screw fixation being one of most promising. The study aimed to evaluate the imaging features, early clinical outcomes and complications of this new technique.
Material and methods: The study included 38 patients who underwent spinal fusion with CBT pedicle screw fixation between January 2016 and January 2018. The mean follow-up after surgery was 6 months.
Results: The surgical procedure included small midline laminectomy approach, bilateral facetectomy, unilateral or bilateral intervertebral cage insertion and navigation guided CBT pedicle screw fixation of the spine. Standing X-ray imaging was obtained prior to discharge and at three months after surgery. Follow-up CT scans at 1 year postoperatively were used to assess the fusion status. The mean blood loss, operation time and postoperative morbidity were significantly lower compared to traditional fusion techniques.
Conclusions: The CBT approach is comparable to the traditional techniques in terms of successful fusion rates and clinical outcomes, but with additional benefits of less blood loss, less muscle damage and earlier functional recovery.
Key words: cortical bone trajectory, pedicle screw, lumbar fusion.

Inguinal left ovary associated with Mayer-Rokitansky-Kuster-Hauser syndrome: initial diagnosis

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Background: Mayer-Rokitansky-Kuster-Hauser syndrome (MRKHS) is characterized by absent or rudimentary uterus and the upper part of the vagina, is the second most common cause of primary amenorrhea after gonadal dysgenesis.
Content: The presentation reviews the role of different imaging modalities in the diagnosis of MRKHS. An extremely rare case of MRKHS associated with a left inguinal ovary in a young woman is also discussed. A 21-year-old woman presented with primary amenorrhea. The patient had a female phenotype, normal stature, and normal secondary sex characteristics. Physical examination showed normal hymenal fringe and a blind pouch of vagina. Pelvic MRI performed with a 3.0T (Siemens Skyra) scanner (coronal plane T2WI with TR-4032ms, TE-71ms; transverse plane T2WI with TR-11140 ms, TE- 102ms and sagital plane T1WI with TR-879ms, TE-11msș slice thickness 4-6mm) revealed normal bilateral position of the kidneys, absent uterus, cervix, and proximal (upper) vagina. Fibrofatty tissue between the bladder and the rectum in the expected location of the vagina was also noted. The right ovary appeared normally sited with follicles in various stages of maturity. The left ovary, however, had atypical location in the left inguinal canal, with a relatively normal structure and small follicles. The diagnosis of MRKHS was confirmed.
Conclusions: MRKH syndrome is a congenital disorder of the female genital tract caused by the maldevelopment of the Müllerian duct. The incidence of ectopic ovary in MRKHS is ranging from 15% to 42%. The ovarian position serves a pivotal role in the strategy of gestational surrogacy. MRI is a useful and noninvasive imaging method in the diagnosis and evaluation of patients with MRKHS.
Key words: Mayer-Rokitansky-Kuster-Hauser syndrome, magnetic resonance imaging, inguinal ovary.

The imaging picture of the tooth during its development and eruption

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Background: The tooth as a relic of the exoskeleton appears in the oral cavity long after one's birth. Whereas the primary dentition seldom manifests any eruption and position anomalies, the permanent dentition is often affected by such problems. Throughout the tooth's development stage, the possibility of examining the dental follicle and the erupting tooth is ensured only by imaging methods.
Content: This report focuses on the imaging signs at different stages in the development of the dental follicle and in the tooth's eruption. The dental follicle develops within the confines of a well-delimited space in the maxillary bone – the crypt of the dental follicle. At different stages of development, the crypt changes its shape from round to oval, elliptical and then segmented, in order to finally transform into the tooth's alveolus. Studying the changes occurring in the structure of the draining canal of the dental follicle might prove a key element in guiding these processes. By the end of the tooth's development, the draining canal would become its eruption canal. In the case of the anterior teeth, the eruption canal would merge with the alveoli of the deciduous teeth, thus favouring the resorption of their roots.
Conclusions: Knowing and correctly interpreting the imaging landscape at the initial stages of eruption could assist the orthodontist in choosing the optimal prophylactic measures that would facilitate the physiological eruption and greatly prevent the occurrence of bite anomalies.
Key words: dental follicle, the crypt of the dental follicle.

Le scanner dans les pathologies aortiques, de la valve au syndrome aortique aigu en passant par les anévrysmes et les vascularites

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Introduction: L'aorte est menacée de plusieurs processus pathologiques, la plupart pouvant se localiser à n'importe quel niveau de l'aorte. Les plus fréquents sont l'athérome (et ses complications emboliques), les anévrismes et les dissections. Plus rarement sont observés au niveau thoracique les ulcères aortiques et les hématomes pariétaux, les atteintes inflammatoires au cours des vascularites (Artérite à cellules géantes, Takayasu, Behcet) sans oublier les ruptures traumatiques de l'isthme. La valve aortique est également menacée par les rétrécissements notamment dans le cadre de l'athérome, et beaucoup plus rarement par des localisations infectieuses d'endocardite.
Contenu: Le scanner et l'IRM, grâce à leurs performances sans cesse en progression, sont devenus incontournables pour le diagnostic des maladies de l'aorte, le planning préopératoire et le suivi. Le rôle de chacune de ces modalités avec leurs avantages et limites respectifs, sont à bien connaitre pour assurer la prise en charge la plus adaptée. De nombreuses recommandations européennes et américaines aident de surcroît à établir les meilleures stratégies diagnostiques.
Conclusions: Techniquement, l'idéal est d'examiner l'aorte sur toute sa hauteur, depuis l'origine des troncs supra-aortiques jusqu'aux artères fémorales. Les nouveaux scanners parviennent à couvrir ce champ en une seule apnée. En IRM, la couverture est limitée à 50 cm ce qui conduit soit à privilégier un segment aortique par rapport à l'autre, soit à faire 2 centrages successifs et 2 injections de produit de contraste à condition de s'être assuré que la fonction rénale est normale.
Mots-clés: le scanner dans les pathologies aortiques, syndrome aortique aigu, imagerie cardiovasculaire.

L'ostéoporose transitoire de la hanche chez les patients post-partum

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Introduction: L'ostéoporose transitoire de la hanche est une entité qui survient chez les patients au cours du dernier trimestre de la grossesse ou dans la période post-partum. Cliniquement, il se manifeste par la douleur et l'impuissance fonctionnelle. Le but de cet article est de démontrer l'importance du diagnostic de l'ostéoporose transitoire de la hanche dans la période post-partum par l'IRM examen.
Matériel et méthodes: D'après une étude rétrospective, trois cas représentatifs de douleur à la hanche ont été sélectionnés chez des patients au cours du premier mois post-partum. Les examens d'IRM du petit bassin ont été réalisés sur une machine 1.5T RM. Des séquences ont

été utilisées: coronaire et axiale STIR, coronaire T1, coronaire T2 MERGE, axiale T1 Fat Sat et axiale T2 FRFSE, et post-contrast coronal T1 et axiale T1 Fat Sat.
Résultats: L' IRM examen du bassin osseux a montré des changements de signal d'os sous la forme de plages diffuses avec hypersignal STIR (œdème osseux), hyposignal T1 et hypersignal T2, impliquant la tête fémorale et le cou dans tous les cas et les articulations sacro-iliaques dans 30% des cas. Dans 60% des cas, une accumulation de liquide a été observée dans les articulations coxo-fémorales.
Conclusions: L'IRM examen du bassin osseux est «l'étalon d'or» dans le diagnostic de l'ostéoporose transitoire, à l'exclusion de sensibilité et une spécificité élevée d'autres causes de la douleur dans la hanche (nécrose aseptique de la tête fémorale, l'arthrite septique, le cancer, les fractures de stress).
Mots-clés: L'ostéoporose transitoire, période post-partum, l'IRM examen du bassin osseux.

Imagerie de l'anatomie de l'articulation du genou

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Introduction: L'articulation du genou est l'une des articulations les plus grandes et les plus importantes dans le corps humain. Il joue un rôle essentiel dans de nombreuses activités quotidiennes de l'année comme s'asseoir, rester debout, marcher et courir; il est donc vulnérable aux blessures et au développement de l'arthrose.
Contenu: Le genou est un type d'articulation synoviale, composée de trois compartiments fonctionnels: les articulations tibio-fémorales médiale et latérale reliant le fémur avec le tibia, ainsi que l'articulation fémuro-patellaire. La présentation fournit un examen détaillé d'imagerie de l'anatomie de l'articulation du genou, y compris les principaux organes articulaires (les condyles latéral et médial du fémur et du tibia, la rotule), la capsule articulaire et la bourse, cartilage articulaire, ménisques, ligaments intracapsulaire et exptracapsulaire, tendons et muscles etc. En outre des variantes anatomiques communes sont discutées et une variété d'images cliniques est présentée à titre d'illustration.
Conclusions: À la fin du congrés les visiteurs vont s'élargir leur base de connaissances relatives à l'imagerie de l'anatomie de l'articulation du genou et des variantes anatomiques communes.
Mots-clés: articulation du genou, l'imagerie de l'anatomie, l'interprétation de l'imagerie.

La contribution de l'imagerie par résonance magnétique à diffusion pondérée (DWI) à l'évaluation du degré et de l'évolution de la sacro-iliite

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Introduction: La sacro-iliite se caractérise par l'apparition de changements inflammatoires dans une ou les deux articulations sacro-iliaques. L'examen des articulations sacro-iliaques par protocole IRM et avec la séquence DWI, représentent l'étalon d'or, qui permet l'évaluation du degré et la classification des changements inflammatoires aigus et chroniques. De plus, est analysé le cartilage articulaire, son apparence et signal, les ligaments, l'espace articulaire et l'accumulation possible de liquide intra et peri-articulaire.
Matériel et méthodes: Nous avons évalué rétrospectivement un certain nombre de cas avec le diagnostic présomptif de sacro-iliite. Tous les examens ont été réalisés sur un protocole de 1,5 T RM. L'examen a compris des séquences: STIR coronal, MERGE coronal, T2 axial, T2 axial Fat Sat, T1 axial, DWI (ACD). Les examens ont été effectués nativement, la séquence DWI permettant une analyse précise des changements inflammatoires aigus, sans avoir recours à l'administration des contrasts. On a calculé l'IRM score des lésions inflammatoires de l'articulation sacro-iliaque selon "Spondyloarthritis Research Consortium of Canada".
Résultats: Avec le score d'IRM des lésions inflammatoires, on peut apprécier le degré et l'évolution de la sacro-iliite.
DWI séquence permet l'évaluation de l'œdème osseux du type inflammatoire, parce qu'elle détecte un changement dans le rapport entre l'eau intracellulaire et extracellulaire, étant une séquence utile pour la surveillance de la sacro-iléite pré- et post-traitement.
Conclusions: L'examen IRM des articulations sacroiliaques évalue certainement les changements inflammatoires aigus, permettant ainsi l'établissement du diagnostic et de la thérapie, ainsi qu'un plan de surveillance. DWI séquence pour l'analyse des changements inflammatoires aigus au niveau des articulations sacroiliaques est effectuée dans un court temps et ne nécessite pas l'administration du contraste.
Mots-clés: l'examen IRM des articulations sacro-iliaques, sacro-iliite.

Embolisation préopératoire des tumeurs osseuses

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Introduction: L'embolisation préopératoire des tumeurs osseuses est considérée comme une technique d'appoint très efficace pour réduire la perte de sang peropératoire pendant l'intervention chirurgicale. Une augmentation de la faisabilité et de la sécurité de l'intervention chirurgicale a également été rapportée, conduisant à un meilleur résultat chirurgical.
Contenu: La présentation réalise une synthèse d'indications et de techniques d'embolisation préopératoire des tumeurs osseuses. La méthode concerne à la fois les tumeurs osseuses primaires et secondaires. Des images représentatives sont montrées à titre d'illustration. Les complications les plus importantes tels que l'embolisation des tissus non ciblés et le syndrome de post-embolisation (douleur locale, fièvre, maux de tête, malaise) sont également discutées.
Conclusions: L'embolisation artérielle des tumeurs osseuses est l'un des traitements adjuvants importants, parfois le seul traitement à visée curative. Cette technique réduit la vascularisation tumorale et une forte perte de sang pendant la chirurgie, permet une meilleure définition des plans de tissus et donc une meilleure excision avec un taux de récidives plus faibles.
Mots-clés: tumeurs osseuses, embolisation préopératoire, syndrome post-embolisation.

Elastographie en temps réel – impact de la réponse d'anélasticité

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Introduction: L'élastographie mammaire est une technique récente utilisée en complément de l'échographie mammaire dans le dépistage du cancer du sein. L'élastographie fournit non seulement des informations qualitatives (carte à codage de couleur), ainsi que quantitative, liée au rapport d'élasticité du nodule versus le tissu adipeux (FLR). À la lumière de la qualité, il y a controverse sur la valeur de discrimination entre les lésions bénignes et malignes. Actuellement, la limite utilisée dans notre centre est la valeur médiane de 4,88, validée sur une étude comparative avec l'examen histopathologique, une valeur qui assure une sensibilité de 86,5% et une spécificité de 90,4%
Matériel et méthodes: L'étude a inclu 344 femmes, âgées de 19 à 76 ans, avec des pathologies mammaires chirurgicales, qui ont eu un résultat histopathologique clair et, dans certains cas, un résultat immunohistochimique clair.
Résultats: Sur le total de 344 cas, ont été diagnostiqués lésions bénignes en 186 (54,1%), le cancer du sein dans 158 cas (45,9%). Lorsque nous avons examiné la valeur FLR, on a eu la stratification du risque suivant: faible risque dans 166 cas, 38 cas avec risque intermédiaire et à haut risque 138 cas. La sensibilité et la spécificité de cette stratification considérée isolée, sans l'information fournie par l'échographie 2B, est 92,4% et respectivement 83,9%. Le système conventionnel BIRADS-US n'avait qu'une sensibilité de 75,6%, avec une spécificité de 69,9%. Contrairement à cela, un nombre important de cas classés comme intermédiaires, 97 cas (catégorie BIRADS 4 a), ont été réorganisés dans l'autre catégorie de risque, alors quand ils ont été soumis à l'évaluation élastographique, 23 ont été attribués à un groupe à haut risque en raison de l'anélasticité et 26 ont été attribués à classe de risque faible parce que l'élasticité était présente. Seuls 48 cas sont restés dans la catégorie intermédiaire.
Conclusions: Évidemment, l'élastographie apporte un plus pour l'échographie classique, en réduisant le nombre de résultats faux positifs et faux négatifs par rapport à l'échographie classique.
Mots-clés: l'élastographie mammaire, rapport d'élasticité du nodule versus le tissu adipeux.

Diagnostic de la cirrhose hépatique

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Introduction: La cirrhose hépatique est un diagnostic clinique, biologique et d'imagerie. Le radiologue doit reconnaître une cirrhose hépatique lorsqu'il la découvre accidentellement chez un patient. Le rôle principal de l'imagerie de contraste dans la cirrhose hépatique est dans le diagnostic de l'hépatocarcinome.

Matériel et méthodes: Les patients qui ont subi une CT et une IRM abdominale avec un produit de contraste en 2017 ont été suivis. Les patients présentant la cirrhose du foie connue ont été inclus dans l'étude. Les patients présentant un foie biologique et imagistique normale ont été également inclus. Les patients présentant des lésions hépatiques focales autres que les kystes biliaires et les hémangiomes typiques ont été exclus. On a également exclus les patients dont les antécédents cliniques sont incomplètement connus. Les images ont été réséquées ensuite par un médecin expérimenté en imagerie abdominale et par un médecin résident, indépendants l' un de l'autre et sans connaître le diagnostic du patient. La sensibilité et la spécificité de l'imagerie en coupe (TDM et IRM) dans le diagnostic de la cirrhose du foie ont été évaluées.
Résultats: 198 patients, 125 avec un foie normal et 73 avec cirrhose hepatique ont été inclus dans l'étude. La sensibilité dans le diagnostic de la cirrhose du foie était de 95% pour le médecin expérimenté en imagerie digestive et de 91% pour le médecin résident, alors que la spécificité était de 98% et 88%, respectivement.
Conclusions: L'imagerie sectionnelle a une bonne précision dans le diagnostic de la cirrhose du foie. L'exactitude du diagnostic dépend de l'expérience de l'examinateur.
Mots-clés: cirrhose hépatique, diagnostic différentiel, examen CT et IRM, imagerie sectionnelle.

Le rôle de l'imagerie dans le diagnostic différentiel des lésions focales hépatiques

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Introduction: La détection des lésions hépatiques est souvent constatée après une échographie. Le rôle de l'imagerie avec injection de produit de contraste est de caractériser et de différencier les formations focales hépatiques. Le but de cette étude était d'évaluer la sensibilité et la spécificité de l'imagerie en coupe (TDM et IRM) dans le diagnostic différentiel de la formation hépatique focale.
Matériel et méthodes: Les patients qui ont effectué CT et IRM abdominal avec substance de contraste en 2017 ont été suivis. Les patients avec des lésions focales hépatiques confirmées histologiquement ou par une surveillance en temps ont été inclus dans l'étude. Il y avait des patients exclus, ceux qui etaient sans diagnostic histologique et qui n'ont pas été suivis cliniquement et à l'aide de l'imagerie.
Résultats: 158 lésions hépatiques focales ont été inclues dans l'étude chez 134 patients. La sensibilité au CT ou à l'IRM dans le diagnostic des lésions focales hépatiques était de 94% et la spécificité de 92,5%. La précision du diagnostic différentiel bénin / malin était de 98,3%.
Conclusions: L'imagerie sectionnelle a une bonne précision dans le diagnostic différentiel des formations focales hépatiques. La précision du diagnostic différentiel bénin / malin est très bonne.
Mots-clés: lésions hépatiques focales, diagnostic différentiel, examen CT et IRM.

