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GENERALITĂȚI

ATLS IN MOLDOVA



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Background: Moldova is a country in Europe that trying to improve the health system with what is available. The mortality rate was found to be extremely high after major road traffic accident and this is due to poor old Soviet medical system in the hospital.

Aim: The aim of our work, was to introduce a safe world wide recognised system to all doctors who are involved in trauma and to make sure they all have a simple common language

Method: An application has been made two years ago to the American College of Surgeon in order to obtain license to introduce and teach Advanced trauma Life Support in Moldova. This application was approved 18 months later and the license has been given to ATORM.

Results: The first 16 candidates will be going to UK to get taught ATLS and some of them will become international and national instructors for ATLS. The procedure will continue afterwards and further 16 candidates will be taught and the ball will role over.

Discussion: It is crucial and very important to introduce such teaching method and try to achieve a better health care system in Moldova. According to WHO, the mortality rate after major trauma in Moldavian Hospital is almost 70% and it is the highest together with Russia in the world. Not only, but the system has to be supported by all level of society in order to achieve better health care and trauma system in Moldova

Conclusion: The introduction of ATLS in Moldova is happening, and the system will start to function as soon as possible and we will reduce the mortality rate of trauma patients in this country.

ATLS IN REPUBLIC OF MOLDOVA



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Background: In RM the mortality rate remains high in serious injuries due to a flawed healthcare system. At the moment they try to improve quality of healthcare with available resources of both government institutions as well as non-governmental organizations.

The aim: The aim of our work was to implement a performing program to train doctors preoccupied in severely traumatized patient's care. Currently one of the most popular same programs is also ATLS.

Materials and methods: The process started with the application request for accession to the American College of Surgeons in 2014 on the initiative by the management ATORM, Dr. Bassel El-Osta and the British Ambassador in RM His honority Phil Batson. In July 2015, Moldova was visited by Prof.dr. I.B. Schipper , ATLS Region 15 Chief, Europe and Africa and A. Baker, Chair of ATLS Europe, who visited IMU and CUSIM. On July 29, 2015 was signed MOU between ATORM and ACS. Later with the support of UK Embassy in the RM, MS RM, IMU, The Swiss Cooperation in Moldova, SUMP "N. Testemițanu" it was possible in June 2016 departure of 16 candidates in Nottingham, UK for study ATLS course. All participants supported the successful course, becoming ATLS providers, 8 of them ATLS instructors. In November 2016 it is planned to hold ATLS course in RM by a team of local and international instructors.

Discussions: It is absolutely crucial to implement the ATLS principles in RM. According to literature data implementing the ATLS principles lowers severely traumatized patient hospital mortality by up to 30%. The base of the process of implementing has been already made, now it is necessary to continue the process.

Conclusions: The process of implementing the ATLS principles in RM is already in process, the implementation of which will allow local healthcare system to significantly reduce mortality in severe multiple trauma.

ADVANCED TRAUMA LIFE SUPPORT (ATLS)



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About

ATLS is an accredited course for doctors dealing with trauma patients, developed by American College of Surgeons trauma committee.

History

The ATLS course was created by an American orthopaedic surgeon James K. Styner after a tragic airplane accident in 1976, as he crashed in his private plane in the wastelands of Nebraska. Dr. Styner tragic experience it has imposed on developing a program for improving life saving actions in trauma patient. In 1978 it was proposed the first version of this program. So that in 1980 the program was taken over by American College of Surgeons and implemented in USA and Canada. Currently this program is considered one of the most successful programs for saving the lives of trauma patients and is implemented in over 60 countries. The principle of the program is based on primary and secondary survey.

First aid is provided based on firmly structured vertical algorithm of ABCDE. «A» means airway maintenance with cervical spine protection, «B» is ensuring breathing and ventilation, «C» is circulation with haemorrhage control, «D» means disability/neurologic assessment, and «E» is exposure and environmental control.

ABCDE operates according to a strict structure: if «B» does not work, one may not take «C» first, nor jump from «B» to «D» etc. Once the initial algorithm is passed, the patient may be further examined.

According to literature data implementing the ATLS principles lowers severely traumatized patient hospital mortality by up to 30%.

ATLS principles are constantly improving and are reinforced by reprinting single manual that now reached the ninth edition. In conclusion from the above it is clear that adherence to the principles of ATLS is beneficial for all health systems.

OSTEOSINTEZA LA ADULȚI

INDICATIONS AND TREATMENT OF DISTAL RADIUS FRACTURE



Titi Bajenescu, Alexandru Serban, Camelia Tecu, Bogdan Apipie, Igor Bordea, Oleg Didenco

SCJU Constanța

Objective of the study

Distal radius fracture is the most common fracture found in humans (Court-Brown and Caesar, 2006). Much has been written about this topic but there are many questions that remain, including controversy about the indications and appropriate treatment.

Material and methods

In the period 01.04.2013-01.10.2015 in Orthopaedic Clinic of SCJU Constanta were operated a number of 74 patients with this type of fracture. According to AO classification there were distributed as follows: type 2.3 -A : 19 patients ; type 2.3 -B : 8 patients , 2.3 -C: 47 patients.

Results. Discussion

Stable fractures can be treated conservatively and the unstable require surgical intervention.

Surgical methods used were percutaneous pins , external fixation , plate fixation.

Radiological control was performed immediately and postoperatively, at 6 and 12 weeks.

Conclusions

Therapeutic indications in distal radius fracture requires a well established algorithm for an anatomical reduction and good functional results .

