**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%).