Évaluation echocardiographique de l'hypertension artérielle pulmonaire dans les cardiopathies congénitales

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Introduction: L'hypertension artérielle pulmonaire (HTAP) chez les patients atteints de cardiopathies congénitales (CC) reste le déterminant le plus important de la morbidité et de la mortalité périopératoires et de la survie postopératoire sur une longue période de temps. Le but de cette étude était d'estimer les possibilités de l'échographie cardiaque dans l'évaluation de l'hypertension artérielle pulmonaire.
Matériel et méthodes: 210 patients présentant une communication inter-ventriculaire et opérés dans le département de chirurgie cardiaque de 2012 à 2015. L'estimation de la pression systolique dans le ventricule droit (PSVD) et de la pression moyenne dans l'artère pulmonaire (PMAP) a été réalisée avant l'opération et a J2 postopératoire.
Résultats: Le niveau de HTAP a été estimé chez tous les patients. La PSVD moyenne a diminué de 45,56±1,74 mm Hg (de 100 à 33 mm Hg), à 31,93±0,89 mm Hg (p<0,001) (dans 91% des cas – corrélation complète avec les données de cathétérisme cardiaque). La PMAP (calculé chez 30 patients) préopératoire: 51,13±3,33 mm Hg (de 80 à 24 mm Hg), postopératoire: 40,5±7,67 mm Hg (p<0,001).
Conclusions: Le degré de l'HTAP a été évalué chez tous les patients par une des trois méthodes suivantes: utilisation d'un jet régurgitant à travers la valve tricuspide, régurgitation de la valve artérielle pulmonaire (AP) ou gradient de jet à travers la CIV. Les résultats conformes à ceux appréciés directement. Exceptions: sténose de l'AP; calcule de PSVD chez les patients ayant le canal auriculo-ventriculaire complet ou le ventricule unique.
Mots-clés: hypertension artérielle pulmonaire, échographie cardiaque, cardiopathie congénitale.

Le diagnostic d'imagerie de la mort cérébrale

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Introduction: La «mort cérébrale» est un terme utilisé pour définir la mort d'un être humain, déterminée par des tests démontrant une cessation irréversible des fonctions cliniques du cerveau tout en maintenant artificiellement les fonctions cardiovasculaires et pulmonaires. En République de Moldavie, une transplantation d'organe (foie, reins, cornées, tissus) des patients atteints de mort cérébrale est réalisée depuis 2014. Le but de cette étude était de confirmer la mort cérébrale en établissant des signes cliniques et des tests paracliniques obligatoires ainsi que l'établissement d'un diagnostic d'imagerie de la mort cérébrale correcte selon le protocole clinique standardisé de la mort cérébrale du 05.04.2011.
Matériel et méthodes: Angiographie cérébrale par scanner en tant qu'examen electif dans un lot de 45 patients au sein du IMSP SCM "Sainte Trinité" en 2015-2017.
Résultats: Protocole standard européen pour la confirmation du statut de mort cérébrale avec signes cliniques obligatoires (coma ou inactivité complète, absence de réflexes du torse cérébral: apnée) et tests paracliniques obligatoires (électroencéphalographie, échographie Doppler transcrânienne, TDM cérébrale angio). Si le diagnostic paraclinique de la mort cérébrale est déjà documenté, la radiographie pulmonaire et l'USG des organes abdominaux et pelviens sont réalisées en République de Moldavie, les normes européennes recommandant également le scanner toraco-abdominopelvin.
Conclusions: L'organisation de la procédure d'imagerie chez les patients en cas de mort cérébrale repose sur l'existence de protocoles adaptés à différentes situations au sein des sections de profil. Certaines des explorations d'imagerie nécessaires peuvent être effectuées dans un plan pour éviter les examens d'urgence.
Mots-clés: mort cérébrale, diagnostic d'imagerie, transplantation.

Optimisation des techniques d'imagerie médicale dans l'évaluation médico-légale du traumatisme ostéo-articulaire: une étude prospective randomisée

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Introduction: L'évaluation médico-légale diffère d'une manière significative de l'examen clinique et cela doit être gardé à l'esprit pendant les investigations d'imagerie réalisées. Les principales questions à aborder sont généralement liées à la documentation des blessures, à l'évaluation de la validité des plaintes et des séquelles à long terme potentielles, ainsi qu'au lien entre la lésion et les plaintes cliniques présentées, y compris la possibilité de simulacres. Les modalités d'imagerie employées et les techniques de diagnostic sont d'une importance primordiale dans cette situation. L'étude visait à évaluer la valeur des techniques d'imagerie diagnostique optimisées dans l'évaluation médico-légale du traumatisme ostéo-articulaire.
Matériel et méthodes: Cette étude prospective a inclus 184 patients avec un traumatisme ostéo-articulaire qu'on a présenté pour évaluation médico-légale au Département de Radiologie de l'Université d'État de Médecine et Pharmacie "Nicolae Testemitanu" dans la période Janvier 2015–Décembre 2017. Les sujets ont été répartis au hasard dans l'un des deux groupes d'étude qui ont subi une évaluation médico-légale en utilisant des techniques d'imagerie standard (Groupe A) ou optimisées (Groupe B).
Résultats: Les ajustements techniques et les protocoles d'imagerie optimisés utilisés dans le groupe d'étude B ont permis une meilleure caractérisation et une description plus détaillée de la plupart des blessures, ainsi que la détection de lésions ostéoarticulaires supplémentaires dans plus de 5% des cas.
Conclusions: Compte tenu des nouvelles techniques d'imagerie et des programmes de post-traitement de l'image apparu au cours des dernières années, l'étude fournit un environnement favorable pour la mise à jour du protocole d'imagerie dans l'évaluation médico-légale du traumatisme ostéo-articulaire.
Mots-clés: Traumatisme ostéo-articulaire, évaluation médico-légale.

Gestion de la qualité en radioprotection et justification des études radiologiques diagnostiques: où en sommes-nous?

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Introduction: Dans l'ère actuelle de l'utilisation croissante des rayonnements ionisants à des fins diagnostiques, la gestion de la qualité en radioprotection et la justification des procédures de diagnostic retiennent de plus en plus l'attention des autorités de régulation. L'étude visait à évaluer les implémentations législatives en radioprotection et à justifier les études radiologiques diagnostiques en République de Moldavie et à les relier aux normes et réglementations européennes.
Matériel et méthodes: L'étude comportait une évaluation détaillée des normes et législations existantes en matière de radioprotection délivrées par les autorités de réglementation au niveau national.
Résultats: Les normes et réglementations de base en matière de radioprotection sont définies dans la Résolution Nr. 451 du gouvernement de la République de Moldavie du 24.07.2015 et reflètent la plupart des normes européennes et les recommandations de l'Agence internationale de l'énergie atomique (AIEA). Outre le radiologue réalisant l'étude, la justification des procédures radiologiques diagnostiques est également étudiée par deux autorités indépendantes: l'Agence de Régulation des Activités Nucléaires et Radiologiques (ANRARN) et la Société Nationale d'Assurance Maladie (CNAM). Dans le cadre des réformes en cours dans l'imagerie diagnostique et la radioprotection, la formation formelle des technologues en radiologie a été transférée à l'Université d'État de médecine et de pharmacie "Nicolae Testemitsanu".
Conclusions: Au cours des dernières années, la République de Moldavie a adopté diverses législations pour se conformer aux normes et réglementations européennes. La poursuite de ces réformes devient essentielle pour rester au fait des changements en cours sur le terrain.
Mots-clés: Gestion de la qualité, radioprotection, justification des études radiologiques.

Pièges dans le diagnostic IRM dans le cancer du col de l'utérus

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Introduction: Le cancer du col de l'utérus est un problème de santé mondial important. En République de Moldavie, il s'agit du deuxième cancer le plus fréquent chez les femmes après le cancer du sein. Bien que l'extension latérale directe du paramètre soit généralement facile à reconnaître en imagerie par résonance magnétique (IRM), les lésions situées de manière excentrique dans la partie inférieure du col sont plus difficiles à visualiser, présentant souvent différents pièges diagnostiques. L'étude visait à évaluer les performances IRM et à développer un algorithme optimal pour évaluer le degré d'invasion locale du cancer du col de l'utérus selon la mise en oeuvre de la Fédération Internationale de Gynécologie et d'Obstétrique (FIGO).
Matériel et méthodes: L'étude prospective a inclus 92 patients atteints de cancer du col de l'utérus (morphologiquement confirmé), étudiés par IRM du petit bassin avec et sans gel intravaginal. La précision de divers paramètres a également été estimée.
Résultats: L'IRM avec gel intravaginal a permis une évaluation plus détaillée de la taille de la tumeur et de l'extension locale dans la paroi vaginale, le fornix ou la vessie. La technique a démontré une précision de 93,5% pour la délimitation et le stade de la maladie par rapport à l'IRM sans gel, qui a démontré une précision de 72,8%. Dans 65 cas, le tableau obtenu par IRM en utilisant le gel intravaginal était plus relevant par rapport à celui clinique. Divers cas cliniques et images IRM sont également présentés à titre d'illustration.
Conclusions: L'examen IRM avec gel intravaginal permet l'évaluation optimale de l'extension locorégionale du cancer du col de l'utérus, la mise en place correcte de la tumeur apportant une contribution significative à l'établissement du cours thérapeutique.
Mots-clés: cancer du col de l'utérus, examen IRM, gel intravaginal, la mise en place FIGO.

Imagerie postopératoire de la spondylodèse

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Introduction: Les procédures de fusion du rachis lombaire sont de plus en plus utilisées chez les patients présentant des modifications dégénératives-dystrophiques lombaires. Le choix d'un dispositif de fusion approprié nécessite une évaluation dynamique à travers diverses modalités d'imagerie telles que la radiographie, la tomodensitométrie (TC) ou l'imagerie par résonance magnétique (IRM). L'article présente le rôle des examens d'imagerie pour l'évaluation de divers dispositifs et techniques de fusion utilisés, ainsi que les compilations potentielles associées au processus de fusion de la région lombaire de la colonne vertébrale.
Matériel et méthodes: Un résumé de la littérature a été réalisé en utilisant la base de données PubMed. Les termes de recherche comprenaient la fusion intervertébrale, les procédures de fusion et leurs complications. Les résultats de recherche ont généré plus de 2000 articles en anglais, dont 83 ont présenté des données pertinentes sur les procédures de fusion lombaire et leur imagerie.
Résultats: La radiographie est la méthode la plus couramment utilisée pour évaluer les patients avec des dispositifs de fusion lombaire. Les résultats de l'étude peuvent justifier l'utilisation subséquente d'examens de TC, d'IRM et / ou de médecine nucléaire, puisque l'évaluation d'un patient avec un implant intervertébral implique une approche multimodale. Les méthodes permettent de décrire les caractéristiques d'imagerie des complications potentielles associées à la chirurgie de fusion intervertébrale ainsi que les dispositifs utilisés.
Conclusions: Les techniques d'imagerie jouent un rôle de plus en plus important dans l'évaluation des patients atteints de pathologies lombaires. La connaissance des dispositifs de fusion et des techniques chirurgicales utilisées est un élément nécessaire pour évaluer les résultats de la correction chirurgicale et établir l'évolution thérapeutique.
Mots-clés: imagerie médicale, fusion intervertébrale, spondylodèse.

Optimisation du diagnostic d'imagerie dans les troubles statiques de la colonne vertébrale dans le plan sagittal

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Introduction: Les troubles posturales de la colonne vertébrale sont associés à la perte de la possibilité de maintenir des relations intervertébrales normales à diverses demandes physiologiques. L'apparence de nouvelles techniques d'imagerie, y compris le système EOS, offre de nouvelles possibilités de diagnostic dans ce domaine. Le but de l'étude était d'évaluer les troubles statiques spinaux dans le plan sagittal en utilisant le système EOS.
Matériel et méthodes: Cette étude prospective a inclus 244 patients adultes qui ont adressé pour l'évaluation des dysfonctions posturales de la colonne vertébrale. Tous les patients ont été évalués pour l'équilibre sagittal de la colonne vertébrale à travers le système EOS. Les données étaient corrélées à la fois à la symptomatologie clinique et aux résultats d'autres examens d'imagerie disponibles (radiographie, tomodensitométrie, imagerie par résonance magnétique etc).
Résultats: Le système EOS a permis une caractérisation plus détaillée et une description des perturbations statiques sagittales par rapport aux méthodes d'imagerie traditionnelles. Le système EOS a également permis d'évaluer verticalement l'ensemble de la colonne vertébrale, en évaluant les altérations statiques dans la posture naturelle des patients. La présentation comprend des images obtenues par le biais du système EOS chez des patients présentant diverses pathologies et troubles statiques de la colonne vertébrale dans le plan sagittal.
Conclusions: Actuellement, le système EOS est la seule méthode qui offre la possibilité d'une évaluation intégrée des colonnes vertébrales, à condition que la biomécanique soit reproduite dans la posture naturelle du patient et la possibilité de modélisation biplanaire dans des conditions d'exposition réduite aux rayonnements.
Mots-clés: système EOS, colonne vertébrale sagittale, troubles statiques de la colonne vertébrale.

Dificultăți în diagnosticul cancerului mamar

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Introducere: Cancerul mamar este cea mai frecventă neoplazie la femei (circa un sfert din tumorile maligne diagnosticate la femei), ocupând locul I între cauzele de deces prin cancer în rândul femeilor la nivel mondial. Republica Moldova nu face excepție, datele publicate de Ministerul Sănătății confirmând faptul că cancerul glandei mamare ocupă locul I în structura maladiilor oncologice feminine. Raportul arată că mortalitatea înaltă este determinată, în primul rând, de adresarea bolnavelor în stadii tardive, peste 1/3 din cazuri fiind diagnosticate în stadiul tumoral III sau IV și doar 11,3% în stadiul I. O parte substanțială a deceselor ar putea fi evitată prin utilizarea testelor de diagnostic precoce al proceselor precanceroase.
Conținut: Prezentarea expune dificultățile existente în diagnosticul cancerului mamar atât în Republica Moldova, cât și pe plan internațional. În timp ce mamografia reprezintă o modalitate tradițională, utilizată pe larg în Republica Moldova pentru evaluarea patologiilor mamare, disponibilitatea unor noi tehnici imagistice precum elastografia sau imagistica prin rezonanță magnetică oferă noi posibilități de diagnostic ale cancerului mamar și proceselor precanceroase, precum și stabilirea conduitei terapeutice. Noile tehnici prezintă însă adesea și un nou set de provocări educaționale și de integrare atât pentru medicii imagiști cât și clinicieni, deaceea acestea necesită încadrare în algoritmurile de diagnostic existente în funcție de detaliile și informația pe care o pot furniza. Multiple cazuri clinice cu utilizarea a diverse modalități imagistice sunt prezentate pentru ilustrare.
Concluzii: Noile tehnici imagistice apărute în ultimii ani oferă noi perspective pentru depășirea dificultăților existente în diagnosticul cancerului mamar. Elaborarea unor protocoale imagistice pentru aplicare la nivel național, precum și actualizarea periodică a acestora au o relevanță deosebită în acest context.
Cuvinte-cheie: cancer mamar, dificultăți diagnostice, sistemul BIRADS, modalități imagistice.

Rolul examenului ultrasonografic multiparametric în diagnosticul patologiilor mamare

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Introducere: Examenul ultrasonografic al glandelor mamare este tot mai frecvent utilizat pentru evaluarea patologiilor nedefinitivate la mamografie, precum și ca o investigație de primă intenție la pacientele tinere. Accesibilitatea metodei și volumul tot mai mare de informații care poate fi obținut datorită apariției a noi tehnici ultrasonografice și modernizării aparatajului disponibil necesită o ajustare continuă a protocoalelor imagistice și tehnicilor de investigare.
Conținut: Prezentarea expune o sistematizare a tehnicilor ultrasonigrafice utilizate în evaluarea patologiilor mamare și a semnelor ultrasongrafice întâlnite în diverse patologii. Datele prezentate includ și o serie de puncte-cheie precum tehnica corectă de examinare ultrasonografică a glandelor mamare, semnele ultrasonografice caracteristice formațiunilor de volum ale glandelor mamare și diagnosticul diferențial al acestora, utilizarea examenului Doppler și sonoelastografiei, vizualizarea ganglionilor limfatici ai zonelor regionale de circulație limfatică a glandelor mamare, principalele semne ultrasonografice întâlnite în caracterizarea patologiei difuze a glandelor mamare (forma difuză a mastitei, forma infiltrativă a cancerului), datele ultrasonografice ale glandelor mamare pe fundalul tratamentului etc.
Concluzii: Examenul ultrasonografic multiparametric al glandelor mamare lărgește considerabil posibilitățile diagnosticului diferențial al patologiilor mamare, oferind noi perspective în depistarea precoce a proceselor neoplazice.
Cuvinte-cheie: cancer mamar, patologia glandei mamare, ultrasonografie mamară, sonoelastografie mamară.

Optimizarea diagnosticului imagistic al cancerului de laringe

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Introducere: Particularităţile anatomice ale laringelui prezintă dificultăţi pentru diagnosticul imagistic al cancerului. Acest fapt impune dezvoltarea şi implementarea tehnologiilor noi pentru diagnosticul cancerului de laringe cu aparate mai sensibile, mai puţin costisitoare, cu doze mai mici de radiaţie.
Material şi metode: În acest scop s-a folosit, pentru prima dată, tomosinteza în diagnosticului cancerului de laringe. Tomosinteza permite obţinerea imaginilor sub diferite unghiuri şi modificarea parametrilor de reconstrucţie în scopul refacerii secţiunilor cu diferite planuri focale, iar imaginile sunt stabilite la niveluri diferite, spre deosebire de o singură imagine.
Rezultate: În studiu au fost incluşi 65 de pacienţi cu cancer de laringe verificat morfologic, stadiile I-III, vârsta între 50 – 70 de ani. 21 (32,3%) pacienţi au fost examinaţi utilizând computer-tomografia (CT), 7 (10,7 %) pacienţi – CT cu contrast, 6 (9,2%) pacienţi – investigaţie prin rezonanţă magnetică (IRM). Toţi pacienţii (100%) au fost investigaţi şi prin tomosinteză. În 35 (53,8%) cazuri examenul prin tomosinteză a fost suficient pentru caracterizarea deplină a procesului tumoral.
Concluzii: Investigaţia prin CT sau IRM este indiscutabil mai informativă. Studiul nostru demonstrează însă, că examenul imagistic prin tomosinteză, folosit la prima etapă de diagnostic a cancerului de laringe, permite obţinerea în peste 50% cazuri a informaţiei necesare pentru determinarea gradului de răspândire a procesului tumoral şi tacticii de tratament, astfel decăzând necesitatea de examinare suplimentară prin CT sau IRM. Tomosinteza permite, în special, efectuarea unui număr mare de secvenţe cu o sensibilitate mare şi o doză de radiaţie considerabil mai mică.
Cuvinte-cheie: tomosinteză, cancer de laringe, optimizarea diagnosticului imagistic.