Keywords: fracture , radius, plate

THE SURGICAL TREATMENT OF FRACTURES OF THE LOWER EXTREMITY OF THE TIBIA, SOME ASPECTS



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Material and methods. The authors present the results of treatment of a group of 30 patients with epimetaphyseal and metaphyseal fractures of the tibia type IC 4 1 A2-A3/AO and IC 4 3 A2-A3-B1/AO, average age 48 years. The article describes the results of practical application of the osteosynthesis methods used most often in terms of Orthopaedics and Traumatology department no. 1 of the Institute of Emergency Medicine: extrafocal osteosynthesis with rodded apparatus and a variant of the development of a relatively new surgical techniques - Minimally Invasive Plate Osteosynthesis / MIPO (indirect reduction and minimally invasive osteosynthesis with plates) with the application of the general principle in the osteosynthesis of distal metaphyseal fractures of the tibia.

Results. The studied group showed no postoperative septic complications. Consolidation of the fragments (full support) on the affected limb was established in medium: over 5 months - after minimally invasive plate osteosynthesis according to MIPO principles, over 5.5 months - after extrafocal osteosynthesis with external rodded device. Assessment of treatment outcomes of patients with distal leg fractures was performed using the method Lyuboshits - Mattis - Schwartzberg 1985: from 3.5 to 4 points (good result). Good functional outcomes, over 1 year, at 20 patients examined according to the quality of life score SF36.

Keywords: surgical treatment, fractures of the lower extremity of the tibia

OUR EXPERIENCE IN THE SURGICAL TREATMENT OF THE TIBIAL PILON FRACTURES



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Aim of study: to analyse the result of the surgical treatment of tibial pilon fractures.

Materials and methods: We analyze the results of the surgical treatment of 51 tibial pilon fractures treated in the last four years, according on the severity of bone fracture and soft tissue lesions. We performed fixation in each case in one (35 patients) or two stages (16 patients), using the classifications Ruedi-Allgower and Tscherné. At the first stage we manage with the use of external fixation following the AO-ASIF principles: ligamentotaxis in the Ilizarov external fixation or Delta-framed external fixator across the ankle joint. At second stage was performed reduction and reconstruction of the articular surface with medial stabilization with a MIPO using a technique requiring only limited skin incisions (a reduced invasive technique).

Results: Twenty-three fractures type Ruedi-Allgower I-II healed within an average of four months. 38 patients has developed posttraumatic arthrosis, 21 articular stiffness, 4 superficial skin necrosis, 3 osteomyelitis, 7 mechanical complication.

Conclusions: On the basis of our results, we now prefer a two-step procedure for the treatment of tibial pilon fractures. In the first stage, primary reduction and external fixation applied across the ankle joint. After recovery of the soft tissues, the second stage entails internal fixation with a medial plate using a reduced invasive technique.

Keywords: tibial pilon fracture, MIPO, postoperative complications.

SURGICAL TREATMENT OF THE DISLOCATIONS AND FRACTURE DISLOCATIONS OF CARPAL BONES



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The aim: Dislocations and fractures - dislocations of the carpal bones of the wrist are serious injuries. The problems of diagnosis and treatment of the these lesions are discussed extensively in specialty literature, but the diagnostic mistakes committed during the acute dislocation and fracture-dislocations of the carpal bones reaches 60%, a fact which shows the increasing number of outdated injuries difficulties in treatment and unfavorable functional outcomes.

Materials and methods: In department of the Hand surgery CHTO for 2006-2015 were found on stationary treatment 89 patients with dislocations and fracture-dislocations of the carpal bones. The most frequent were traumatized in the period of working age - to 40 years - 70 (79%) patients.

The analysis of clinical cases demonstrated that causes of the outdated injuries were diagnostic errors to 43 (50%) patients, treatment errors in 18 (20%) patients and the associated concomitant injuries 22 (25%).

As the surgical treatment, indications were failures orthopedic reduction of the dislocation and fracture - dislocations of the carpal bones, fragments displacements scaphoid bone and outdated perilunate injuries.

Results: Open reduction of dislocation and fracture-dislocations of the carpal bones was performed in 78 (87.6%) patients, of whom 36 (40.4%) open reduction was performed in one-step, but in others 42 (47, 2%) patients open reduction was performed in two stages with the use of preventive external fixator for ligamento-capsulo-taxis of the wrist.

On 8 (9%) patients with outdated perilunate fracture-dislocations have been performed selective arthrodesis by 4 carpal bones with excision the fragments scaphoid bone.

In a patient with degree V of perilunate dislocation - with enucleation lunate bone in the forearm was performed replanting of lunate bone, and in another patient was performed excision lunate bone.

Conclusions: The procedures of the surgical treatment of dislocation and fractures-luxations of the carpal bones have facilitated the obtaining of positive results in 81 (91%) patients.

Keywords: Carpal bones, fracture dislocations.

TREATMENT OF DISPLACED FEMORAL NECK FRACTURES IN ADULT AND ELDERLY PATIENTS



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The aim of this study is to analyze the incidence, comorbidities, treatment results and mortality in patients with displaced femoral neck fractures hospitalized during 01.01.2012 -31.12.2012 in Orthopedy and Traumatology clinic „Vitalie Bețșor”.

Materials and methods

Study includes 211 cases (136 women with average 73 years and 75 men with average 64 years) treated with displaced femoral neck fracture, that were examined clinically and radiologically after 2 years of follow-up. The results was objectivized with Harris hip score evaluation and EQ-VAS life quality self-assessment. Fracture management was performed depending of

patient health state, hospital endowment at that moment and patient/relatives desire. Functional treatment was performed in 64 patients (average 75 years), osteosynthesis in 18 (average 48 years) and hip prosthesis in 129 (average 70.41 years).

Results

In 2012, medical care received 283 patients (7.51%) with femoral neck fracture, of which displaced was 211 (74.35%), comorbidities was present in 97.15% of these patients. During hospitalization in functionally treated patients group were 3 deaths and those with hip prosthesis – 2. Overall mortality at 2 years was 28.9%. Harris hip score in patients treated functionally is 40.35 points, in those with osteosynthesis – 74.75 points and hip prosthesis – 81.28 points; respectively EQ-VAS is 21, 61.8 and 79.5. Radiological exam found in osteosynthesis group: pseudoarthrosis in 2 cases and avascular necrosis of femoral head – 3 cases; in hip prosthesis group: subsiding – 4 cases and periarticular ossification – 13 cases.

Conclusions

Hip fractures in older people is a serious concern for society. In this study femoral neck fractures amounted 7.51% of all hospitalized patients in our clinic. Comorbidities were present at 97.15% of examined cases. Mortality at 2 years follow-up was 28.9%. The best results were found in hip prosthesis group.

Keywords: femoral neck, fracture, prosthesis, osteosynthesis

THE SURGICAL TREATMENT OF THE DISTAL METAPHYSIS RADIUS FRACTURES (DMFR)



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The goal of our study was retro and prospective analysis of the results of surgical treatment of DMFR

Material and methods: In Hand Surgery Department during the period of years 2011-2015 were diagnosed and treated surgically 546 patients with DMFR (male: female = 1.78: 1).

The average age of 59.3 years for men and women 60.2 years, mean age 58.5 years.

Predominantly rural population with a ratio of 1.5: 1.

Right hand is most often traumatized to the left hand and bilateral with a ratio of 7.75: 3.75: 1.

According to the classification Kapandji (K) and AO in our practice we have met the following cases: 18(3,30%) – K.I(AO:23-A2.2 - 11 ;23-A3 - 7 patients), 272(49,82%) cases – K.II(AO:23-C1.1), 51(9,34%) – K.III(AO:23-C1.3), 14(2,56%) – K.IV(AO:23-C1.2), 15(2,75%) – K.V(AO:23-B1.1 - 11 cases ;23-B1.2 - 4 cases), 7(1,28%) – K.VI(AO:23-B2.1 - 4 cases;23-B2.2 - 3; 23-B2.3 - 1 case), 8(1,47%) – K.VII(AO:23-B3.1 - 5 cases ;23-B3.2 - 1 case ;23-B3.3 - 2 cases), 8(1,47%) – K.VIII(AO:23-A2.3), 80(14,65%) – K.IX(AO:23-C3), 25(4,58%) – K.X(AO:23-C2.1 - 16 cases;23-C2.2 - 7 cases ;23-C2.3 - 2 cases).

According to the classification proposed by Максимов А. (2013), the viciously consolidated fracture of the radial distal metaphysis we have 48(8,79%) cases – K.11(type1 - 4 cases; type2 - 30 cases; type3 - 12 cases; type4 - 2 cases).

Depending on the type of fracture, the extent of stability and impaction, the type and the tilting angle of fragments, the surgical treatment was performed by the following methods: osteosynthesis with brooches - 149(27,38%); intrafocal osteosynthesis with brooches - method Kapandji – 269(49,24%) patients; plate osteosynthesis - 67(12,23%); ligamentocapsulotaxia in external fixation appliance - 13(2,36%); corrective osteotomy – k-wire osteosynthesis – 24(4,40%); corrective osteotomy - plate osteosynthesis – 16(2,93%); osteoclasia - plate osteosynthesis – 8(1,47%);

In 29(5,31%) cases was determined acute carpal tunnel syndrome, which has intervened by decompression of the median nerve. In 5(0,92%) cases K.XI (tip2,3,4) was determined carpal tunnel syndrome, the median nerve compression ultrasonography was determined in the carpal tunnel more than 18% versus proximal, was performed excision of the carpal ligament and median nerve neurolysis.

Conclusion

- The problem of treatment DMFR far remains current, despite of the successes in the treatment of orthopedic and experience in the treatment FMDR

- In our study, most patients were treated by the method Kapandji - 269(49,24%), that ensuring a good bone junction, excluding secondary displacement.

- With a minimum operator volume, exclude the risk of complications and allows a more rapid rehabilitation hand.

TREATMENT RESULTS OF OPEN FRACTURES OF TUBULAR BONES



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The aim of the study: evaluation of the results of the treatment of open fractures of tubular bones in patients treated in the department of Orthopedics in the IEM from Chisinau.

Material and methods: during the period 2015-2016, 48 patients were examined and treated for open fractures of the tubular bones. Out of the total number of patients, 91,7% of patients underwent surgical treatment. The sex ratio being: women – 21 and men – 27 persons, the average age was 48 years (21-85 y.o.). The distribution by fractured segments is: humerus -8, forearm bones -13, femur -5, shin bones -22 cases. The AO and Gustilo-Anderson classifications were applied. In 4 cases there were applied nonsurgical treatment. In the rest of the patients treated surgically, the distribution of methods of osteosynthesis was: ORIF -9; osteosynthesis by K-wires -9; Ilizarov's method -11; external fixation -2 cases; locked intramedullary nailing -6; tension band wiring -2; amputation (MESS score 9 points) -1 case.

Results: Immediate results were appreciated according to postoperative radiological appearance, in 97,91% cases all the fractures united in axial alignment, it was appreciated as positive results. Follow-up results valued according to radiological appearance, full range motion of the traumatized limb, and the quality of life: excellent and good in 42 cases, satisfactory – 2 cases and unsatisfactory – 4 cases. There were determined the following complications: joint stiffness -2 cases, femoro-patellar artrosis – 1 case, slow fusion -1 cases, infectious complications -2 cases, amputation – 1 case.