Particularităţile explorărilor imagistice ale abdomenului integru în evaluarea tratamentului pacienţilor cu neoplasme

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Introducere: Explorările imagistice ale abdomenului integru reprezintă metode de elecţie în depistarea formaţiunilor neoplazice. Astfel, în contextul evaluării tratamentului în aceste patologii, trebuie să utilizăm tehnici orientate spre optimizarea datelor imagistice, astfel minimizând riscurile şi furnizând cea mai bună îngrijire clinică a pacienţilor oncologici. Studiul are ca scop evaluarea particularităţilor explorărilor imagistice ale pacienţilor cu neoplasme ale abdomenului integru pentru optimizarea managementului clinico-imagistic.
Material şi metode: Revista literaturii de specialitate a fost efectuată utilizând baza de date PubMed în februarie 2018. Noţiunile de căutare au inclus: stadializarea proceselor tumorale, tehnici imagistice standardizate, optimizarea algoritmului imagistic, răspunsul la tratamentul chimioterapeutic. Rezultatele căutarii au generat peste 1500 de articole în limba engleză, 99 dintre acestea prezentând date relevante referitor la particularităţile explorărilor imagistice ale abdomenului integru în evaluarea tratamentului pacienţilor cu neoplasme.
Rezultate: Elaborarea tehnicilor şi metodelor conţinând detalii strategice pentru evaluarea răspunsului bolii la terapie au fost proiectate şi executate datorită colaborării şi comunicării dintre medicii oncologi şi medicii radiologi-imagişti. Astfel, necesitatea "personalizării" şi evaluării imagistice dinamice a răspunsului proceselor neoplazice la terapia administrată sunt direct proporţionale cu design-ul protocoalelor imagistice şi interpretarea rezultatelor acestora.
Concluzii: Optimizarea protocoalelor imagistice cu o abordare individualizată, precum şi comunicarea eficientă a medicului imagist cu echipa medico-chirurgicală, implicată în managementul pacienţilor oncologici, au o importanţă vitală pentru îmbunătăţirea continuă a calităţii asistenţei medicale şi minimizării efectelor adverse.
Cuvinte-cheie: stadializarea proceselor tumorale, tehnici imagistice standardizate, optimizarea algoritmului imagistic, răspunsul la tratamentul chimioterapeutic.

Uterul unicorn: metode moderne de vizualizare

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Introducere: Uterul unicorn reprezintă o anomalie foarte rară a ducturilor Műlleriene și în structura acestor anomalii se întâlnește de la 2,4 până la 13%. Anomalia se asociază cu cornul rudimentar în 74-90%. Lucrarea a avut ca scop stabilirea rolului ultrasonografiei (USG 2D și 3D) și imagisticii prin rezonanță magnetică (IRM) în diagnosticul uterului unicorn.
Material și metode: Studiul retro- și prospectiv a cuprins 12 paciente consultate în secția ginecologie chirurgicală a IMSP Institutului Mamei și Copilului. Diagnosticul a fost confirmat prin examen USG 2D, 3D și IRM. Caracteristica subclaselor uterului unicorn a fost bazată pe clasificările AFS (1988) și ESHRE/ESGE (2013).
Rezultate: Vârsta medie a pacientelor cu uter unicorn a fost de 28,9±1,4 ani (95% CI: 25,75-32,08). În cazul cornului rudimentar (IIa, IIb, IIc) pacientele au fost mai tinere (p=0,0848) decât în cazul lipsei acestuia (IId): vârsta medie de 26,1±2,7 ani (95% CI: 18,60-33,40) *vs*. 31,1±1,2 ani (95% CI: 28,12-33,88), respectiv. Manifestările clinice înregistrate au fost: sterilitate, dismenoree, boală avortivă, sarcină stagnată în cornul rudimentar. Diagnosticul uterului unicorn a fost bazat pe USG 2D (n=5), USG 2D+3D (n=4) și USG+IRM (n=3). Clasa IId a fost stabilită în 7 (58,5%) cazuri, uter unicorn cu corn uterin rudimentar (IIa, IIb, IIc) – 5 (41,7%), cavitar (U4a) – 4 (80%), noncavitar (U4b) – 1 (20%). In 3 cazuri a fost efectuată înlăturarea cornului rudimentar.
Concluzii: Asocierea metodelor tradiționale imagistice (USG 2D și histerosalpingografia) cu USG 3D și IRM permite efectuarea corecției chirurgicale oportune și prevenirea complicațiilor în cazul sarcinii în cornul rudimentar.
Cuvinte-cheie: uter unicorn, corn rudimentar, ultrasonografie, imagistică prin rezonanță magnetică.

Aportul ultrasonografiei în aprecierea gradului de severitate al apendicitei acute

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Introducere: Diagnosticul clinic al apendicitei acute este adesea dificil, conducând la intervenții chirurgicale inoportune sau complicații severe. Lucrarea a avut ca scop evaluarea semnelor ultrasonografice în funcție de gradul de severitate al procesului inflamator în diferențierea apendicitei acute necomplicate și complicate.
Material și metode: Studiul a inclus 31 de cazuri cu concluzii ecografice de apendicită acută din 434 de pacienți cu durere în fosa iliacă dreaptă. Evaluarea ecografică a inflamației apendiculare a inclus următorii parametri: diametrul apendicular extern; grosimea, aspectul, și vascularizarea parietală; distensia apendicelui; prezența colecției periapendiculare și ecogenitatea țesutului adipos periapendicular. Toți pacienții au suportat tratament chirurgical, concluziile ecografice fiind comparate cu datele intraoperatorii și histologice.
Rezultate: Diagnosticul a fost confirmat la 25 din 31 de pacienți cu concluzia ecografică de apendicită acută, iar 4 cazuri au fost nediagnosticate (Se 86%, Sp 98%, VPP 77% și VPN 99%). Au fost constatate 10 cazuri de apendicită acută complicată, inclusiv un caz complicat cu perforație. În lipsa perforației apendiculare, deteriorarea stratului ecogen submucos a reprezentat cel mai important indicator al apendicitei complicate, fiind vizualizat în 9 cazuri, dar și în 2 cazuri necomplicate (Se 90%, Sp 86,7%, VPP 81,8%, VPN 92,8%, RP+ 6,4), urmat de lipsa vascularizării parietale, vizualizată în 8 cazuri de apendicită complicată și, respectiv, 5 cazuri necomplicate (Se 80%, Sp 66,7%, VPP 61,5%, VPN 83,3%, RP+ 2,4).
Concluzii: În pofida unor limite existente, ultrasonografia reprezintă metoda de primă intenție, care permite un diagnostic cu acuratețe satisfăcătoare și determinarea gradului de severitate al apendicitei acute și a complicațiilor acesteia. Deteriorarea stratului ecogen submucos parietal și lipsa vascularizării parietale sunt criterii importante de diagnostic al apendicitei acute complicate.
Cuvinte cheie: ultrasonografie, apendicită acută complicată.

Rolul tomosintezei digitale a toracelui în diagnosticul cancerului pulmonar

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Introducere: Tomosinteza toracelui permite obținerea unor imagini volumetrice la o doză de iradiere redusă, oferind noi perspective pentru pacienții care necesită investigații repetate. Studiul a avut ca scop evaluarea performanței tomosintezei digitale a toracelui în diagnosticul cancerului pulmonar.
Material și metode: Studiul a inclus 723 de pacienți cu adresare primară, cărora le-a fost efectuată tomosinteza digitală a toracelui în cadrul departamentului de Imagistică Medicală a Institutului Oncologic în perioada octombrie 2015–decembrie 2017. Investigațiile au fost efectuate utilizând aparatul *Sonial-Vision,* care a permis achiziția a peste 40 de secțiuni tomografice în funcție de regiunea examinată și indicațiile clinice.
Rezultate: Tomosinteza digitală a relevat informații importante referitor la formațiunile pulmonare cu dimensiuni mai mari de 3 mm, microcalcinatelor cu dimensiuni de circa 2-3 mm, precum și o serie de alte detalii cum ar fi evidențierea focarelor în sticlă mată sau spiculelor maligne fine. Majoritatrea patologiilor au fost vizualizate pe câteva secțiuni, fapt care a sporit veridicitatea diagnosticului. Metoda a fost de asemenea utilă în stadializarea procesului tumoral prin caracterizarea ganglionilor limfatici regionali, determinarea afectării bronhiilor intrapulmonare și prezenței focarelor secundare subcentimetrice. Diverse cazuri clinice cu imagini obținute prin tomosinteză digitală sunt de asemenea prezentate.
Concluzii: Tomosinteza digitală a toracelui oferă informații relevante în diagnosticul și stadializarea cancerului pulmonar, având unele avantaje distincte precum achiziția rapidă și o doză de iradiere redusă. Precizarea indicațiilor și stabilirea unor criterii în vederea elaborării unui protocol imagistic național necesită însă noi studii în domeniu.
Cuvinte-cheie: tomosinteza digitală a toracelui, cancer pulmonar, noduli pulmonari.

Managementul depistării tuberculozei și cancerului pulmonar în sistemul medical integrat

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Introducere: În cadrul examenului profilactic, utilizând complexul radiodiagnostic digital PULMOSCAN la 15125 de persoane din grupurile de risc sporit de îmbolnăvire a fost identificată structura factorilor medico-sociali nefavorabili a pacienților cu tuberculoză și cancer pulmonar, depistați prin screening organizat de Institutul de Ftiziopneumologie "Chiril Draganiuc". Studiul a avut ca scop optimizarea depistării tuberculozei și cancerului pulmonar în sistemul medical integrat, determinarea criteriilor medico-sociale de formare a grupurilor de risc crescut de îmbolnăvire cu tuberculoză și cancer pulmonar.
Material și metode: Screeningul profilactic al persoanelor din grupurile de risc a fost realizat, utilizând complexul radiografic digital mobil "Pulmoexpres".
Rezultate: În cadrul screeningului a 15125 de persoane din contingentele de risc sporit de îmbolnăvire au fost depistați 2026 (13,4%) pacienți cu patologie pulmonară. Tuberculoza pulmonară evolutivă a fost constatată la 114 (7,5‰) din numărul total de persoane examinate, sechele de tuberculoză au fost depistate în 1742 (15,2‰) cazuri. La 158 (10,5‰) de persoane au fost depistate modificări radiologice sugestive proceselor neoplastice ale organelor toracelui, inclusiv cancer periferic – la 87 (5,8‰), cancer central – la 20 (1,3‰), tumori benigne – la 39 (2,6‰) pacienți. Rezultatele acestui studiu au demonstrat rolul important și oportunitatea depistărilor radiologice digitale "țintite" de "screening" în anumite teritorii și colectivități cu potențial epidemiologic al tuberculozei crescut. A fost identificată structura factorilor medico-sociali nefavorabili ai pacienților cu tuberculoză și cancer pulmonar, depistați în cadrul acestui screening.
Concluzii: Integrarea acțiunilor antituberculoase în activitatea întregii rețele medico-sanitare determină prioritățile în prevenirea și combaterea tuberculozei și cancerului pulmonar în anumite teritorii cu potențial epidemiologic crescut, care va contribui la reducerea poverii acestor maladii în Republica Moldova.
Cuvinte-cheie: tuberculoză pulmonară, cancer pulmonar, sistem medical integrat.

Rolul CT-Angiografiei în procesul de evaluare al donatorilor vii de ficat

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Introducere: Transplantul hepatic este unicul tratament efectiv la pacienții cu patologii hepatice în stadiul terminal. Selecția corectă a donatorilor este esențială atât pentru diminuarea riscurilor de apariție a complicațiilor și mortalității donatorilor, cât și pentru creșterea ratei de supraviețuire a grefei hepatice. Este cunoscută o variabilitate mare a anatomiei vasculare hepatice, de aceea imagistica preoperatorie a donatorilor este indispensabilă în selecția acestora și în planificarea etapei chirugicale. Scopul studiului a fost aprecierea rolului angiografiei prin tomografie computerizată (CT-angiografie) în procesul de evaluare preoperatorie și selecție a donatorilor.
Material și metode: Pe parcursul perioadei 2014-2017 au fost examinați prin CT-angiografie 54 de potențiali donatori de ficat cu aprecierea angioarhitectonicii hepatice și efectuarea volumetriei hepatice.
Rezultate: Volumul mediu hepatic total a fost de 1761,9 cm^3, variind între 784–3975 cm^3. Volumul mediu al ficatului restant (lobul stâng) a fost de 572,9 cm^3, variind între 344–1131 cm^3. Volumul mediu al grefei hepatice (lobul drept) a fost de 1188,9 cm3, variind intre 301,8-2844cm^3. În urma efectuării CT-angiografiei, 22 (40,7%) candidați au fost excluși din lista de donator. Raționamentele pentru excludere au inclus: volumul mic al ficatului restant, variante de vascularizare hepatică, tuberculoză, infecții sau tumori hepatice depistate accidental.
Concluzii: CT-angiografia este metoda imagistică de elecție în evaluarea donatorilor de ficat, permițând aprecierea exactă a angioarhitectonicii hepatice și a volumului hepatic.
Cuvinte-cheie: transplant de ficat, anatomie vasculară hepatică, CT-angiografie, volumetrie hepatică.

Tomosinteza digitală în diagnosticul și monitorizarea tuberculozei organelor respiratorii

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Introducere: Tomosinteza digitală (TD) oferă noi perspective în imagistica medicală și ftiziopneumologia contemporană. Scopul acestui studiu a fost evaluarea posibilităților TD în diagnosticul și monitorizarea tratamentului tuberculozei organelor respiratorii.
Material și metode: Au fost studiate sursele bibliografice selectate din bazele de date PubMed, EMBASE și al. A fost analizată experiența proprie de 2460 examinări radiologice, efectuate în anul 2017 la 935 de adulți și 295 de copii prin metoda TD cu scop de diagnostic și monitorizare a tuberculozei organelor respiratorii. A fost utilizat utilajul SONIALVISION model G4 SHIMADZU.
Rezultate: Prezentarea expune istoria dezvoltării TD, particularitățile reconstrucției imaginii, precum și posibilitățile și perspectivele TD în specificarea diagnosticului modificărilor patologice apreciate la radiografia pulmonară digitală. Datorită vizualizării stratificate și capacității înalte de rezoluție, TD a relevat detalii suplimentare referitor la caracteristicile opacităților și distrucțiilor pulmonare de dimensiuni mici, semne de diseminare micronodulară limitată, modificări pleurale, leziuni ale coastelor etc. TD a facilitat, de asemenea, specificarea caracterului modificărilor patologice, evaluarea stării țesutului pulmonar adiacent și a structurilor anatomice învecinate. Adițional, TD a permis aprecierea mai detaliată a dinamicii schimbărilor tuberculoase din pulmoni pe fundal de chimioterapie, facilitând strategia terapeutică.
Concluzii: TD oferă noi detalii în diagnosticul modificărilor tuberculoase pulmonare și aprecierea dinamicii acestora pe fundal de tratament chimioterapic. Studiul posibilităților TD în vizualizarea diferitor forme ale tuberculozei organelor respiratorii are o relevanță deosebită atât practică cât și științifică.
Cuvinte-cheie: tomosinteză digitală, radiografie digitală, tuberculoza organelor respiratorii, diagnosticul tuberculozei, monitorizarea tratamentului antituberculos.

Abordare endovasculară a pacienților cu picior diabetic

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Introducere: Angiopatia diabetică și complicațiile septice sunt factorii care influențează rata amputațiilor la pacienții cu diabet zaharat. Amputațiile majore (de coapsă și gambă) influențează rata mortaltității în rândul pacienților cu picior diabetic. Studiul a avut ca scop evaluarea rezultatelor de angioplastie transluminală percutană cu balon la pacienții cu picior diabetic.
Material și metode: Au fost analizate retrospectiv 180 de cazuri de angioplastie a arterelor tibiale la pacienții cu picior diabetic, efectuate în cadrul Spitalului Clinic Republican în perioada 2016-2017. Pacienții au fost evaluați prin Duplex scanare, CT angiografie, angiografie cu substracție digitală. Angioplastiei de *out-flow* au fost supuși doar pacienții cu gradul de ischemie III (ischemie de repaos) – 56 de pacienți și IV Fotain (prezența ulcerației sau gangrenei) – 104 pacienți.
Rezultate: Angioplastii cu restabilirea fluxului trivascular (artere tibiale și peronee) au fost posibile în 25 de cazuri, bivascular – în 79 de cazuri, monovascular – în 66 de cazuri. În 10 cazuri revascularizarea a fost cu eșec din cauza calcinozei pronunțate și trombozei acute intraoperatorii. La 12 pacienți au survenit complicații majore, dintre care 4 pacienți au decedat. Amputații majore au fost efectuate la 4 pacienți.
Concluzii: Datele demonstrează că angioplastia de artere tibiale la pacienții cu picior diabetic, însoțită de prelucrarea corespunzătoare a focarului septic, permite scăderea ratei de amputații majore și creșterea speranței de viață la pacienții cu picior diabetic.
Cuvinte-cheie: angioplastie, picior diabetic, chirurgie endovasculară.