Conclusions: There is a big incidence of open fractures of tubular bones. A lot cases of open fractures were treated in surgical way. The treatment for open fractures in the department of Orthopedics in IEM shows good results.

Keywords: open fracture, tubular bones, surgical treatment.

FAILURE OSTEOSYNTHESIS IN A OPEN DIAPHYSEAL FEMORAL FRACTURE (CASE STUDY)



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The aim: presentation of a treatment strategy in a clinical case of open femoral fracture with septic manifestations.

Materials and methods: Patient, male of 21 years old, in august 2014 as a result of an accident (motorcycle), he suffered an open diaphyseal fracture of the right femur (Gustillo-Andersen type II). Within 24 hours the patient was operated in a district hospital: surgical debridement and plate osteosynthesis. In postoperative period appeared clinical signs of septic process that was confirmed by laboratory tests. After a month he was transferred to our clinic. On clinical and radiological examination was revealed instability of osteosynthesis, micromicromobility at the fracture site and compressive hematoma on the right femur. We performed repeated debridement and bridge-plate osteosynthesis. In postoperative period the wound healed primary and inflammatory signs disappeared. The patient walked with crutches without loading operated leg during 3 months. At repeated control there was no radiological signs of consolidation. A bone plasty was proposed to patient, that he refused and followed dosed loading on the operated leg. At 5 months he presented with misalignment of bone fragments. Finally patient underwent repeated autoosteoplastic osteosynthesis with angular stability plate. Postoperative evolution was normal, patient initiated partial support after 2,5 months and total to 5 months.

Results: At 6 months after the last intervention clinical and radiological evolution was favorable.

The pain disappeared at total weight bearing, the volume of mobility of knee at the same side are complete. There are signs of bone consolidation.

Conclusions: Although the final outcome of treatment is considered as good, the method of osteosynthesis remains questionable.

Keywords: femur, open fracture, osteosynthesis

MANAGEMENT OF THE HIP PERIPROSTHETIC FRACTURES



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The purpose of the study: The analysis of the treatment methods in periprosthetic fractures after hip arthroplasty, with correlation between the experience of the authors and literature data.

Methods: During the years 2010-2014 in our clinic were performed 67 revision surgical procedures of periprosthetic fractures after the hip replacements. Of these 25 were males and 42 were females; the mean cohort age was 64 year, ranging from 54

ap to 79 years. Elapsed time from the primary arthroplasty up to the revision of the periprosthetic fractures varied from 2 months up to the 13 years. Cases were staggered according to Vancouver classification. We have encountered fractures of type AG in 4 cases, type AL - 3 cases, type B1 - 12 cases, type B2 - 14 cases, type B3 - 7 cases, type C - 27 cases. Fractures of the type A have been treated with simple wire fixation (4 cases) tension band wiring (3 cases). Fractures of the type B1 were treated by the plate osteosynthesis; type B2 and B3 - by revision arthroplasty. In fractures type C we performed the osteosynthesis by the plates with angular stability in 15 cases or regular plates with association of the bone grafts in 12 cases.

Results: In fractures of the type A we found one case of osteosynthesis instability, which was well tolerated by the patient. Fractures of the type B represent one of the biggest problems. Especially type B1 and B2, when was difficult to differentiate if the stem was stable or not. In 3 cases we did mistakes in appreciation of the type B1 and performed the osteosynthesis. In all these cases occurred the instability of the stem, that led to the revision arthroplasty procedure. In cases of the fractures type C we met the problem of the associated osteoporosis. This led to technical difficulties in achieving stable osteosynthesis by regular plates.

Conclusions: The results confirm that correct classification, compliance with treatment protocols of the hip periprosthetic fractures and strict differenciation between different types of the fractures can lead to good functional result.

Keywords: periprosthetic fractures, Vancouver classification, revision hip arthroplasty

RESULTS OF SURGICAL TREATMENT OF NEER 4-PART FRACTURE-DISLOCATIONS OF PROXIMAL HUMERUS



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Purpose: to analyze results of ORIF surgical treatment of Neer 4-part fracture-dislocation of proximal humerus (FDPH).

Material and methods: in period 2013-2015, in IEM's Orthopedics Department were treated 11 patients with Neer 4-part FDPH, injury's nature being specified by Rx and CT-scan. All patients underwent ORIF, in 6 cases with T-plate and 5 cases-Philos plate, at 9-40 hours after trauma. Gender distribution: 6 women and 5 men, with age limits: 28 and 67 years. Right thoracic limb was fractured in 7 cases, left - 4 cases. All dislocations were anterior. Patients were monitored 6-18 months. Deltoido-pectoral approach was performed in 8 cases and transcoracoid - 3 cases, being used in marked displacement of humeral head to prevent neuro-vascular complications. Long bicipital tendon was used as anatomical landmark between greater and lesser tubercle, which were fixed to plate with non-absorbable threads. Diaphysis was impacted in order to obtain primary stability. Functional outcomes were assessed using Constant score and analog pain scale.

Results: at 6-8 months was determined 120° flexion angle (in 90-135° diapason), average abduction angle - 100° (in 70-140° diapason). Average Constant score was 72 points (in 60-85 diapason). Mild pain was determined in 7 cases, moderate - 4 cases. In 8 cases fracture was at surgical neck's level, in 3 cases - anatomical neck's level. In 1 case was detected transient axillary nerve injury, screw's migration from humeral head - 1 case, humeral head's AN - 5 cases and vicious consolidation - 3 cases.

Conclusions:

1. Successful treatment of given injury is provided by anatomic reduction and stable fixation, with maximum maintaining of fragments blood supply.
2. Humeral head's AN doesn't exclude good functional outcome, unlike fragments vicious consolidation.
3. Transcoracoid approach allows avoiding of severe neuro-vascular complications, ensures convenient fragments reposition and fixation.