Elaborare metodică pentru utilizarea sistemului TIRADS în examinarea ecografică a glandei tiroide

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Introducere: Necesitatea caracterizării cât mai complete a leziunilor nodulare ale glandei tiroide a dus la elaborarea mai multor clasificări ale acestora. Sistemul de clasificare TIRADS (Thyroid Image Reporting and Data System), adoptat recent de mai multe instituții, include un sistem de stratificare a riscurilor pentru clasificarea leziunilor tiroidiene și are ca scop standardizarea clasificării pe plan internațional.
Material și metode: Studiul a inclus 1200 de pacienți cu patologii ale glandei tiroide (vârsta cuprinsă între 18-60 de ani), investigați în secția de Ultrasonografie Generală a Centrului Republican de Diagnosticare Medicală în perioada 2016-2017. Examenul ultrasonografic al glandei tiroide și ganglionilor limfatici regionali a fost efectuat utilizând sisteme ultrasonografice *Hitachi Prerius* și *Logiq E9,* dotate cu transductoare liniare având frecvența de 5,0-7,5 MHz. Diverse tehnici precum ultrasonografia bidimensională, examenul Doppler și sonoelastografia au fost utilizate atât pentru stabilirea diagnosticului inițial, cât și pentru evaluarea în dinamică a rezultatelor terapiei aplicate.
Rezultate: Datele studiului au permis caracterizarea focarelor suspecte în patologia glandei tiroide și corelarea cu gradul de suspiciune din sistemul TIRADS, precum și formularea principiilor de interpretare. Rezultatele au permis de asemenea elaborarea unor recomandări metodice pentru medicii imagiști, endocrinologi și chirurgi implicați în diagnosticul sau tratamentul patologiilor tiroidiene. Imagini reprezentative ale patologiilor tiroidiene, obținute prin diverse tehnici ultrasonografice, sunt de asemenea prezentate pentru corelarea cu sistemul de clasificare TIRADS.
Concluzii: Utilizarea sistemului TIRADS permite o mai bună standardizare a leziunilor tiroidiene conform riscului pe care îl prezintă, precum și reducerea numărului de biopsii și a intervențiilor chirurgicale neargumentate.
Cuvinte-cheie: sistemul TIRADS, patologia glandei tiroide, ultrasonografie.

Imagistica în patologia aortei – viziunea chirurgului cardiovascular

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Introducere: Bolile cardiovasculare au devenit principala cauză de deces în lume, în pofida progreselor fără precedent în diagnosticul și tratamentul acestor afectiuni. Imbătrânirea populației este asociată cu creșterea numărului bolnavilor cu afecțiuni ale aortei.
Conținut: În chirurgia cardiovasculară am întâlnit relativ frecvent următoarele grupuri de patologii ale aortei: boala obstructivă (principala cauză fiind ateroscleroza aortei și a vaselor magistrale emergente de la aortă), anevrismele aortei, disecția aortei și diverse malformații ale aortei. Pentru a putea fi tratate cu success, în marea majoritate a cazurilor prin metode chirurgicale sau endovasculare, bolile aortei necesită a fi corect și precis diagnosticate. Astăzi, progresul tehnologic oferă accesul la o varietate de metode imagistice care permit examinarea aortei,

precum ecocardiografia transtoracică și transesofagiană, radiografia toracică, tomografia computerizată cu substanță de constrast, angiografia, imagistica prin rezonanță magnetică (IRM) și diverse tehnici ale acesteia. Alegerea metodei optime de evaluare și monitorizare reprezintă însă adesea o provocare pentru clinicieni, decizia bazându-se pe specificitatea, sensibilitatea de testare și, totodată pe raportul cost-eficiență.
Concluzii: Patologia aortică este în plină expansiune, iar managementul eficient necesită o colaborare strânsă a clinicianului, medicului imagist, cardiologului intervenționist și a chirurgului cardiovascular.
Cuvinte-cheie: boli cardiovasculare, patologii aortice, diagnostic imagistic, colaborare interdisciplinară.

Măsurarea rezervei fracționale de flux pentru aprecierea funcțională a severității stenozelor coronariene

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Introducere: Coronarografia este considerată „standardul de aur" în evaluarea morfologică a lumenului arterelor coronare epicardice. Deși imagistica non-invazivă avansează rapid, rezoluția temporală și spațială a angiografiei coronariene este de neîntrecut și, prin urmare, va rămâne un instrument de bază pentru cardiologii intervenționiști și cardiochirurgi. Totuși, în pofida preciziei sale topografice, angiografia este limitată în cuantificarea repercusiunilor funcționale ale stenozelor coronariene. Mai multe meta-analize au accentuat că anume impactul ischemic al îngustării aterosclerotice este factorul de prognostic cel mai important la pacienții cu boală coronariană documentată.
Conținut: Prezentarea expune rolul și modalitățile de măsurare a rezervei fracționale de flux (FFR), ce reprezintă un indice invaziv de semnificație hemodinamică a severității stenozei cu o precizie diagnostică similară scintigrafiei de perfuzie miocardică, dar cu rezoluție spațială mai bună. FFR se măsoară în timpul coronarografiei, cu ajutorul unei sonde dedicate, prevăzute cu un transductor, care determină raportul dintre presiunea poststenotică și cea prestenotică, în timpul hiperemiei miocardice maxime. Valoarea FFR sub 0,8 este considerată a fi asociată cu ischemie miocardică. Măsurarea FFR în stenozele coronariene intermediare este recomandată și în ghidurile actuale de revascularizare miocardică.
Concluzii: Intervențiile coronariene percutanate convenționale se efectuează pe baza estimării vizuale a stenozelor. Măsurarea FFR în timpul coronarografiei, aduce un plus de informație în luarea deciziei de revascularizare miocardică. Aplicarea mai pe larg a acestei metode aduce beneficiu atât clinic, cât și economic în mangementul pacienților cu boală coronariană.
Cuvinte-cheie: coronarografie, rezervă fracțională de flux, FFR, boală coronariană, revascularizare miocardică.

Estimarea corelației între hipertensiunea pulmonară și parametrii clinico-funcționali la pacienții cu bronhopneumopatie obstructivă cronică

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Introducere: Hipertensiunea pulmonară (HP) este o complicație nefavorabilă la pacienții cu bronhopneumopatie obstructivă cronică (BPOC). Studiul a avut ca scop evaluarea corelației între HP și parametrii clinico-funcționali în BPOC.
Material și metode: Au fost examinați 156 de pacienți cu BPOC (conform standardului GOLD) cu vârsta între 40-70 de ani (media 50,5±4,34 ani) și durata medie a maladiei de bază de 12,5±5,54 ani, cu utilizarea metodelor imagistice medicale (EcoCG, Duplex ultrasonor, fotopletismografie și CT).
Rezultate: S-a relevat corelarea semnificativă și fidelă între HP și timpul de accelerare a fluxului sistolic în tractul de ejecție al ventriculului drept (r=0,925, p=0,0001), gradul de regurgitare tricuspidă (r=0,46, p=0,0001), DLCOc (r=0,35, p=0,0055) și volumul alveolar (r=0,66, p=0,001). Grosimea peretelui anterior al ventriculului drept și diametrul telediastolic al ventriculului drept se arată în corelație directă semnificativă cu presiunea sistolică în artera pulmonară (PsistAP): r=0,404, p=0,0001 și, respectiv, r=0,359, p=0,0001. Gradul insuficienței respiratorii, gradul insuficienței cardiace, intensitatea dispneei (mMRC), fracția de ejecție a ventriculului stâng, durata efortului fizic și indicele spirometric VEMS s-au corelat semnificativ cu PsistAP și PmedAP (p<0,001). Pentru pronosticul vital și supraviețuirea pacienților cu BPOC sunt de importanță majoră legăturile semnificative depistate între funcția endotelială, indicatorii de rigiditate arterială și PsistAP.
Concluzii: Cel mai mare coeficient de corelare s-a constatat între HP și timpul de accelerare a fluxului sistolic în tractul de ejecție al ventriculului drept, gradul de regurgitare tricuspidă, DLCOc și volumul alveolar. S-au relevat interconexiuni ale hiperinflației pulmonare cu remodelarea arterelor pulmonare, precum și cu apariția semnelor certe de HP.
Cuvinte-cheie: hipertensiune pulmonară, BPOC, imagistică medicală, parametri clinico-funcționali.

Evaluarea deformării globale a miocardului ventricular prin rezonanță magnetică cardiacă la voluntarii sănătoși

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Introducere: *Feature Tracking* (FT) este o tehnică utilizată pentru evaluarea deformării miocardului în baza imaginilor de rezonanță magnetică cine steady-state free precession (SSFP). Scopul acestei lucrări a fost determinarea parametrilor deformării globale a miocardului ventriculului stâng și ventriculului drept la voluntari sănătoși, prin utilizarea algoritmului *Feature Tracking*.
Material și metode: Imaginile cine SSFP au fost obținute cu aparatul Siemens Magnetom Skyra 3T, fiind procesate în axele orizontală lungă (HLA), verticală lungă (VLA) și scurtă (SAX) ale ventriculului stâng. Evaluarea deformării miocardului a fost efectuată cu modulul Feature Tracking, Segment, Medvisio. Au fost calculate deformărea globală longitudinală (GLS), radială (GRS) și circumferențială (GCS) a miocardului ventriculului stâng și ventriculului drept. Datele au fost prezentate prin valoarea medie și devierea standard.
Rezultate: Valorile obținute pentru ventriculul stâng au fost următoarele: HLA GLS = -18 ± 3, VLA GLS -20 ± 4, HLA GRS = 23 ± 11, VLA GRS = 34 ± 13, SAX GRS = 20 ± 8, SAX GCS = -20 ± 3. Valorile obținute pentru ventriculul drept au fost următoarele: HLA GLS = -19 ± 3, SAX GCS = -13 ± 2.
Concluzii: *Feature tracking* este o metodă accesibilă și rapidă de evaluare a deformării globale a miocardului. Au fost obținute valorile deformării globale a miocardului ventricular la voluntarii sănătoși.
Cuvinte-cheie: rezonanță magnetică cardiacă, feature tracking, deformarea miocardului.

Computer tomografia și rezonanța magnetică în izolarea venelor pulmonare la pacienții cu fibrilație atrială

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Introducere: Ablația transcateter a atriului stâng cu izolarea venelor pulmonare (IVP) este o procedură de tratament a fibrilației atriale (FA). În planificarea procedurii de ablație și managementul fibrilației atriale sunt utilizate computer tomografia (CT) și rezonanța magnetică (RM).
Conținut: Componentul esențial în evaluarea preoperatorie este CT / RM angiografia. Vizualizarea 3D a venelor pulmonare, variantelor anatomice de joncțiune cu atriul stâng și dimensiunile ostiumurilor venoase sunt necesare pentru segmentarea preprocedurală. Volumul atriului stâng este criteriu pentru indicație la izolarea venelor pulmonare și criteriu de prognostic pentru rata succesului procedurii. CT și RM permit evaluarea volumului atriului stâng prin algoritmul de sumare a secțiunilor, considerat cel mai exact. Laboratoarele expert în proceduri de izolare a venelor pulmonare la pacienții cu fibrilație atrială, utilizează pe larg evaluarea fibrozei peretelui atriului stâng, pentru ghidarea procedurii de ablație și prognosticul succesului terapeutic. Achiziționarea 3D în secțiuni fine a contrastării tardive a miocardului atriului stâng prin RM cardiacă permite evaluarea fibrozei, segmentarea preprocedurală și evaluarea densității fibrozei postprocedurale.
Concluzii: CT și RM vizualizează angiografic anatomia și variantele anatomice ale joncțiunii venelor pulmonare cu atriul stâng, elemente țintă ale procedurii de izolare a venelor pulmonare în fibrilație atrială. Ambele metode permit evaluarea volumului atriului stâng, prin algoritmul de sumare a secțiunilor, care este cel mai exact. RM cardiacă adițional vizualizează fibroza miocardului atriului stâng, importantă pentru ghidarea procedurală și evaluare postprocedurală.
Cuvinte-cheie: vene pulmonare, fibrilație atrială, computer tomografie, rezonanță magnetică, angiografie, fibroza atriului stâng, volumul atriului stâng.

Endometrioza cicatricei postoperatorii: caracteristici Doppler-ultrasonografice

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Introducere: Endometrioza cicatricei postoperatorii (ECP) este o patologie rară, diagnosticul fiind adesea dificil și în mare parte dependent de simptomatologia ciclică.
Material și metode: Studiul se bazează pe analiza retrospectivă a 34 de cazuri de ECP supuse tratamentului chirurgical în perioada 1991–2017. Vârsta pacientelor a variat între 22-44 de ani, în mediu fiind de 30,1±0,9 ani (95% CI:28,23-32,06).

Rezultate: Aspectele imagistice ale ECP au inclus: formațiuni ovoide hipoecogene, neomogene, contur neregulat hiperecogen. Dimensiunile ECP la examenul ultrasonografic au variat de la 3,6 mm până la 48,7 mm, dimensiunea maximă fiind de 23,9±2,7 mm (95% CI:18,25–29,45), iar cea minimă de 15,9±2,1 mm (95% CI:11,65–20,18). Caracteristicile dopplerografice au variat în funcție de dimensiunile endometrioamelor: la cele mici cu absența fluxului sau o vascularizare nesemnificativă la periferie, la cele de dimensiuni mari – cu prezența vascularizării la periferie și în centrul formațiunii cu un grad diferit de intensitate. Diametrul vasului aferent a constituit – 1,4±0,2 mm. A fost utilizat scorul dopplerografic: 0 puncte – vascularizare absentă (n=1, 8.3%); 1 punct – vascularizare slabă (n=7, 63.6%); 2 puncte – vascularizare medie și majoră (n=4, 36.4%). Gradul mediu de vascularizare a fost de 1,4±0,2 puncte.
Concluzii: Metodele imagistice dețin un rol important în stabilirea diagnosticului preoperator cu determinarea gradului de extindere a procesului în țesuturi. În cazul suspiciunii de ECP, îndeosebi în lipsa simptomatologiei ciclice, este necesar de inclus ultrasonografia cu examen Doppler în algoritmul diagnostic.
Key words: endometrioza cicatricei postoperatorii, ultrasonografie, dopplerografie.

Semnele funcționale și radiologice ale hiperinflației pulmonare la pacienții cu BPOC

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Introducere: Prognosticul bronhopneumopatiei obstructive cronice (BPOC) este determinat de gradul exprimării obstrucției bronhice și evoluția emfizemului pulmonar. Scopul lucrării a fost evaluarea caracteristicilor funcționale și semiologiei radiologice ale emfizemului pulmonar la pacienții cu BPOC.
Material și metode: Au fost examinați 156 de pacienți cu BPOC prin spirometrie, bodypletismografie, radiografie și tomografie computerizată pulmonară.
Rezultate: La pacienții cu BPOC ușoară nu au fost depistate perturbări ale tranzitului bronșic (FVC=89%, VEF1=78%, IT=70%, V25-75=67%, TLC mărit moderat 119%, RV moderat crescut 159%). Examenul radiologic al acestei categorii de pacienți nu a depistat modificări patologice. Obstrucția bronhică la pacienții cu BPOC moderată s-a manifestat prin hiperinflație pulmonară (FVC=78%, VEF1=61%, IT=65%, PEF=54%, V25-75=45%, TLC a constituit 123% datorită majorării RV până la 242%). Semiologia radiologică a emfizemului pulmonar la 22 (79%) pacienți cu hiperinflație moderată a inclus hipertransparență, aplatizarea cupolei diafragmatice, lărgirea spațiului retrosternal și retrocardiac. La pacienții cu BPOC severă a fost evaluată corelarea dintre tulburările funcționale și gradul de exprimare a modificărilor morfologice, depistate radiologic. Au fost depistate perturbări severe ale tranzitului bronhial: FVC=65%, VEF1=32%, IT=41%, PEF=19%, V25-75=19%, TLC=141%, RV=292%. Radiologic s-a remarcat o exprimare pronunțată a semnelor de hiperinflație: hipertransparență pulmonară generalizată, diminuarea desenului bronho-vascular, evoluție progresivă blistere emfizematoase. Modificările funcționale au relevat perturbări severe: FVC=47%, VEF1=21%, IT=39%, PEF=13%, V25-75=7%, RV=347,4%, TLC = 159,5%.
Concluzii: Metoda sigură de confirmare a emfizemului pulmonar și a gravității acestuia este evaluarea funcțională și radiologică (majorarea RV și TLC). Examenul radiologic a fost obligatoriu în stabilirea diagnosticului de BPOC.
Cuvinte-cheie: hiperinflație pulmonară, BPOC, imagistică medicală, parametri clinico-funcționali.

Tuberculoza și tumorile organelor toracelui: aspecte interdisciplinare

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Introducere: Optimizarea eficacității programelor de screening și algoritmului diagnostic au o relevanță tot mai actuală pentru fortificarea activităților interdisciplinare ale serviciilor de ftiziopneumologie și oncologie în combaterea tuberculozei (TB) și cancerului pulmonar, reprezentând și scopul acestui studiu.
Material și metode: Analiza retrospectivă a datelor statistice despre epidemiologia TB sistemului respirator, a fișelor medicale și rezultatelor investigațiilor radiologice ale pacienților investigați în cadrul Institutului de Ftiziopneumologie.
Rezultate: Anual în Republica Moldova se înregistrează mai mult de 3000 de cazuri noi de TB a sistemului respirator, în medie 300 de pacienți decedând de TB. Incidența cazurilor noi de TB a sistemului respirator, în anii 2016 și 2017, a alcătuit 70,5 și, respectiv, 66,7 la 100000 populație. Mortalitatea prin TB (toate formele clinice) a reprezentat 9,1 și 7,9 la 100000 populație. Integral constatăm o scădere treptată a incidenței globale a tuberculozei în ultimii ani, dar o structură nefavorabilă a formelor clinice de TB. În ultimii 2 ani din Clinica institutului au fost externați 4130 de pacienți, dintre care 61 (1,5%) cu diagnosticul de cancer pulmonar. Combinarea TB pulmonare active și cancerului pulmonar a fost depistată în 1,23% cazuri, mai frecvent fiind înregistrate TB pulmonară infiltrativă și cancerul pulmonar central. De menționat este și faptul că cancerul pulmonar central a fost depistat mai tardiv în cadrul TB pulmonare, cu o evoluție nefavorabilă, ambele maladii agravându-se reciproc prin progresia cancerului și o eficacitate redusă a tratamentului antituberculos.
Concluzii: Implementarea programelor de screening și tehnologiilor diagnostice performante vor contribui la stabilirea oportună a diagnosticului corect și tratamentului adecvat pacienților cu tuberculoză și cancer pulmonar.
Cuvinte-cheie: tuberculoză pulmonară, cancer pulmonar, serviciu de ftiziopneumologie, imagistică medicală.

Managementul bolilor nespecifice ale aparatului respirator și probleme actuale în acordarea asistenței medicale primare

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Introducere: Bolile nespecifice ale aparatului respirator (BNAR) ocupă un loc de frunte în structura incidenței, prevalenței și mortalității populației adulte. Scopul cercetării a fost aprecierea prevalenței BNAR populației mature și volumului acordării asistenței medicale pacienților aflați sub supravegherea medicului de familie.
Material și metode: Au fost analizate datele statistice oficiale în anii 2014-2016.
Rezultate: Prevalența BNAR acute și cronice a populației mature, conform materialelor adresărilor pacienților la medicul de familie în perioada evaluată, s-a aflat practic la un nivel de 22,0 la 1000 populație. Conform ratei morbidității, rezultatelor investigațiilor clinico-funcționale și radiologice, pacienții cu BNAR, s-au repartizat în modul următor: pneumonie, bronhopneumopatie cronică obstructivă, astm bronșic, pneumopatii interstițiale difuze (PID), supurații pulmonare. Formele nozologice evaluate constituie 90-95% din BNAR a pacienților, care s-au adresat la medic, din ei 15,5 la 1000 populație matură se aflau sub supravegherea medicului de familie. Între BNAR cronice mai frecvent se întâlnesc bronșita cronică, bronhopneumopatia cronică obstructivă, astmul bronșic, boala bronșiectatică. Examenul radiologic al pacienților cu BPOC: inițial apare doar accentuarea desenului peribronhovascular, ulterior hipertransparență. În formele avansate, hilurile cu aspect pseudotumoral sunt mărite, vascularizația periferică este redusă, iar cupolele diafragmatice sunt coborâte și cu mobilitate scăzută. Diversitatea caracteristicilor radiologice PID reprezintă paterne: modificări nodulare sau reticulo-nodulare; liniare sau reticulo-liniare; chistice; consolidări de tip sticlă mată și alveolară. Managementul asistenței medicale este orientat în două direcții: diagnosticarea BNAR prin adresarea pacienților și depistarea activă, prin examenele radiologice profilactice din grupurile de risc.
Concluzii: Fortificarea procesului de diagnosticare și profilaxie, optimizarea calității și accesibilitatea serviciilor medicale prestate va asigura depistarea oportună BNAR, tratamentul efectiv și îmbunătățirea calității vieții populației.
Cuvinte-cheie: boli nespecifice ale aparatului respirator, asistență medicală primară.

Diagnosticul ecografic prenatal al malformațiilor congenitale

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Introducere: Conform datelor publicate de Organizația Mondială a Sănătății în 2016, malformațiile congenitale reprezintă circa 11,3% din cauzele mortalității infantile. Depistarea malformațiilor congenitale reprezintă și unul din scopurile principale ale diagnosticului ecografic prenatal, peste 55% din malformațiile fetale fiind depistate antenatal prin ecografie.
Material și metode: Au fost examinate 1062 de cazuri cu malformații congenitale diagnosticate prenatal pe parcursul ultimilor 5 ani în cadrul secției de Ultrasonografie a Institutului Mamei și Copilului.
Rezultate: Datele studiului au relevat afectarea predilectă a sistemului cardiovascular (25%), urmat de sistemul nervos (22%), genito-urinar (14%), gastrointestinal (9%), osteomuscular (7%), respirator (3%) și maxilofacial (1%). Malformații congenitale cu afectări ale mai multor sisteme au fost depistate în 17% cazuri. Cea mai înaltă rată de depistare a fost înregistrată în anul 2016. Vârsta gravidelor cu cea mai înaltă frecvență a malformațiilor congenitale a fost cuprinsă între 26-30 de ani (30,7%). În cadrul acestui studiu, circa 72% din malformațiile congenitale au fost depistate prenatal. Dintre acestea 82% au fost diagnosticate până la 22 de săptămâni, iar 18% – după 23 de săptămâni de gestație.
Concluzii: Examenul ecografic joacă un rol semnificativ în depistarea malformațiilor congenitale, în special a celor cardiovasculare în trimestrul II de sarcină, ducând la reducerea mortalității și invalidității postnatale.
Cuvinte-cheie: malformații congenitale, diagnostic prenatal, ultrasonografie.

Rolul investigațiilor imagistice în diagnosticul mucocelului apendicular

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Introducere: Diagnosticul preoperator pozitiv de mucocel apendicular a fost descris epizodic în literatura de specialitate.. Lucrarea a avut ca scop evaluarea rolului investigațiilor imagistice în procesul de diagnostic al mucocelului apendicular.
Material și metode: Au fost evaluați 12 pacienți cu neoplasme mucinoase ale apendicelui cu potențial malign redus (LGAMN), care au beneficiat de un examen ultrasonografic (USG) și/sau computer tomografie (CT).
Rezultate: USG a pus în evidență formațiuni chistice circumscrise cu conținut de ecogenitate variabilă în fosa iliacă dreaptă sau bazinul mic. În 3 cazuri, în baza USG preoperator a fost stabilit diagnosticul de mucocel apendicular. În rest, datele USG preoperatorii au fost analizate retrospectiv. La momentul efectuării investigației, formațiunile hipoecogene cu contur clar au fost interpretate drept apendicită sau chisturi ovariene. Drept prag pentru diagnosticul pozitiv al mucocelului apendicular a fost stabilit diametrul apendicelui de ≥15 mm. La CT preoperator au fost descrise formațiuni lichidiene tubulare, bine conturate, neomogene, cu calcifieri parietale, localizate în fosa iliacă sau în proiecția anexelor pe dreapta cu prelungire spre regiunea cecului, cu densitatea conținutului 8-50 UH. Modificările tipice pentru mucocelul apendicular descrise la CT au fost prezentate de mase chistice bine delimitate cu atenuare joasă. În 50% din cazuri au fost depistate calcificări murale curbilinii, sugestive pentru mucocel apendicular. Analiza comparativă a diametrului apendicelui, stabilit la USG, a constituit în medie 36,3±5,1 mm (CI 95%:23,85-48,73); la CT – 28,8±4,2mm (CI 95%:17,14-40,46), iar intraoperator – 30,88±5,4 mm (CI 95%: 18,11-43,64), diferența fiind statistic nesemnificativă (p>0,05).
Concluzii: Importanța evaluării preoperatorii a pacienților cu mucocel apendicular utilizând USG și TC este indiscutabilă. Analiza parametrilor descriși permite sporirea ratei diagnosticului pozitiv preoperator.
Cuvinte-cheie: mucocel apendicular, ultrasonografie, tomografie computerizată.

Angioplastia cu balon a valvei arterei pulmonare

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Introducere: Malformațiile cardiace congenitale constituie o temă actuală. Abordarea endovasculară a problemei este o provocare pentru Republica Moldova. Scopul lucrării a fost evaluarea rezultatelor imediate și la distanță a angioplastiei cu balon în stenoza izolată a valvei arterei pulmonare.
Material și metode: Au fost analizate retrospectiv 233 de cazuri de angioplastii cu balon ale valvei arterei pulmonare, efectuate în cadrul Spitalului Clinic Republican în perioada 1998-2017. Pacienții au fost împărțiți în loturi după vârstă: lotul I 0–5ani, lotul II 5-18 ani, lotul III – mai mari de 18 ani și în grupuri după gradientul presional între ventriculul drept (VD) și artera pulmonară (AP): grupul 1 cu gradient presional VD/AP < 50mmHg (32 de pacienți); grupul 2 cu gradient presional VD/AP 50–100mmHg (177 de pacienți); grupul 3 cu gradient presional VD/AP >100mmHg (24 de pacienți).
Rezultate: Cele mai bune rezultate au fost înregistrate în lotul pacienților cu vârsta 0–5 ani. Drept criteriu de evaluare a succesului intervenției a fost gradientul presional mediu de 15 mmHg. Complicații majore au fost semnalate la 3 pacienți, minore – la 25. Un copil a decedat. Rezultatul intervenției chirurgicale a fost evaluat la 6 luni și la 1 an după intervenție.
Concluzii: Datele obținute demonstrează că angioplastia cu balon a valvei AP este o metodă minim invazivă și efectivă în tratamentul stenozei izolate a valvei arterei pulmonare.
Cuvinte-cheie: angioplastie, arteră pulmonară, gradient presional.

Rolul investigațiilor imagistice în evaluarea pseudomixomului peritoneal

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Introducere: Diagnosticul preoperator al pseudomixomului peritoneal (PMP) are o importanță deosebită în stabilirea strategiei terapeutice. Lucrarea a avut ca scop evaluarea rolului investigațiilor imagistice în diagnosticul PMP.
Material și metode: Studiul a inclus 11 pacienți cu PMP, care au fost examinați prin ultrasonografie (USG) și/sau computer tomografie (CT). Datele obținute au fost comparate cu rezultatele intraoperatorii.
Rezultate: Semnele USG au inclus zone ecogene imobile pe suprafața ficatului, splinei și implanturi pe suprafața peritoneului, ascită cu septuri ecogene perihepatic, perisplenic, subdiafragmal, bazin, pe flancuri și interintestinal. Examenul CT a demonstrat ascită mucinoasă cu densitate sporită (8-20 UH), omogenă, cu distribuție de la bazinul mic (n=3) în toate zonele cavității peritoneale (n=5), compresia viscerelor. În cazul afectării etajului superior al cavității peritoneale (n=5), fenomenul de „scalloping" visceral (o dereglare a conturului organelor parenchimatoase descris și ca „impresiuni digitale") al marginilor ficatului și splinei a fost prezent în 100% cazuri (sensibilitatea, specificitatea, valoarea predictivă pozitivă și negativă fiind = 1,0). Un alt semn CT a fost prezența implanturilor de calcificări cu diverse localizări, înregistrat la 6/11 (54,5%) pacienți cu PMP. În 3 cazuri cavitatea peritoneală nu a fost afectată, procesul implicând peretele abdominal cu fistulizare externă. Examenul CT a permis, de asemenea, determinarea preoperatorie a gradului de implicare viscerală și peritoneală, indexul de carcinomatoză peritoneală (PCI) determinat preoperator prin CT fiind de 11,3±9,59 (CI95%:4,43-18,16) *versus* intraoperator 12,9±3,34 (CI95%:5,33-20,47) (p=0,44).
Concluzii: TC permite determinarea preoperatorie a indexului de carcinomatoză peritoneală, contribuind la determinatea strategiei terapeutice. Fenomenul de „scalloping" visceral și implanturi cu calcificări facilitează diagnosticul de PMP.
Cuvinte-cheie: pseudomixom peritoneal, ultrasonografie, tomografie computerizată, index de carcinomatoză.

Diagnosticul radioimagistic al ocluziei intestinale

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Introducere: Incidența ocluziei intestinale (OI) este în continuă creștere la nivel mondial datorită numărului mare de intervenții chirurgicale (ocluzii aderențiale) și proceselor neoplazice la nivelul colonului, incidența cărora crește odată cu vârsta. Mortalitatea se menține la un nivel înalt (în medie 10-25%), fiind mai mare pentru pacienții cu vârsta sub 5 ani și peste 65 de ani, iar în cazuri netratate ajunge până la 100% pentru toate grupurile de vârstă. Scopul studiului a fost evaluarea eficacității metodelor de diagnostic imagistic și analiza posibilităților radioimagistice ale diagnosticului ocluziei intestinale.
Material și metode: Studiul a inclus un lot de 52 de pacienți cu suspecție de OI, internați în secția de Chirurgie Viscero-abdominală a Spitalului Clinic Republican. Metodele imagistice utilizate și semnele radiologice depistate au fost evaluate.
Rezultate: Radiografia abdominală simplă a fost metoda de diagnostic de primă intenție pentru diagnosticul OI. Radiografia cu contrast a avut o precizie mai mare în determinarea OI parțiale *versus* OI complete. Tomografia computerizată a fost necesară pentru o evaluare ulterioară a pacienților la care examenul clinic și radiografia nu au stabilit diagnosticul definitiv, demonstrând și avantajul de a stabili cauza și nivelul obstrucției la majoritatea pacienților. Tomografia computerizată cu contrast a oferit și posibilitatea identificării punctului de tranzit cu intestinul distal decompresat. Cel mai frecvent, sediul obstacolului a fost localizat la nivelul colonului ascendent (44,2% pacienți).
Concluzii: Ponderea maximă în diagnosticul OI a avut-o pasajul de Bariu (36,5%) urmat de irigoscopie (21,2%), semnele radiologice principale fiind nivelurile hidro-aerice (63,5%) și aerul liber în tractul gastrointestinal (38,5%).
Cuvinte–cheie: ocluzie intestinală, diagnostic radioimagistic, niveluri hidro-aerice.

Diagnosticul radio-imagistic al colitelor ulceroase nespecifice

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Introducere: Colita ulceroasă nespecifică (CUN) afectează aproximativ 1,3 milioane de persoane în America de Nord și 1,9 milioane în Europa, înregistrându-se mai frecvent la persoanele tinere, cu vârsta cuprinsă între 24 și 45 de ani. Un studiu efectuat în Republica Moldova a relevat o incidență a CUN de 1 la 105 locuitori și o prevalență de 2,42 la 105 locuitori. Studiul a avut ca scop aprecierea valorii metodelor utilizate în diagnosticul CUN și complicațiilor asociate.
Material și metode: Studiul a inclus un lot de 136 de pacienți cu manifestări clinice ale colitei ulceroase nespecifice tratați în departamentele de Gastroenterologie și Chirurgie colorectală ale Spitalului Clinic Republican. Metodele imagistice utilizate și semnele radiologice depistate au fost evaluate.
Rezultate: Vârsta medie a bolnavilor incluși în studiu a fost de 35,6 ani, 77 (54,9%) dintre pacienți fiind bărbați și 59 (45,1%) – femei. Forme localizate ale CUN au fost înregistrate la 98 (75,5%) pacienți, iar forme extinse – la 38 (24,5%) pacienți. Pentru determinarea semiologiei CUN și stabilirea unei tactici de tratament a fost necesară utilizarea următoarelor metode de investigații: irigoscopie – 121 (89%) pacienți, colonoscopie – 98 (72,1%) pacienți, rectoromanoscopie – 64 (47,1%) pacienți, contrastare primară dublă – 3 (2,2%) pacienți. Semnele caracteristice la irigoscopie au inclus: aspect granular al mucoasei, ștergerea haustrelor (edem), spiculi marginali, aspect de buton de cămașă (ulcerații), pseudopolipi, haustre dispărute, calibru diminuat, distensibilitate redusă și aspect de microcolie. Colonoscopia în stadiul inițial a relevat o mucoasă congestionată, edemațiată cu sau fără ulcerații; în puseul acut – edem, aspect pseudopolipoid, ulcerații cu fibrină și puroi, iar în stadiile avansate – mucoasă atrofică, pseudopolipi și un lumen îngust fără haustre.
Concluzii: Metodele de elecție în diagnosticul colitei ulceroase nespecifice au fost colonoscopia cu o sensibilitate de 82% și irigoscopia cu o sensibilitate de 65%.
Cuvinte–cheie: colita ulceroasă nespecifică, colonoscopie, irigoscopie.

Predicția transformării hemoragice a infarctului cerebral prin perfuzie CT

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Introducere: Incidența mortalității și invalidității post-accident vascular cerebral (AVC) ischemic reprezintă o problemă actuală la nivel mondial, fiind în progresie continuă. Transformarea hemoragică a leziunilor ischemice reprezintă o complicație asociată cu un prognostic nefavorabil. Lucrarea a avut ca scop analiza modificărilor patologice a permeabilității barierei hematoencefalice prin perfuzie computer-tomografică (CT) la pacienții cu transformare hemoragică a leziunilor ischemice.
Material și metode: Au fost analizați prospectiv 52 de pacienți cu AVC ischemic hiperacut, tratați în Institutul de Neurologie și Neurochirurgie din Republica Moldova în perioada 2017-2018. Au fost incluși pacienții investigați prin computer-tomografie, perfuzie computer-tomografică cu calcularea permeabilității barierei hematoencefalice la internare și computer-tomografie de control cu aprecierea transformării hemoragice a leziunilor ischemice.
Resultate: Din cei 52 de pacienți incluși în cercetare, 21 de pacienți au demonstrat transformări hemoragice la imaginile de control, 4 fiind trombolizați. Tromboliza a fost de asemenea efectuată la 5 pacienți din grupul fără transformări hemoragice. Comparativ cu zona contralaterală, permeabilitatea barierei hematoencefalice a fost semnificativ mai mare la pacienții cu transformări hemoragice (4,47+/-2,72 *vs* 1,13+/-0,17 ml/100g/min), fiind de asemenea crescută și în emisfera sănătoasă la grupul cu transformări hemoragice față de cei fără transformări hemoragice (1,87+/-0,23 *vs* 1,21+/-0,28).
Concluzii: Rezultatele preliminare obținute indică o corelare a creșterii permeabilității barierei hemato-encefalice în sectorul ischemic cerebral în primele ore cu dezvoltarea transformării hemoragice ulterioare.
Cuvinte-cheie: infarct cerebral, transformare hemoragică, perfuzie computer-tomografică.

Aspecte radiologice ale tumorilor gastrointestinale stromale (GIST)

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Introducere: Tumorile gastrointestinale stromale (GIST) sunt cele mai frecvente neoplazii ale tubului digestiv. Examenul radiologic este o etapă importantă în stabilirea diagnosticului preoperator de GIST. Acest studiu a avut ca scop analiza caracteristicilor tomografice ale GIST pentru stabilirea potențialului tumoral malign.
Material și metode: A fost efectuată analiza bazei de date a 73 de pacienți cu tumori GIST (c-kit(CD117)(+) operați între 2007-2015. Dintre aceștia, 32 au fost investigați prin computer tomografie (CT) cu reconstrucție tridimensională (3D).
Rezultate: Tumora primară a fost localizată în stomac la 23 (71,9%) pacienți și în intestinul subțire – la 9 (28,1%) pacienți. Dimensiunile GIST au variat între 3,4 și 25,0 cm în diametrul maxim, în medie – 11,12±1,10cm. Caracterul de expansiune al tumorii a fost exofit în 16 (50%) cazuri, mixt – în 13 (40,6%) cazuri și endofit – în 3 (9,4%) cazuri. Caracteristicile morfometrice: GIST cu forma sferică/ovală – 7 (21,9%), neregulată – 25 (78,1%) (p<0,0001). Contur regulat – 7 (21,9%), neregulat – 25 (78,1%) (p<0,0001). Dimensiunea medie a GIST cu component necrotic / hipodensitate centrală (HC) a fost de 13,15±1,20cm *vs* 5,01±0,47 cm pentru GIST fără HC. În GIST cu HC absentă, tumorile cu o rată redusă a mitozelor (≤5/50) au predominat asupra GIST cu o rată înaltă a mitozelor (>5/50) – n=7(87,5%) *vs* n=1 (12,5%) (p<0,0001).
Concluzii: CT poate fi considerată tehnica imagistică de primă intenție în examenul preoperator al GIST. Caracteristicile morfometrice, precum și identificarea prin CT a zonelor de HC, corelate cu dimensiunile crescute și indicele mitotic înalt, sunt semne imagistice de potențial malign crescut.
Cuvinte-cheie: tumoră gastrointestinală stromală, caracteristici morfometrice, hipodensitate centrală, potențial malign.