Keywords: fracture-dislocation, proximal humerus.

PARTICULARITIES OF POSTTRAUMATIC RETROPERITONEAL HEMORRHAGE IN PELVIC FRACTURES



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Aim: To study the particularities of posttraumatic retroperitoneal hemorrhage in pelvic fractures.

Material and methods: We present the analysis of patients with pelvic fractures and retroperitoneal hemorrhages (n=201). The average age of patients was 38,26±15,03 years. Clinical examination (n=152) and forensic-medical examination (n=49) was carried out for evaluation of the volume and source of retroperitoneal hemorrhages. Patients with stable hemodynamic

were examined by the standard scheme: pelvic X-rays, USG, CT. Pelvic injuries were divided according to M.Tile classification, retroperitoneal hemorrhage – according to zonal Sheldon classification.

Results: Localization and volume of the pelvic retroperitoneal hematoma was determined by the source of bleeding, spreading according to pelvic ring instability, severity of internal organs injuries and pelvic vessels lesions. Pelvic fractures: type A - 75(37,31%), B - 55(27,36%), C - 71(35,32%). It was established that pelvic retroperitoneal hemorrhages were the most common and numerous – in 130 (64,67%) patients. The main sources of pelvic retroperitoneal hemorrhages were pelvic fractures with venous plexus lesions (type B, C, n=126) and urinary bladder injury (n=35). We used conservative treatment in pelvic venous hemorrhages (147 from 152 patients) to stop pelvic bleeding: early pelvic stabilization, patient position without active motions, hemostatic drugs. If conservative treatment was not effective in arterial bleeding (n=5), we used pelvic packing, vessel ligation, etc. Revision of pelvic bleeding was not performed. It was impossible to determine exactly the source of spreading (46,6%) retroperitoneal hemorrhage even by forensic-medical examination. Pelvic stabilization by device for external fixation performed at admission allowed to prevent massive intrapelvic hematomas and complications in patients with pelvic fractures (type B, C).

Conclusions: the particularities of posttraumatic retroperitoneal hemorrhage in pelvic fractures are their massive volume, spreading, predomination of venous bleeding (88%). Conservative treatment was effective in 96,7% of venous pelvic bleeding. Early pelvic stabilization prevents massive retroperitoneal hemorrhages and posttraumatic complications.

Keywords: retroperitoneal hemorrhage, pelvic fractures, early stabilization

TREATMENT OF THE DISTAL FEMUR OPEN FRACTURES



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The aim: Presenting the surgical treatment results in 10 patients with distal femur open fractures with analysis of management a case of septic complication.

Materials and methods: The analyze of surgical treatment results in 10 patients was performed. Gustillo-Andersen classification was used: type I – 1 case, type II – 4 cases, type IIIA – 5 cases, type IIIB – 2 cases (2 patients with bilateral fractures). In all patients the first stage consisted of: primar surgical debridment with applying skeletal traction through the tibial tuberosity with leg "in empty" - 6 cases; stabilization with external fixators- 4 cases; "limited" fixation of joint surface with screws and stabilization with external fixators- 2 cases. The final fixation was used after an adequate soft tissue condition was obtained, in a period of 8 to 25 days with an average of 14,3 days.

Results: In 9 of 10 patients after surgical debridement was primar wound healing .

In 1 patient with type IIIA fracture, which was not performed primar external fixation after final fixation complicated by osteitis of the femur.

After 2 debridements formed a fistula, which was eradicated at 4 months, with internal metal fixator removal and bone defect plasty with composite based on collagen and antibiotic when the fracture was in the stage of consolidation. The functional score (Neer) in medium at all group of patients is 74 points.

Conclusions: The surgical treatment of severe open fractures in 2 stages, with primar surgical debridement with stabilization by external fixators at first and functional stable internal fixation at second is a tactics to obtain optimal functional results and avoid complications.

Keywords: distal femur, open fracture, surgical debridement, osteosynthesis.

CURRENT CONCEPTS IN DISTAL FEMUR FRACTURES TREATMENT



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The aim: Presenting the methods of evaluation and surgical treatment of patients with distal femur fractures treated in Orthopedics and Traumatology Clinic "V. Bețșor" during 2010-2015 years.

Materials and methods: There were analyzed 120 clinical cases with 123 distal femur fractures (3 patients were with bilateral fractures); men - 58 (48.3%) and women - 62 (51.7%) aged between 17 and 90 years, (mean age 53,4 years). Trauma circumstances: traffic accident - 40 cases, habitual trauma - 71, precipitation – 7, industrial – 1, by firearm - 1. Fractures were classified as AO: type A1 – 13 cases, type A2 – 29 cases, type A3 – 39 cases, type B1 – 2 cases, type B2 – 1 case, type C1 – 7 cases, type C2 – 27 cases and type C3 – 5 cases. The definitive osteosynthesis was performed at the period of 0-52 days with

an average of 12,4 days. There were used surgical approaches: classical antero-lateral – 52, MIPO – 35, MIPPO – 1, TARPO – 16 and medial parapatelar (for retronail) – 19 cases. Fixators used: condylar buttress plate–24, blade–plate 95o – 11, angular stability plate – 65, locked intramedullary nail (retronail) – 18, DCS – 2, screws (for type B fractures) – 3.

Results: Consolidation occurred in 94% of cases in a period of from 4 to 9 months. There were 3 cases of deterioration of fixators, solved with osteoplastic re-osteosynthesis; 3 secondary displacements with further vicious consolidation, 4 pseudoarthrosis and 2 septic complications.