Rolul sistemului de raportare PI-RADS în stadializarea cancerului de prostată

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Introducere: Cancerul de prostată este unul dintre cele mai frecvente cancere la bărbați la nivel mondial (al doilea ca frecvență după cancerul de piele). Sistemul de raportare PI-RADS (Prostate Imaging Reporting and Data System) a fost elaborat în baza recomandărilor grupului internațional de lucru la nivel de experți privind cancerul de prostată și are ca scop standardizarea clasificării pe plan internațional. Datele publicate de Ministerul Sănătății al Republicii Moldova arată că incidența cancerului de prostată, înregistrată în anul 2009, s-a triplat comparativ cu anul 2000, morbiditatea și mortalitatea demonstrând o continuă ascensiune. Adoptarea sistemului de raportare PI-RADS are o importanță deosebită în acest context pentru elaborarea strategiei terapeutice conform recomandărilor adoptate pe plan internațional.
Conținut: În prezentare este redată o sinteză a stadializării cancerului de prostată cu o expunere mai detaliată a sistemului de raportare PI-RADS și a rezultatelor investigației prin rezonanță magnetică (IRM) multiparametrică. Prezentarea include imagini reprezentative cu evaluarea elementelor scorului PI-RADS pentru zona periferică și cea de tranziție a prostatei pe secvențele T2 ponderate, DWI (diffusion-weighted imaging) și secvențele dinamice după administrarea substanței de contrast. Noile criterii adoptate de versiunea 2 a clasificării PI-RADS (PI-RADS v2) sunt de asemenea explicate, precum și diferențele față de versiunea PI-RADS v1.
Concluzii: Sistemul de raportare PI-RADS este conceput pentru a îmbunătăți detectarea și localizarea leziunilor suspecte pentru cancer de prostată, precum și o mai bună stratificare a riscului la acești pacienți.
Cuvinte-cheie: cancer de prostată, IRM multiparametrică, sistem de raportare PI-RADS, stadializarea cancerului de prostată, PI-RADS v2.

Actualitatea diagnosticului primar al cancerului și al stărilor precanceroase ale colonului prin irigoscopie

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Introducere: Importanța irigoscopiei în diagnosticul cancerului de colon și a stărilor precanceroase este actualmente discutată și uneori interpretabilă. Deși se află în umbra colonoscopiei, care este standardul de aur, irigoscopia este mai ieftină, mai puțin dureroasă, minim invazivă, dar și mai puțin sensibilă și specifică, uneori greu tolerată de pacienți.

Material și metode: Am efectuat un studiu retrospectiv în IMSP Spitalul Clinic Municipal Sfânta Treime, în perioada ianuarie-iunie 2017. Lotul de studiu a fost constituit din 150 de pacienți, care s-au adresat primar la indicația medicului de familie sau a medicilor de profil. S-au evaluat tipul și rata leziunilor canceroase și precanceroase identificate prin irigoscopie și confirmate ulterior prin colonoscopie.
Rezultate: Au fost evaluați 150 de pacienți prin irigoscopie, dintre care 14 irigoscopii au fost raportate ca inadecvate. Pacienții diagnosticați cu diverticuloză, leziuni polipoide și cancer au fost direcționați ulterior să efectueze colonoscopie. Per total, irigoscopic s-au identificat 8 cazuri de cancer confirmat prin ambele investigații. Diverticuli s-au depistat la 51 de pacienți prin irigoscopie și la 23 – prin colonoscopie. Irigoscopic la 8 pacienți s-au depistat 11 leziuni polipoide cu mărimea de 10 mm sau mai mari. Colonoscopic s-au depistat 18 leziuni polipoide cu dimensiuni de la 5 mm. Per total, 17 leziuni polipoide sau defecte de umplere, identificate irigoscopic, nu au putut fi verificate prin colonoscopie.
Concluzii: Irigoscopia depistează cu precizie înaltă cancerul de colon și diverticuloza. Sensibilitatea în detectarea leziunilor polipoide este slabă. Irigoscopia poate servi ca metodă complementară sau de alternativă în screeningul cancerului de colon.
Cuvinte-cheie: cancer colorectal, stări precanceroase, irigoscopie.

Rolul ecocardiografiei și angiocoronarografiei în diagnosticul imagistic al cardiopatiei ischemice

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Introducere: Cardiopatia ischemică provoacă aproximativ o treime din toate decesele la persoanele mai în vârstă de 35 de ani. Reducerea mortalității poate fi realizată prin ameliorarea strategiilor de tratament, iar alegerea tacticii corecte de tratament depinde de corectitudinea diagnosticului.
Material și metode: Studiul a fost efectuat pe un lot de 33 de pacienți internați în secția Cardiochirurgia viciilor cardiace dobândite a Spitalului Clinic Republican, în perioada 2015-2016 și supuși intervenției chirurgicale de by-pass aorto-coronarian. Au fost analizate datele ecocardiografiei și angiocoronarografiei.
Rezultate: Angiocoronarografia a depistat afectarea tricoronariană la 72,5% pacienți, iar monocoronariană la doar 3,1%, cu prevalarea afectării de arteră circumflexă, arteră descendentă anterioară segmentul II, arteră coronariană dreaptă segmentul II, ramurile marginale fiind și ele implicate în 33,4% cazuri. Ecocardiografia transtoracică a înregistrat semne de aortoscleroză la 82% pacienți și dilatarea ventriculului stâng (VS) la 36% pacienți. Contractilitatea globală a miocardului VS a fost net diminuată la 6% pacienți și cu tendință spre diminuare la 15% pacienți.
Concluzii: Angiocoronarografia a permis stabilirea localizării, gradului și extinderii afectării arterelor coronariene, și astfel a permis formularea timpurie a indicațiilor pentru tratament chirurgical. Parametrii ecocardiografici importanți în evaluarea pacienților cu cardiopatie ischemică sunt: dimensiunile VS, grosimea și contractilitatea miocardului. Datele ecocardiografiei contribuie la alegerea tratamentului corect și în special sunt utile pentru aprecierea calității tratamentului. A fost elaborat algoritmul diagnostic al cardiopatiei ischemice cu accentuarea pe metodele de diagnostic imagistic.
Cuvinte-cheie: cardiopatie ischemică, ecocardiografie, angiocoronarografie.

Rolul investigațiilor imagistice în diagnosticul ageneziei corpului calos

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Introducere: Corpul calos reprezintă o structură de importanță majoră pentru funcționarea normală a creierului și dezvoltarea armonioasă a copilului. Datorită particularităților sale este asigurată conexiunea dintre emisfere nu doar structural, dar și funcțional. Agenezia corpului calos este cea mai frecventă malformație cerebrală (1:300 nou-născuți), în circa 80% cazuri asociindu-se cu manifestări neurologice severe.
Conținut: Prezentarea expune particularitățile diagnosticului ultrasonografic prenatal – semnele directe și indirecte ale ageneziei corpului calos. Este discutat de asemenea rolul diverselor modalități imagistice în stabilirea acestei malformații, un accent mai deosebit fiind acordat ultrasonografiei prenatale. Imagini reprezentative obținute în cadrul Centrului Medical Repromed sunt prezentate ca ilustrații. Investigația prin rezonanță magnetică, care poate fi de asemenea utilizată în timpul sarcinii, permite o acuratețe mai mare în identificarea și aprecierea structurilor corpului calos. Tomografia computerizată permite stabilirea diagnosticului de agenezie, însă din cauza radiației ionizante nu este inclusă în protocoalele imagistice pentru diagnosticul prenatal al acestei maladii.
Concluzii: Agenezia corpului calos necesită o abordare multidisciplinară. Având în vedere asocierea acestei patologii cu o multitudine de anomalii genetice (peste 250), este necesară investigarea minuțioasă a tuturor sistemelor, vârsta gestațională optimă fiind 20-22 de săptămâni de gestație.
Cuvinte-cheie: agenezia corpului calos, diagnostic ultrasonografic prenatal.

The role of brain MRI in mesial temporal lobe epilepsy

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Background: Mesial temporal lobe epilepsy is the most common form of epilepsy. Since its pathophysiological substrate is usually related to hippocampal sclerosis, the seizures are typically resistant to antiepileptic drugs and surgical treatment is considered in most patients. Defining the affected region on medical imaging is of paramount importance in this situation. The study aimed to evaluate the role of brain magnetic resonance imaging (MRI) in patients with suspected mesial temporal lobe epilepsy and its ability to reveal the responsible epileptogenic focus.
Material and methods: The study included 96 patients aged 3 to 48 years old with clinical suspicion of temporal lobe epilepsy who underwent a brain MRI scan at the Medpark International Hospital in the period 25.01.2017 – 25.01.2018. The scans were performed on a *Siemens Essenza* 1.5 Tesla MRI scanner using a specially designed epilepsy imaging protocol (sag T1W, T2W, T2-tirm, DWI). Additional sequences (such as cor T2 FLAIR, T1 IR + contrast) were also included if required.
Results: From a total of 96 patients, brain MRI revealed the potential epileptogenic region in 27 (28%) cases. The MRI findings in these patients included increased signal intensity in the region of hippocampus (23 patients), hippocampal atrophy or volume loss (19 patients), enlarged temporal horn (11 patients), smaller temporal lobe (10 patients) and collateral white matter atrophy (6 patients).
Conclusions: In our study, mesial temporal sclerosis was the most common identifiable cause of seizures. Even though brain MRI features may vary, the increased hippocampal signal intensity was the most consistent finding.
Key words: MRI**,** mesial temporal epilepsy, mesial temporal sclerosis.

The roles of CT and MRI techniques in ischemic stroke

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Background: Ischemic stroke is the second most common cause of death and the leading cause of disability. Imaging modalities such as computed tomography (CT) and magnetic resonance imaging (MRI) are essential in diagnosing the stroke and guiding the treatment strategy. Choosing a specific technique might be challenging in different clinical situations.
Material and methods: The study involved searching PubMed database with the following keywords: ischemic stroke, computed tomography, magnetic resonance imaging. The search revealed over 1100 articles, from which 52 were relevant for the studied topic.
Results: A head CT scan can quickly exclude the presence of hemorrhage and reveal related signs of ischemia such as the loss of contrast between the gray and white matter, hyperdense vessel sign, etc. CT imaging can also exclude other pathologies that may resemble stroke clinically. MRI is generally more sensitive than CT in the detection of ischemia, although an MRI exam is more complicated and time-consuming, which can limit its applications in an emergency. The major advantages of MRI are also related to absence of radiation and relatively safer contrast agents. Imaging vertebral and carotid arteries and their branches is an essential part of a stroke protocol and both CT and MR angiography techniques can be used for this purpose, each having its own advantages and disadvantages. A variety of newly emerged techniques such as perfusion computed tomography of the brain can also significantly improve the detection of fresh ischemia.
Conclusions: It is most likely that CT and MRI will coexist for decades, and the imaging modality for patients with acute neurological deficits will be decided according to local conditions and patient's characteristics. Patients are likely to benefit from developmental research of both imaging techniques.
Key words: ischemic stroke, computed tomography, magnetic resonance imaging.

The importance of computed tomography in the management of renal trauma

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Background: Contrast-enhanced computed tomography (CE-CT) has become the imaging modality of choice for evaluating abdominal trauma and has replaced the intravenous urography as the primary modality for assessing suspected renal injuries. The aim of this study was to assess the value of CE-CT in the management of renal trauma.

Material and methods: The study included 11 patients aged 4 to 17 years who underwent CE-CT for assessment of renal trauma at the Institute for Mother and Child Health Care between May 2016 and February 2018.
Results: CE-CT has allowed grouping renal injuries into five grades of severity according to the American Association of Surgeons in Trauma organ injury severity scale (grade 1 – parenchymal contusions and isolated subcapsular hematomas; grade 2 – superficial cortical lacerations < 1 cm in depth and nonexpanding perirenal hematomas; grade 3 – lacerations > 1 cm in depth without extension into the collecting system or evidence of urinary extravasation; grade 4 – deep lacerations that involve the collecting system, traumatic arterial thrombosis or urinary extravasation; grade 5 – shattering of the kidney into multiple fragments and devascularizing injuries of the renal pedicle. In this study, 45% of patients had grade 3 renal injuries, 36% – grade 4 renal injuries and 18% – grade 5 renal injuries. The obtained details about the injured anatomical structures proved indispensible for guiding the treatment strategy and surgical interventions.
Conclusions: Computed tomography provides valuable information in the evaluation of renal trauma, guiding the treatment strategy and surgical interventions in selected patients.
Key words: renal trauma, contrast-enhanced computed tomography, grades of renal injuries.

Evolving role of nuclear medicine modalities in the evaluation of renal diseases

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Background: Nuclear medicine in renal diseases is becoming one of the most important modalities of investigation.
Material and methods: The study involved a search of the Pubmed Central database with the keywords *renal scintigraphy*, *renal diseases*, *nuclear medicine*, *kidney function*. The retrieved articles were studied and nuclear medicine techniques used for evaluation of kidney diseases were summarized.
Results: The search revealed 9899 articles, which were subsequently filtered according to their relevance. The results show several groups of radiopharmaceuticals used for evaluation of renal function and renal abnormalities. *Tubular secretion agents* such as Tc-99m MAG-3 are most commonly used for evaluating renal function, obtaining renograms and a variety of parameters reflecting differential renal function such as time to peak activity, relative renal uptake ratios at 2 to 3 minutes, half time excretion, differential cortical excretion at 15 minutes, 20-min to peak count ratio, etc. *Glomerular filtration agents* such as Tc-99m DTPA and 125-I-labeled sodium lothalamate (Glofil) are commonly used for evaluation of glomerular filtration rate. *Renal cortical agents* such as Tc-99m DMSA and Tc-99m glucoheptonate are used for visualization of renal parenchyma due to their ability to bind for a sufficiently long period to the renal tubules, allowing their visualization. *Positron emission tomography agents* such as 2-deoxy-2-[fluorine-18]fluoro- D-glucose (18F-FDG) are commonly used for evaluation of patients with primary renal malignancies or metastatic renal lesions. A variety of other radiopharmaceuticals are also under development or used for research purposes.
Conclusions: Nuclear medicine is increasingly being used in patients with various renal abnormalities and its area of applications is expanding.
Key words: renal scintigraphy, tubular secretion agents, glomerular filtration agents, renal cortical agents.

Le rôle de la résonance magnétique nucléaire dans le diagnostic et la localisation du cancer rectal

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Introduction: Le cancer rectal, bien qu'il partage de nombreuses caractéristiques du carcinome colorectal, a quelques aspects individuels. Ceux-ci sont principalement liés à sa position anatomique, ce qui a des implications dans l'imagerie préopératoire et l'évaluation de la technique chirurgicale. Bien que la tomodensitométrie (TDM) puisse faire le diagnostic, la résonance magnétique nucléaire (RMN) est devenue le point d'arrêt préopératoire. L'étude visait à évaluer la contribution de la résonance magnétique nucléaire (RMN) dans la détection du cancer rectal par localisation, propagation locorégionale et diagnostic différentiel avec le cancer sigmoïde et anal.
Matériel et méthodes: Un groupe de 24 patients, ayant un cancer colorectal suspecté, a été examiné par RMN du petit bassin entre août 2014 et décembre 2017.
Résultats: Suite à l'étude, les 24 patients atteints d'un cancer colorectal présumé ont été diagnostiqués avec un cancer rectal de localisation variée. Parmi ceux-ci: cancer rectal supérieur – 6 patients (25%); cancer rectal moyen – 3 patients (12,5%); cancer rectal inférieur – 8 patients (33,3%); mixtes – 7 patients (29,2%), dont: supérieur et moyen – 2 patients (8,3%), moyen et inférieur – 5 patients (20,9%).

Conclusions: L'incidence élevée des cas de cancer rectal supérieur (CRS) et inférieur (CRI), par rapport au cancer rectal moyen, nécessite un diagnostic différentiel rigoureux entre le CRS et le cancer sigmoïde et CRI et le cancer anal, la RMN du petit bassin est la méthode d'imagerie de choix, en raison de l'excellent contraste des tissus mous et l'absence de rayonnement ionisant.
Mots-clés: cancer rectal, RMN du petit bassin, localisation.

Evaluarea chisturilor renale prin tomografie computerizată

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Introducere: Bolile renale chistice cuprind un grup heterogen de anomalii congenitale sau dobândite caracterizate prin prezența de chisturi de dimensiuni diferite și în număr variabil, ce afecteaza unul sau ambii rinichi. Studiul a avut ca scop evaluarea rolului tomografiei computerizate în diagnosticul și caracterizarea chisturilor renale.
Material și metode: Studiul a inclus un număr de 255 de pacienți cu chisturi renale evaluați prin tomografie computerizată cu injectarea intravenoasă a substanței de contrast în perioada 2017-2018, în cadrul Spitalului Internațional Medpark.
Rezultate: Tomografia computerizată a permis evaluarea detaliată a chisturilor renale și gruparea acestota conform clasificării Bosniak în următoarele categorii: I – chisturi simple, necomplicate, benigne, bine delimitate, cu conținut hipodens și perete subțire, fără captarea substanței de contrast; II – chisturi cu modificări minime, cu apariția unor pereți în interior, conținut hiperdens sau depuneri de calciu pe membrană sau în interiorul chistului; III – chisturi neclare cu tendință spre malignizare, având membrane îngroșate și depuneri de calciu asimetrice sau captare de contrast la nivelul componentelor solide; IV – neoplasme chistice maligne cu aspect heterogen, contur neclar și captare de contrast la nivelul porțiunilor solide. Din totalul de 255 de pacienti investigați, 106 (41,56%) au avut chisturi renale de tip Bosniak I, 68 (26,66%) – chisturi renale tip Bosniak II, 35 (13,72%) – chisturi renale tip Bosniak III și 46 (18,04%) – chisturi renale tip Bosniak IV.
Concluzii: Tomografia computerizată a relevat detalii importante referitor la numărul, localizarea și dimensiunile chisturilor renale, precum și caracterizarea acestora conform clasificării Bosniak în funcție de atenuare, prezența calcificărilor, septărilor și captarea substanței de contrast.
Cuvinte-cheie: chisturi renale, tomografie computerizată, diagnostic diferențial, clasificarea Bosniak.