Conclusions: Individual approach of the distal femur fractures, respecting the AO principles, the right choice of implant and minimally invasive surgical techniques is a optimal tactics to obtain favorable functional results and avoid complications.

Keywords: distal femur, osteosynthesis, consolidation.

SURGICAL TREATMENT OF TIBIAL PILON FRACTURES



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Objective: The research of statistical and curative particularities of surgical treatment of tibial pilon fractures.

Material and methods: The scientific work is based on a retrospective and prospective study on a group of total 172 patients with tibial pilon fractures treated during the years 2013-2015 in Traumatological Departments of The Emergency Medicine Institute from Chisinau. The diagnosis was confirmed by clinical, radiological in all cases and MRI in 59 cases. The etiology of trauma in 103 cases were fall from height and in 44 cases - car collision. Open fractures was in 42 cases, GA type I – 21, GA type II – 18 and GA type III – 3 cases. Extra-articular fractures was 48 cases, intra-articular – 124 cases, RA type I – 29, RA type II – 54 and RA type III – 41 cases.

Results: The surgical treatment was the most indicated, in 125 cases, extrafocar osteosynthesis (Ilizarov) - 33, plate osteosynthesis – 38, screws/pins osteosynthesis – 24 cases, external fixation was used in 29 cases associated with high damage of soft tissue, which later were converted in stabile osteosynthesis. After surgery a part of the patients were evaluated at an interval of 12 to 24 months using. We obtained good results in 18 patients, satisfactory - 20, unsatisfactory - 4 patients.

Conclusions: The tibial pilon fractures prognosis in most cases is unpredictable because of intra-articular character with involve articular surface elevation, difficulty reducing and maintaining fragments and frequency of occurrence of various complications. Surgical treatment requires advanced experience of orthopaedic surgeon, and a very good preoperative planing with establish an appropriate time, surgical approach and method of fixation.

Keywords: tibial pilon, itra-articular fracture, surgical treatment.

EXPERIENCE IN TREATMENT OF PELVIC FRACTURES IN MULTIPLE AND ASSOCIATED INJURIES



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Materials and and methods: We present treatment results of 623 polytrauma patients with pelvic fractures. There were 411 (66,53%) males and 212 females (33,47%), mean age 37,59±1,001 years (p<0,05). The main cause of trauma was traffic road accident (64,37%), fall from height (25,32%), high energy impact (10,31%). All the patients were complex examined, pelvic fractures were detected according to M.Tile classification. Stabilizing pelvis osteosynthesis by device for external fixation was performed in 52 cases as an antishock measure. Early pelvis osteosynthesis was done in 172 patients for quick mobilization. Other patients underwent delayed osteosynthesis after 7 days, open reduction and combined osteosynthesis was performed in 12 cases.

Results: Pelvic fractures type B and C leveled to type A after osteosynthesis by external device. Patient hemodynamic was stabilized. Volume of transfusions decreased, on average, for one patient at 1,2 ± 0,2 l/day, blood products – at 0,68±0,2 l/day (p<0,05). Enlargement of the radiological shadow, the "blurring" of the iliac muscle contours, development of the intestinal paresis was not observed. All these signs proved the tanpmade effect of eraly pelvis osteosynthesis. Vertical mobilization of the patients with urinary bladder injuries led to normalization of the urine passage and its composition.

External fixation of the polyfocal and rotational unstable pelvic fractures allowed one-step and dosage correction of the pelvic ring and prevented developement of complications. Vertical displacement of the hemipelvis was eliminated by creating of the additional support point up to optimal correction of the bone fragments, and saving the patient mobility.

Conclusions: Elaborated surgical treatment of the pelvic injuries, management of the polytrauma patients resulted in

positive outcomes in 97,4%. Adequate surgical correction of the pelvis is possible almost in all the cases. The positive effect of pelvic stabilization by device for external fixation is especially expressed in the resuscitation period. Device for reposition and external fixation allows stable fixation of the bone fragments in different clinical situations, maintains movements in the hip joints and helps restoring the function of pelvic organs, cardiovascular and respiratory systems.

Keywords: pelvic fractures, surgical treatment, external device

SCAPULAR INJURIES



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Introduction: Traumatic injuries of the scapula are insufficiently elucidated in the national scientific literature. Balanced movements of the shoulder girdle and upper limb are damaged, thorax function suffers, and lung excursion is limited in these fractures.

Materials and methods: We present treatment results of 4 patients with posttraumatic winged scapula and 19 – with scapular fractures. Winged scapula was observed in males 20-26 years old, athletes, who lifted the load. The patients were admitted in 14-18 months after unsuccessful conservative treatment. They underwent surgical fixation of the scapula in 2 points: to the spinous process of Th3 and to the 5th rib by suture tape. We obtained positive results in all cases with recovering of the scapula and upper limb function.

Scapular fractures were determined in 19 polytrauma patients: 17 males and 2 females. There was longitudinal fracture of the scapula body (1), fracture of the neck with displacement (2), multiple injuries of the scapular (16). There was saggy shoulder – the head of the humerus went down with the injured glenoid fossa in patients with scapular neck fracture, Firstly scapular fractures were fixed by orthosis for shoulder joint in severe patients, in the early period of traumatic disease. The fractures were not operated urgently because it was impossible to fix the patient with unstable rib fractures for the posterior approach to the scapula. Indications for the surgical treatment were fractures of the neck and articular surface with displacement. ORIF was performed in 9 patients. Three patients with clavicle fractures underwent osteosynthesis of the clavicle by plate, reduction of the scapula was achieved without its additional fixation. Other patients wore orthosis for immobilization of the shoulder joint because multiple rib fractures didn't permit cast.