Incidența modificărilor ultrasonografice renale în pielonefritele acute

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Introducere: Ultrasonografia este metoda utilizată în determinarea modificărilor structurale renale. În pielonefritele acute se pot determina dimensiuni renale normale sau mărite, parenchimul renal cu grosime normală sau mărită, reducerea diferențierii cortico-medulare și scăderea ecogenității renale. Studiul a avut ca scop determinarea ultrasonografică a incidenței modificărilor renale la pacienții cu diagnosticul prezumtiv sau stabilit de pielonefrită acută.
Material și metode: Explorarea renală s-a efectuat cu sonda convexă cu frecvența de 3,5MHz. Au fost investigați 50 de pacienți cu vârsta cuprinsă între 20 și 60 de ani, care aveau indicația medicului urolog pentru efectuarea examenului ultrasonografic. Raportul dintre barbați și femei a fost de 1:2,3. Toți pacienții au prezentat diverse manifestări clinice precum sindromul inflamației locale (durerea lombară), sindromul inflamației generale (febră, frisoane, hipertranspirații), simptome sugestive infecției urinare (disurie, micțiuni imperative, dureri pubiene asociate cu actul micțional), leucocite și bacterii în urină, depistate la analiza generală de urină, leucocitoză și creșterea VSH-ului.
Rezultate: Dintre 50 de pacienți investigați, 10 (20%) pacienți aveau rinichi cu aspect ultrasonografic normal, iar 40 (80%) pacienți au demonstrat diverse modificări cum ar fi diferențierea cortico-medulară incertă, îngroșarea parenchimului renal sau creșterea dimensiunilor renale (longitudinale și transversale).
Concluzii: Vârsta variată a pacienților denotă că infecțiile urinare sunt caracteristice oricărei vârste, femeile fiind de 2 ori mai susceptibilie decât bărbații. Lipsa modificărilor ultrasonografice nu indică absența pielonefritei acute, însă prezența lor reflectă o gravitate mai mare sau un stadiu avansat al patologiei.
Cuvinte-cheie: ultrasonografie, pielonefrită acută, modificări renale, infecție urinară.

Rolul ecocardiografiei în diagnosticul malformațiilor cardiace congenitale

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Introducere: Ecocardiografia reprezintă o metodă de investigație neinvazivă care permite diagnosticarea și urmărirea evoluției patologiilor congenitale.
Material și metode: În studiu au fost incluși 70 de pacienți cu malformații cardiace congenitale și vârsta până la 18 ani, care au fost internați în Spitalul Clinic Republican din Chișinău. Parametrii ecocardiografiei până și după intervenția chirurgicală au fost evaluați în detaliu.
Rezultate: Datele studiului au permis distribuirea pacienților în două grupuri: malformații cardiace congenitale necianogene (42 (60%) pacienți) și malformații cardiace congenitale cianogene (28 (40%) pacienți). Ecocardiografia a facilitat evaluarea detaliată a funcției cardiace, ghidarea strategiei terapeutice și evaluarea rezultatelor intervențiilor chirurgicale. Modalitatea a permis, de asemenea, depistarea prezenței patologiilor cardiace concomitente sau asocierea a două malformatii cardiace congenitale la circa 1/3 din pacienți.
Concluzii: Ecocardiografia are un rol major în diagnosticul malformațiilor cardiace congenitale, elaborarea strategiei terapeutice și evaluarea rezultatelor intervențiilor chirurgicale. Metoda permite urmărirea neinvazivă a evoluției malformațiilor cardiace congenitale și monitorizarea pre-, intra- și postoperatorie. Ecocardiografia fetală permite diagnosticul malformației cardiace congenitale după săptămâna a 20-a de sarcină și monitorizarea ulterioară în dinamică a acesteia.
Cuvinte-cheie: ecocardiografie, malformații congenitale, diagnostic prenatal.

Aspecte radio-imagistice în diagnosticul litiazei renale

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Introducere: Utilizarea investigațiilor imagistice la pacienții cu suspecție de urolitiază este esențială pentru confirmarea prezenței calculilor, localizarea și caracterizarea acestora, determinarea patologiilor renale asociate și elaborarea strategiei terapeutice.
Material și metode: În perioada august 2017–februarie 2018, în cadrul Departamentului de Radiologie și Imagistică a Spitalului Internațional Medpark au fost investigați 60 de pacienți cu diagnostic de urolitiază prin următoarele modalități imagistice: radiografie reno-vezicală simplă, urografie intravenoasă, ultrasonografice și tomorafie computerizată.
Rezultate: Din totalul de 60 de pacienți, 40 (66,6 %) au fost bărbați și 20 (33,4%) femei. 34 (56,7%) pacienți au avut vârsta între 20-39 de ani, 15 (25%) pacienți au avut vârsta între 40-59 de ani și 11 (18,3%) pacienți au avut vârsta ≥ 60 de ani. Calculii radiopozitivi au fost depistați la 56 (93,3%) pacienți. Afectare bilaterală a fost înregistrată la 33 (55%) pacienți, dreaptă – la 19 (31,7%) pacienți, stângă – la 8 (13,3%) pacienți. Calculi multipli au fost depistați în 38 (63,3%) cazuri, unici – în 22 (37,3 %) cazuri. Localizarea calculilor a fost în rinichi la 36 (60%) pacienți, căile urinare – la 18 (30%) pacienți și vezica urinară – la 6 (10%) pacienți. La toți pacienții li s-a efectuat ultrasonografia și urografia intravenoasă, 47 (78,3%) dintre aceștia necesitând și efectuarea tomografiei computerizate.
Concluzii: Investigația imagistică a pacienților cu suspecție de urolitiază permite confirmarea patologiei și diagnosticul diferențial, stabilirea particularităților calculilor și posibilelor complicații, precum și elaborarea tacticii de tratament.
Cuvinte cheie: urolitiază, calculi renali, ultrasonografie renală, urografie intravenoasă.

Rolul tomografiei computerizate în diagnosticul și managementul angiomiolipoamelor renale

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Introducere: Angiomiolipomul este cea mai comună tumoare benignă întâlnită în rinichi, în circa 20% cazuri fiind asociat cu scleroza tuberoasă. Hemoragia retroperitoneală este una dintre complicațiile ce apare după ruperea vaselor de sânge la aproape 50% dintre pacienții cu angiomiolipoame mai mari de 4 cm. Deaceea tratamentul angiomiolipomului este de luat în considerare în cazul în care acesta depășește 3 cm diamentru, chiar și la pacienții asimptomatici. Studiul a avut ca scop evaluarea rolului tomografiei computerizate în diagnosticul și evaluarea angiomiolipoamelor renale.

Material si metode: Au fost evaluați 223 de pacienți cu tumori renale care au fost investigați prin tomografie computerizată în cadrul Departamentului de Radiologie al Spitalului Internațional Medpark, în perioada ianuarie 2017–martie 2018.
Rezultate: Din totalul de 223 de pacienți cu tumori renale, diagnosticul final de angiomiolipom a fost confirmat în 24 (10,76%) cazuri. Dintre aceștia 4 au fost bărbați și 20 au fost femei. Rinichiul drept a fost afectat în 37,9% cazuri, iar rinichiul stâng – în 62,1%) cazuri. Tomografia computerizată a relevat informații importante referitor la localizarea și dimensiunile angiomiolipoamelor, precum și relația acestora cu structurile anatomice adiacente. Dimensiunile angiomio-lipoamelor au fost mai mici de 4 cm în 86,2% cazuri și mai mari de 4 cm – în 13,8% cazuri. Datele obținute prin tomografia computerizată au contribuit decisiv la stabilirea strategiei terapeutice la toți pacienții.
Concluzii: Tomografia computerizată relevă chirurgului urolog informații importante referitor la localizarea, dimensiunile și relația angiomiolipoamelor cu structuri anatomice adiacente, oferind siguranța necesară pentru stabilirea strategiei terapeutice.
Cuvinte-cheie: tomografie computerizată, CT, angiomiolipom renal.

Diagnosticul necrozei aseptice a capului femural prin radiografie și IRM

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Introducere: Necroza aseptică a capului femural este asociată cu lipsa aportului sangvin la nivelul articulației șoldului. Deși necroza avasculară poate apărea în orice os, aceasta afectează cel mai des șoldul. Diagnosticul precoce contribuie la un rezultat mai bun al tratamentului. Lucrarea a avut ca scop evaluarea rolului radiografiei și investigației prin rezonanță magnetică (IRM) în diagnosticul și stadializarea necrozei aseptice a capului femural.
Material și metode: Studiul a inclus 30 de pacienți cu vârsta cuprinsă între 24 și 77 de ani cu necroză aseptică a capului femural care au fost investigați prin radiografie și IRM în decursul anului 2017, în cadrul Spitalului Internațional Medpark.
Rezultate: Din lotul de pacienți incluși în studiu 67% au fost bărbați și 33% – femei. La 85% dintre pacienți afectarea a fost asimetrică, în circa 2/3 cazuri necroza aseptică fiind bilaterală. La peste 50% dintre pacienți maladia a fost asociată cu diverse grade de coxartroză. Radiografiile au oferit informații preponderent cu referire la structurile osoase, inclusiv dacă capul femural a fost prabușit și în ce măsură. IRM însă a relevat informații detaliate despre modificările osoase, înclusiv în fazele incipiente ale bolii care nu au fost vizualizate cu ajutorul radiografiilor. La unii pacienți IRM a permis și identificarea osteonecrozei incipiente în articulația contralaterală chiar inainte de apariția simptomatologiei clinice.
Concluzii: Necroza aseptică a capului femural este întâlnită mai frecvent la bărbați, arficulațiile coxofemurale fiind adesea afectate bilateral și asimetric. În stadiile inițiale metoda preferențială de diagnostic cu o senzitivitate mult mai înaltă este IRM. Radiografia relevă informații referitor la afectarea structurilor osoase în stadii mai avansate.
Cuvinte-cheie: necroza aseptică a capului femural, diagnostic imagistic, IRM, radiografie.

Rolul tomografiei computerizate în diagnosticul hemangioamelor hepatice

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Introducere: Hemangiomul hepatic reprezintă cea mai frecventă tumoră benignă hepatică (78%), descoperită de obicei întâmplător. Diagnosticul de certitudine, de obicei, se realizează în urma efectuării tomografiei computerizate cu substanță de contrast, rezonanță magnetică nucleară, scintigrafie cu hematii marcate sau angiografie hepatică. Studiul a avut ca scop evaluarea performanței tomografiei computerizate cu substanță de contrast în diagnosticul hemangioamelor hepatice.
Material și metode: Studiul a inclus 40 de pacienți examinați prin tomografie computerizată cu substanță de contrast care aveau un diagnostic de trimitere cum ar fi: hemangiom hepatic, metastaze hepatice și formațiuni de volum hepatice. Studiul s-a efectuat la Spitalul Internațional Medpark pe o perioadă de 6 luni.
Rezultate: Prezența unor caracteristici comune în aspect ecografic al hemangioamelor hepatice, metastazelor hepatice, dar și al proceselor neoplastice primare hepatice poate duce la stabilirea unui diagnostic incert care necesită investigații suplimentare. Astfel, la examinarea pacienților prin tomografie computerizată cu substanță de contrast, unde în dependență de modul de captare a substanței de contrast, putem confirma sau infirma diagnosticul de hemangiom hepatic. În urma studiului efectuat, s-a determinat că la 65% din pacienți a fost stabilit diagnosticul de hemangiom hepatic, la 17,5% – metastaze hepatice, iar 17,5% – suspecție de proces neoplastic primar.
Concluzie: Tomografia computerizată cu substanță de contrast are un rol determinant în stabilirea certă a diagnosticului de hemangiom hepatic.
Cuvinte cheie: hemangiom hepatic, tomografie computerizată, tumoare benignă.

Aspecte radioimagistice în diagnosticul malformațiilor reno-urinare la copii

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Introducere: În ultimele decenii, în Republica Moldova rata malformațiilor congenitale rămâne constant înaltă, poziționându-se pe locul doi în structura mortalității infantile. În anii 2011-2012, structura malformațiilor congenitale a fost dominată de malformații congenitale multiple (25%), cu o tendință de creștere a incidenței anomaliilor sistemului renal – de la 4,5% în 2011 la 9,4% în 2012, nivelul de depistare fiind în continuă ascensiune.
Material și metode: Pentru realizarea scopului și a obiectivelor, am trasat drept protocol metodologic efectuarea cercetărilor pe două paliere de suport: unul de studiu analitic – de cohortă și altul – studiu de gen descriptiv.
Rezultate: Ambele studii (cel descriptiv și cel analitic – de cohortă) au fost orientate spre evaluarea incidenței malformațiilor reno-urinare la copii conform datelor adresabilității, argumentarea metodelor de depistare precoce, monitorizare și tratament activ al acestora. Investigația radiologică a sistemului reno-urinar a fost indicată în cazul suspecției unei uropatii obstructive, urografia intravenoasă s-a efectuat după a treia săptămână de viață a copilului, cu utilizarea preparatelor de contrast în doze de până la 5-8 mg/kg. În urma cercetărilor complexe asupra malformațiilor congenitale nefro-urinare la copii s-a reușit completarea unor protocoale avizate de diagnostic prenatal și neonatal al malformațiilor reno-urinare în funcție de asocierea sau nu a infecției, prin care se poate implementa un sistem eficient de monitorizare a patologiei nefro-urinare la scară națională.
Concluzii: Diagnosticul dereglărilor urodinamice în primul an de viață a copilului permite inițierea tratamentului oportun și adecvat (terapia antibacteriană și corecția dereglărilor hidrodinamice), care va contribui la direcționarea procesului inflamator spre rezoluție și va preveni fibrogeneza.
Cuvinte-cheie: malformație reno-urinară, reflux vezico-renal, hidronefroză, diagnostic precoce, factor predispozant.

Pneumonia bacteriană distructivă acută la copii

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Introducere: Pneumonia bacteriană distructivă acută (PBDA) continuă să reprezinte o provocare atât în plan clinico-diagnostic, cât și de tratament.
Material și metode: Studiul a inclus 120 de pacienți cu pneumonie bacteriană distructivă acută, internați în secția de chirurgie septică a IMSP Institutul Mamei și Copilului în perioada anilor 2016-2017.
Rezultate: Din totalul de 120 de pacienți, 69 (57,5%) au fost de sex masculin și 51 (42.5%) de sex feminin. Repartiția conform vârstei a fost următoarea: 0,5-1 an – 10%; 1-3 ani – 34,2%; 3-5 ani – 27,5%; 5-7 ani – 14,2%; 7-10 ani – 9,1%; 10-16 ani – 5%. Circa 82,5% au fost din localități rurale și 17,5% – din localități urbane. Incidența cea mai înaltă a PBDA s-a determinat în perioada iarnă-primăvară (58,8%) și toamnă-iarnă (33,4%). Radiografia toracică a fost efectuată la toți pacienții. Alte investigații cum ar fi ultrasonografia sau scintigrafia pulmonară au fost necesare la 44 (36,7%) pacienți, iar tomografia computerizată – la 10 (8,3%) pacienți. Pulmonul drept a fost afectat în 57,5% cazuri, cel stâng – în 27,5% cazuri, iar ambii pulmoni – în 15% cazuri. Investigațiile imagistice au relevat: forma intrapleurală 28,3%, forma infiltrativă 79,4%, abces pulmonar 14,7%, forma buloasă 5,9%, forma pleuro-pulmonară 71,7%, pneumotorax 5,8%, piotorax 53,5%, piopneumotorax 40,7%.
Concluzii: În afara stabilirii diagnosticului, investigațiile imagistice utilizate au facilitat atât elaborarea strategiei terapeutice, cât și evaluarea răspunsului la tratament. Diagnosticul precoce și tratamentul adecvat în perioada incipientă previn complicațiile, reduc durata PBDA și ameliorează rezultatele tratamentului.
Cuvinte cheie: pneumonie bacteriană distructivă acută, diagnostic, investigații imagistice.

Radio-diagnosticul craniosinostozei la copii

Macştutis Artur

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Introducere: Craniosinostoza este o condiţie de fuziune precoce a unei sau mai multor suturi craniene, care rezultă în deformarea configuraţiei capului, asimetriei faciale, şi este însoţită de consecinţe funcţionale, precum creşterea presiunii intracraniene, tulburări vizuale, surditate şi dereglări cognitive. Craniosinostoza poate apărea primar şi secundar. Fuziunea prematură a unei sau mai multor suturi se consideră a fi cauzată de erorile din perioada de embriogeneză, rezultând în craniosinostoză primară. Craniosinostozele secundare se dezvoltă ca urmare a acţiunii factorilor mecanici, precum compresiunea intrauterină a craniului fetal, dereglărilor metabolice, acţiunii factorilor teratogeni. Aproximativ 85% din craniosinostozele primare se dezvoltă izolat, iar cele 15% rămase sunt parte a unor sindroame multisistemice.
Material şi metode: Lucrarea s-a efectuat pe un lot de 45 de pacienţi cu craniosinostoză, investigaţi în perioada anilor 2015-2018 în cadrul IMSP Institutul Mamei şi Copilului. Pacienţii au fost investigaţi atât prin radiografie craniană, cât şi prin tomografie computerizată.
Rezultate: Pe parcurs s-au diagnosticat următoarele tipuri de craniosinostoză: sagitală – la 25 (55,6%) pacienţi, coronară – la 10 (22,2%) pacienţi, metopică – la 5 (11,1%) pacienţi şi complexă – la 5 (11,1%) pacienţi. Radiografia craniului a relevat marginile suturilor afectate ca fiind şterse sau sclerotice, precum şi diverse anomalii ale formei capului (brahicefalie, dolicocefalie, plagiocefalie). Tomografia computerizată a relevat informaţii adiţionale referitor la anatomia detaliată a calvariei şi parenchimului cerebral, precum şi prezenţa anomaliilor asociate ale drenajului venos. Tomografia computerizată a permis de asemenea diagnosticul diferenţial cu alte anomalii congenitale sau tumori intracraniene.
Concluzii: Metodele imagistice sunt esenţiale pentru stabilirea diagnosticului corect, planificarea intervenţiei chirurgicale, evaluarea postoperatorie, identificarea anomaliilor coexistente şi complicaţiilor asociate cu craniosinostoza. Tomografia computerizată cu reconstrucţie 3-dimensională a fost metoda de elecţie pentru evaluarea pacienţilor cu craniosinostoză.
Cuvinte-cheie: craniosinostoză, tomografie computerizată.