Results: Long-term results of surgical and conservative treatment were similar. All the patients were physically active, returned to their previous work. Limitation of flexion and abduction in the shoulder joint was minor; the strength of muscles was satisfactory.

Conclusions: Scapular injuries may lead to permanent limitation of motion in the shoulder joint. Correct management of these patients allows positive results.

Keywords: winged scapula, scapular fracture, surgical treatment

THORACIC CAGE STABILIZATION IN THE COMPLEX TREATMENT OF POLYTRAUMA PATIENTS



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Introduction: Thoracic injuries in polytrauma are dominated and cause up to 50% mortality. The main causes are: severity, quick progression of pathological processes with injured rib cage and hemopneumothorax and leading to lung ventilation disturbance.

Materials and methods: We present treatment outcomes of 136 patients with pelvic fractures, multiple and associated injuries and closed thoracic trauma aged 18-72 years. The main causes of trauma were traffic road accidents in 74,37% cases. Multiple rib fractures (n=114), fractures of the sternum (n=23), clavicle (n=19), scapula (n=19) and long bones (n=87) were associated with traumatic brain injury (n=120) and abdominal organ lesion (n=49). All patients were completely examined according to elaborated scheme.

Main group included 61 patient treated by early fracture stabilization of the upper limb, sternum and ribs. Indications for rib cage stabilization were dominated thoracic injuries, with paradoxical breathing associated with fractures of the pelvis and proximal femur. Control group included 75 patients treated by traditional methods for pleural complications: drainage and

puncture of the pleural cavity and with systematic X-ray control. The main aim was to maintain permeability of respiratory ways – sanation of the tracheobronchial tree with curative bronchoscopy, use of mucolytic and broncholytic drugs, aerosol inhalations and magnetotherapy.

Results of early stabilization of rib cage by fixation of multiple rib fractures, fractures of the sternum, scapula, and clavicle proved its effectiveness; in complex with physiotherapy it significantly decreased the period of hospitalization. The mean duration of mechanical ventilation was reduced, complication rate decreased by 20,8%.

Conclusions: Thoracic injuries in multiple and associated trauma are severe lesions that need complex examination and urgent treatment to prevent pleural complications, to reduce the period of hospitalization and to improve long-term results.

Keywords: thoracic injuries, multiple rib fractures, early stabilization, complex treatment

TIBIAL PLATEAU FRACTURES MANAGEMENT



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The aim: Presenting the methods of evaluation and management of patients with tibial plateau fractures treated in Orthopedics and Traumatology Clinic "V. Bețșor" during 2014-2015 years.

Materials and methods: There were analyzed 110 clinical cases with tibial plateau fractures: men – 46(42%) and women – 64(58 %), with mean age 52,4 years. Trauma circumstances: habitual trauma – 69 cases, traffic accident – 18, precipitation – 12, sport – 7, aggression – 4. Fractures were classified as Schatzker: type I – 14 cases, II – 28, III – 17, IV – 10, V – 28, VI – 13, including 107 close, 3 open (Gustillo-Andersen type I). All patients were examined by X-ray, 78 by CT. Management tactics applied: 68 patients- surgical treatment, 42 cases – orthopaedic. Surgical treatment consisted of close reduction – 8 cases (6 - percutaneous canulated screws, 2- Ilizarov apparatus), open reduction – 60 cases: 49- plate (15 with submeniscal approach), 11- 2 plates. It was performed autoosteoplasty in 12 cases (3-type II, 4-III, 2-V, 3-VI).

Results: Until the present 50% of patients were examined clinically, radiologically and evaluated according to Lysholm Knee Scoring Scale to a term of 3,6,12,24 months. Bone consolidation was achieved in a period of between 10 to 20 weeks. To 8 patients during the postoperative period appeared complications, which were depending on the complexity of fractures and accuracy of surgical treatment. Remote results were depending on the stability of osteosynthesis, precocity, rightness of functional reeducation and patient compliance.

Conclusions: Individual approach of tibial plateau fractures management, the right choice of implants and minimally invasive surgical techniques is an optimal tactics to obtain favorable functional results and avoid possible complications.

Keywords: tibial plateau, fracture, management

TREATMENT OPTIONS FOR DISPLACED FEMORAL NECK FRACTURES IN ELDERLY PATIENTS



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Objective

There are few studies known about the influence of different surgical procedures in patient mortality and postoperative outcome in these kinds of patients. In this study we compare the outcome of cannulated hip screws (CHS) with hemiarthroplasty (HA) for management of intra-capsular femoral neck fractures in elderly with severe systemic conditions.

Material. Methods.

We conducted a retrospective cohort study of all patients admitted to our trauma center with a femoral neck fracture between January 2009 and June 2011. Inclusion criteria are: 70 years or older, ASA 3 or higher, a displaced femoral neck fracture and treatment with either three cannulated hip screws or a cemented hemiprosthesis. The primary outcomes was mortality during follow up. Secondary outcomes were post-operative complications, re-operations rate and length of hospital stay. We tracked this using the Romanian personal registration system.

Results

Between the first of January 2010 and December 2012, underwent 326 patients a surgical procedure for an intra-capsular femoral neck fracture: 173 underwent hemiarthroplasty (HA), 11 underwent total hip replacement (THR), 96 underwent closed reduction and internal fixation with Canulated Hip Screws (CHS) and 46 underwent closed reduction and internal fixation with Dynamic Hip Screw (DHS), 74 patients met our inclusion criteria. The medical records retrieved 34-64 months

after surgery. There were significantly more implant related complications in CHS than HA group (31.6% vs. 9.1% respectively, $P=0.009$). Rate of serious general complications did not differ between two groups (21.1% vs 36.4% respectively, $P=0.27$).