Aspecte radiologice în sindromul de detresă respiratorie la copiii născuţi prematur şi complicaţiile înregistrate

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Introducere: Sindromul de detresă respiratorie (SDR) la copiii născuţi prematur, cunoscut şi ca boala membranelor hialinice, este o tulburare gravă a respiraţiei la nou-născuţii prematur, condiţionată de imaturitate pulmonară şi deficienţa primară de surfactant. SDR la copiii născuţi prematur prezintă o problemă majoră, deoarece se întâlneşte la 60% din născuţii la săptămâna a 28-a de gestaţie şi la 15-20% din născuţii la săptămâna a 32-36-a de gestaţie.
Conţinut: Pentru studiul dat a fost analizată literatura de specialitate din diferite baze de date. Datele elucidează importanţa investigaţiilor imagistice în diagnosticul SDR la copiii născuţi prematur şi complicaţiilor acestuia. SDR se manifestă în primele ore de viaţă a copilului născut prematur. Nefiind diagnosticată patologia progresează şi devine severă în primele 24-48 de ore cu numeroase complicaţii atât acute, cât şi cronice. Intervenţiile terapeutice au o importanţă majoră, în special în primele 4-6 ore după naştere, când majoritatea complicaţiilor pot fi prevenite.
Concluzii: Radiografia cutiei toracice rămâne cea mai simplă, cea mai eficientă şi cea mai disponibilă metodă pentru a obţine informaţii despre starea parenchimului pulmonar în condiţiile unităţii de terapie intensivă. Radiografia cutiei toracice este un test valoros pentru stabilirea diagnosticului, confirmarea poziţiei tuburilor şi cateterelor, precum şi monitorizarea dinamicii patologiei pulmonare.
Cuvinte-cheie: sindrom de detresă respiratorie, nou-născuţi prematur, diagnostic, complicaţii, radiografie toracică.

Uretrocistografia micţională retrogradă ca metodă de diagnostic a refluxului vezico-ureteral şi vezico-renal

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Introducere: Uretrocistografia micţională retrogradă este utilizată pentru confirmarea diagnosticului de reflux vezico-ureteral (RVU) sau vezico-renal (RVR). Scopul tratamentului constă în prevenirea injuriilor parenchimatoase renale, deşi mulţi pacienţi au deja cicatrici renale la momentul diagnosticului.

Material și metode: Studiul a inclus 180 de copii (105 fete și 75 de băieți) care au fost supravegheați pentru depistarea unui reflux pe o perioadă de 4 ani. Stabilirea diagnosticului de reflux vezico-ureteral a fost efectuată prin intermediul uretrocistografiei micționale retrograde. A fost evaluat tipul și gradul refluxului, precum și indicațiile și rezultatele terapeutice. Vârsta medie în lotul de diagnostic a fost de 26,8 luni.
Rezultate: Pielonefrita acută a fost primul indiciu care a inițiat investigațiile pentru diagnosticul refluxului la 139 (77%) de copii. Diagnosticul prenatal de reflux după detectarea dilatației pielicei a fost înregistrat la 29 (16%) copii. Refluxul a implicat un tract urinar simplu la 163 de copii și duplicitate a tractului urinar – la 17 copii. Refluxul a fost bilateral în 43% cazuri. La circa 1/3 pacienți refluxul a fost mai mic de gradul II, proporția fiind inversată însă pentru refluxul antenatal (62% cazuri ≥ gradul II). Tratamentul chirurgical a fost efectuat în 55% din cazuri, la restul pacienților (45%) fiindu-le administrat doar tratamentul terapeutic. Urmărirea în dinamică a pacienților a relevat o rată scăzută de pielonefrită recurentă, echivalentă în ambele grupuri.
Concluzii: Pielonefrita acută rămâne cauza principală a investigațiilor pentru diagnosticul refluxului vezico-ureteral și vezico-renal. Ultrasonografia renală cu cistografie retrogradă reprezintă investigațiile de primă intenție după un prim episod de infecție renală. Descoperirea refluxului în timpul diagnosticului antenatal este efectuat prin screening.
Cuvinte-cheie: reflux vezico-ureteral, nefropatie de reflux, uretrocistografie micțională retrogradă.

Diagnosticul diferențial al bolilor pulmonare chistice

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Introducere: Bolile pulmonare chistice au un diagnostic diferențial larg. O mare varietate de procese patofiziologice pot duce la dezvoltarea chisturilor multifocale în plămâni prin diverse mecanisme cum ar fi obstrucția căilor respiratorii, necroza pereților căilor respiratorii, distrugerea parenchimului pulmonar și remodelarea pulmonară. Lucrarea a avut ca scop studiul aportului investigațiilor radiologice în diagnosticul diferențial al bolilor pulmonare chistice.
Material și metode: S-a interogat baza de date PubMed cu cuvintele-cheie: boli pulmonare chistice, radio-diagnostic, diagnostic diferențial, investigații radiologice. Articolele selectate au fost studiate cu efectuarea unei sinteze a datelor obținute.
Rezultate: Datele căutării au relevat peste 1500 de articole, după procesarea cărora au fost selectate 65 de articole de cercetare relevante. În stadiile incipiente radiografia toracică poate detecta unele modificări inițiale cum ar fi hiperinflația și îngroșarea peribronșică. În stadiile mai avansate, radiografia poate releva diverse chisturi pulmonare, abcese, infiltrate, hiperinflație marcată cu domuri diafragmatice distensionate, precum și semne de hipertensiune pulmonară cu dilatarea arterei pulmonare, hipertrofie ventriculară dreaptă și cord pulmonar. Tomografia computerizată relevă informații mult mai ample, fiind superioară radiografiei toracice în demonstrarea bronșiectaziilor, zonelor de blocaj mucos, precum și definirii exacte a extinderii patologiilor pulmonare și structurilor anatomice afectate. Majoritatea studiilor indică faptul că tomografia computerizată de rezoluție înaltă oferă informații mult mai detaliate pentru definirea aspectelor morfologice și determinarea distribuției chisturilor pulmonare, precum și pentru caracterizarea patologiilor asociate.
Concluzii: Corelarea datelor clinice, evoluției în dinamică și investigațiilor imagistice furnizează indicii importante pentru definirea naturii subiacente a bolilor pulmonare chistice, facilitând diagnosticul și elaborarea strategiei terapeutice.
Cuvinte-cheie: boli pulmonare chistice, diagnostic diferențial, tomografie computerizată.

Aportul investigațiilor imagistice în diagnosticul traumatismului orbitar

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Introducere: Traumatismul orbitar reprezintă o condiție patologică frecvent invalidizantă, cu incidență sporită în țările în curs de dezvoltare. Costurile sociale și economice ale acestei patologii sunt importante, iar diagnosticul precoce este esențial pentru prevenirea complicațiilor și invalidității.
Material și metode: Studiul a inclus 50 de pacienți cu traumatism ocular, internați la Spitalului Clinic Republican.
Rezultate: Circa 72,6% din pacienți au fost din mediul rural și 27,4% din mediul urban, bărbații fiind afectați mai frecvent ca femeile (63,9% *vs* 36,1%). Prezentările clinice mai frecvente au inclus: conjunctivită (97,0%), uveită (39,9%), traumatism cranio-cerebral (30,9%) și rinosinusopatii asociate (12,9%). Complicațiile frecvent diagnosticate în urma investigațiilor imagistice au inclus: fracturi ale pereților orbitari (84,0%), (peretele orbitar inferior – 39,8%, peretele orbitar medial – 19,2%, peretele orbitar lateral – 18,1%, fractura fisurii orbitare inferioare – 10,2%, fractura fisurii orbitare superioare – 6,9%), prezență de corpi străini intraorbitari (62,3%) și hemoftalm (14,1%). Metodele de investigație au inclus examenul radiologic convențional, metodele radiologice speciale (metoda Comberg-Baltin, Focht, metoda cu sondă), ultrasonografia oculară, iar în caz de necesitate – tomografia computerizată și investigația prin rezonanță magnetică.

Concluzii: Examenul radiologic convențional, metodele radiologice speciale și ultrasonografia oculară reprezintă metodele imagistice de primă intenție în managmentul traumatismului orbitar, utilizate atât pentru diagnosticul pozitiv cât și localizarea corpilor străini intraorbitari roentgen-pozitivi și, respectiv, roentgen-negativi. În caz de leziuni anatomice asociate se recomandă recurgerea la tomografia computerizată și, uneori, la investigație prin rezonanță magnetică, care dispun de sensibilitate și specificitate sporite în comparație cu metodele imagistice convenționale.
Cuvinte-cheie: traumatism orbitar, corpi străini intraorbitari, ultrasonografie oculară.

Rolul radiografiei toracice în evaluarea stării postoperatorii la pacienții supuși operațiilor cardiace

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Introducere: Realizarea radiografiilor toracice de rutină după intervenția chirurgicală cardiacă este o practică comună la nivel mondial, deși apariția a noi modalități imagistice în ultimii ani oferă metode alternative de diagnostic. Lucrarea a avut ca scop aprecierea rolului radiografiei toracice în evaluarea postoperatorie a pacienților supuși chirurgiei cardiace.
Material și metode: Studiul a inclus 50 de pacienți supuși intervențiilor chirurgicale cardiace în cadrul Spitalului Internațional Medpark în perioada octombrie 2017-martie 2018. Radiografiile toracice efectuate în perioada post-operatorie și patologiile detectate au fost evaluate.
Rezultate: Analiza celor 50 de radiografii post-operatorii a relevat depistarea următoarelor patologii: 40 de radiografii au demonstrat colecții pleurale lichidiene, dintre care 12 unilaterale și 28 bilaterale; 6 radiografii au confirmat sindroame de condensare pulmonară și 4 radiografii au prezentat semne radiologice sugestive pentru edem pulmonar. În majoritatea cazurilor modificările detectate au contribuit la determinarea sau modificarea strategiei terapeutice. Din totalul de 50 de radiografii efectuate, doar 5 nu au constatat modificări radiologice relevante.
Concluzii: În pofida disponibilității unei game largi de metode imagistice moderne, radiografia toracică își menține actualitatea datorită accesibilității sale și posibilității efectuării investigației la patul bolnavului. Radiografia este frecvent indicată ca explorare de primă intenție la pacienții supuși operațiilor cardiace în perioada postoperatorie imediată, când aceștia sunt conectați la aparate multiple, inclusiv pentru suport ventilator, iar transportul pentru diverse investigații este relativ dificil. În perioada postoperatorie tardivă, în condiții de ambulator, radiografia toracică de rutină este însă mai puțin justificată și trebuie efectuată doar conform indicațiilor clinice.
Cuvinte-cheie: radiografie toracică, intervenții chirurgicale cardiace, perioadă postoperatorie.

Diagnosticul imagistic al tumorilor renale la copii

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Introducere: Tumorile renale constituie aproximativ 7% din totalul tumorilor la copii. Cea mai frecventă este tumora Wilms, incidența sa fiind de 6-9 cazuri la 1 milion de copii, conform datelor Agenției Internaționale pentru Cercetare în domeniul Cancerului (International Agency for Research on Cancer). Studiul a avut ca scop determinarea metodei de diagnostic de elecție pentru evaluarea tumorilor renale la copii.
Material și metode: A fost efectuată o revistă a literaturii, interogându-se baza de date PubMed, pentru aprecierea tacticii de diagnostic imagistic al tumorilor renale la copii.
Rezultate: În urma căutării au fost selectate 194 de articole. Analiza datelor indică că screening-ul patologiilor renale este efectuat cu ajutorul ultrasonografiei. Cu toate că este dependentă de examinator, cu un câmp de vizualizare relativ limitat, metoda este pe larg accesibilă, minim invazivă și fără radiații ionizante. Tomografia computerizată (TC) și investigația prin rezonanță magnetică (IRM) relevă detalii suplimentare referitor la stadiul tumoral și invazia organelor adiacente. TC necesită un timp de investigație mai scurt, este mai accesibilă și mai puțin costisitoare comparativ cu IRM. TC cu substanță de contrast este utilizată pe larg și pentru evaluarea maselor renale chistice conform clasificării Bosniak în 5 categorii în funcție de atenuare, captarea substanței de contrast, prezența calcificărilor și septărilor. IRM are însă o rezoluție superioară pentru țesuturile moi, substanța de contrast fiind mai puțin alergică și nu implică radiații ionizante, ceea ce are o importanță majoră la copii.
Rezultate: Ultrasonografia este frecvent utilizată ca metodă de screening sau de primă intenție pentru evaluarea patologiilor renale la copii. TC și IRM relevă informații suplimentare în evaluarea stadiului tumoral și elaborarea strategiei terapeutice.
Cuvinte-cheie: tumori renale, diagnostic imagistic, ultrasonografie.

Aspectul radiologic al modificărilor scheletale în boala Bechterew

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Introducere: Boala Bechterew reprezintă o afecțiune inflamatorie cronică, multisistemică, care afectează primar articulațiile sacro-iliace și scheletul axial. Scopul studiului constă în determinarea frecvenței apariției modificărilor scheletale la nivelul coloanei vertebrale, bazinului și articulațiilor coxofemurale în boala Bechterew cât și importanța investigațiilor radiologice în diagnosticul bolii Bechterew.
Material și metode: Studiul a fost efectuat pe baza radiografiilor a 40 de pacienți (23 bărbați și 17 femei) cu vârsta cuprinsă între 26 și 65 de ani, investigați în cadrul Spitalului Clinic Republican. Acestea au fost examinate în conformitate cu scorul BASRI (Bath Ankylosing Radiology Index). Au fost analizate diferențele dintre gradul afectării articulației sacroiliace dreaptă și stângă; frecvența progresiei spre o fuziune spinală completă, anchiloză, cât și posibilitatea unei asocieri între afectarea articulației coxofemurale și a unui segment al coloanei vertebrale.
Rezultate: În baza analizei radiografiilor, s-a confirmat frecvența crescută a afectării articulațiilor sacroiliace, dar și a coloanei vertebrale lombare, urmate de coloana vertebrală cervicală și toracală. Fuziunea spinală completă a fost observată la 7 dintre pacienții supuși studiului, anchiloza – la 17 dintre aceștia, cu vârsta de peste 45 de ani.
Concluzii: Radiografia este o metodă de elecție în depistarea și diagnosticarea bolii Bechterew, prin intermediul căreia poate fi ușor apreciat gradul și severitatea afectării. În majoritatea cazurilor din acest studiu au fost evidențiate afectarea primară a articulațiilor sacroiliace, la unii pacienți cu asocierea unui segment al coloanei vertebrale.
Cuvinte cheie: boala Bechterew, anchiloză, articulații sacroiliace, modificări scheletale.

Diagnosticul cancerului glandei mamare prin mamografie

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Introducere: Mamografia reprezintă o examinare a sânilor cu ajutorul razelor X, folosită pentru detectarea și diagnosticul afecțiunilor mamare. Utilizarea mamografiei digitale este în creștere, iar ratele de detecție sunt mai mari. Scopul acestui studiu a fost evaluarea rolului mamografiei în diagnosticul cancerului glandei mamare.
Material și metode: Au fost analizate datele din cadrul Biroului Național de Statistică al Republicii Moldova referitor la pacientele cu cancer mamar, diagnosticate prin mamografie în perioada 2016-2017 în Republica Moldova.
Rezultate: Datele statistice disponibile în cadrul Biroului Național de Statistică indică un număr total de 1156 de paciente la care mamografia a relevat leziuni mamare suspecte de a fi maligne în această perioadă. Vârsta pacientelor a variat între 41 și 75 de ani, media fiind de 48,6 ani. Din totalul de 1156 de paciente cu leziuni mamografice suspecte pentru cancer mamar, 885 au avut confirmarea de afectare malignă prin examen histopatologic efectuat în urma biopsiei, iar 271 de paciente au fost diagnosticate cu leziuni mamare benigne.
Concluzii: Mamografia continuă să reprezinte o modalitate importantă în diagnosticul cancerului mamar. Tehnica furnizează informații importante referitor la diverse modificări patologice precum distorsiune arhitecturală, densități crescute, opacități nodulare, micro- sau macrocalcificări, iar prezența concomitentă a câtorva elemente patologice facilitează mult diagnosticul. În cadrul acestui studiu, din totalul de 1156 de paciente cu leziuni mamografice suspecte, cancerul mamar a fost confirmat histopatologic în peste 75% cazuri.
Cuvinte-cheie: mamografie, cancer al glandei mamare, patologii mamare.

CONTENTS CONTENT CUPRINS

ABSTRACTS

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3. If the article requires some modifications, it is returned to the author(s) to be revised, taking into account the reviewer's recommendations. The modified version is then again forwarded to the reviewer, to consider a possibility for the publication of the article.

4. The accepted article is forwarded for scientific editing and proofreading. The final version is adjusted with authors for approving and for correction of possible inexactitudes. However, essential modifications by the author(s) after editing and proofreading are not allowed.

5. In case an article is rejected, the author(s) receive a well-reasoned explanation from the Editorial Board.

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3. The Editorial Board considers only previously unpublished manuscripts, containing the results of original research or detailed thematic review on the medicine, dentistry, pharmacy, social medicine and public health. In case of submitting a previously published article (or sent for publication in any other journal), repeating the pending article for more than 50%, the Editorial Board reserves the right to reject the article from being published in the "The Moldovan Medical Journal".

4. The editors do not impose authors to cite papers published in "The Moldovan Medical Journal" in order to artificially improve scientometric indicators of the journal.

5. The Editorial Board ensures that submitted material will be subject for a peer review by anonymous independent experts.

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