Conclusions

We believe that a hemiarthroplasty is appropriate for treatment of displaced intra-capsular femoral neck fracture in elderly. The CHS is associated with more implant related complications than HA in treatment of a displaced femoral neck fracture in elderly patients with ASA 3 or 4.

Keywords: Intra-capsular femoral fracture, elderly, mortality, cannulated hip screws, hemiarthroplasty

SURGICAL TREATMENT OF DISTAL TIBIA FRACTURES WITH INTRA-MEDULLARY NAIL



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Introduction.

Fractures of the distal tibia in the adult result from a combination of axial compression and rotational forces.

Surgical treatment of extra-articular fractures of distal tibia is a controversial topic throughout the entire literature. The recent development of more distal locking options with IM nails and anatomically-contoured angle-stable plates have improved our ability to stabilise these fractures.

Material and methods.

This study included 27 patients admitted and treated for distal extra-articular tibial fractures (AO 43 A1-3) between Jan 2012 and May 2015 in the IInd Clinic of Orthopaedics and Traumatology. Ten patients sustained open fractures (two type I GA, four type II GA and four type IIIA GA). Nine patients also had distal peroneal or peroneal malleolus associated fractures and 18 had associated supra-malleolar fractures of the peroneus.

IM nailing was the treatment choice for all cases (with reaming in 14 cases) and for the associated peroneal fractures ORIF with plates and screws was performed.

Results.

From a total of 27 cases, 4 (14,8%) cases healed with a varum >5° deformity, 3 (11,1%) cases developed pseudarthrosis that necessitated further surgical treatment (angular stable plates and bone graft), 1 (3,7%) case had intraarticular nail migration and infection, 19 (70,4%) cases had a favourable evolution with good outcome.

All fracture healing complications appeared within the cases treated without medullary canal reaming and without associated distal peroneal fractures.

Conclusions.

Cases treated with ORIF for distal peroneal fractures had better results than those treated by conservative means. IM nailing can be extremely important in open fractures where it can provide excellent fixation of the fracture fragments and allows, if necessary, extensive debridement and reconstructive treatment for soft tissues without direct implant exposure. It was also noted that reamed nailing was biomechanically superior in terms of stability to the unreamed nails.

OSTEOSYNTHESIS FAILURE AFTER THE PEDICLE SUBTRACTION OSTEOTOMY FOR THE CORRECTION OF SAGITTAL SPINE IMBALANCE



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Purpose

Pedicle subtraction osteotomy (PSO) in the lumbar spine is indicated in the treatment of large sagittal deformities of the lumbar spine. Substantial complications associated with PSO's include pseudarthrosis and mechanical failure. The purpose of the present study was to assess the complications of this procedure and the causes of mechanical complications.

Methods

Fifteen patients aged between 38 and 79 years (mean age 63.8+/-12.82) were operated between June 2011 and September 2014 for sagittal imbalance by means of one-level PSO.

Preoperative and postoperative value of radiological spino-pelvic sagittal parameters were measured. Clinical and radiological evaluations were conducted preoperatively and postoperatively at 6 months and 1 year. Clinical evaluation included intra-

and postoperative complications.

Results

Mean pelvic incidence was $54.86 \pm 11.82^\circ$. Lumbar lordosis (LL) was measured to $12.26 \pm 18.48^\circ$ preoperatively and increased to $42.73 \pm 14.05^\circ$ postoperatively ($p < 0.05$).

Mean gain of lordosis after PSO at index level (fig. 2), was calculated to $28 \pm 11^\circ$ [$14-41^\circ$]. SVA decreased postoperatively from 93.46 ± 36.69 mm to 61.73 ± 38.68 mm ($p < 0.05$).

Several complications ($n = 8$), including 2 minor (one dural tear with no clinical consequences and one transient radicular deficit) and 6 major with reintervention were observed in our series.

Conclusions

The main cause of mechanical complications was insufficient sagittal correction. To limit the risk of mechanical complications and to achieve a good sagittal balance, PSO must be associated with additional SPO's or a second corrective surgery to obtain a solid anterior fusion.

DIFFICULTIES IN CLASSIFICATION OF MALLEOLAR FRACTURES



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Objective

Classification of malleolar fractures are a matter of debate. The Lauge Hansen and the AO-classification are defined as complicated, where the Weber-classification is too simplistic. In trimalleolar fracture is the role and the size of the posterior fragment an additional complicating factor.

Material. Methods.

Interobserver study: four observers (2 traumasurgeons, 2 radiologists) classified 100 X-rays to the AO-, the Lauge-Hansen- and the Danis-Weber classification. In case of a trimalleolar fracture they were asked to measure the size of the posterior fragment.

Results

Within the Weber classification, there is a lot of discussion whether the fracture is a proximal "Weber B" or a distal "Weber C". This problem also exists in the AO-classification. In addition, it is not possible to classify the isolated medial malleolus fracture. The biggest problem of the Lauge-Hansen classification is that anamnestic (and in particular radiological) the trauma-mechanism remains unclear. As a result, it is possible to classify identically fractures in different groups. Small posterior avulsion fragments prove difficult to determine on the initial X-ray. Overshadowing of the fibula is the avulsion of a very small fragment shows to be limiting factor. Fixation if posterior fragments is, in most literature, dependent on the size if the posterior fragments. Some authors advocate that not only size but most important, the congruency of tibiotalar articular surface should be leading in choice of treatment for anatomic restoration. In that case, assessment of size if the posterior fragment is less important where the detection of smaller dislocated posterior fragment is of much more value.

Conclusions

The ankle X-ray is in most cases a useful tool in detecting clinical relevant fractures of the posterior malleolus however preoperative CT evaluation might be a very useful addition both in pre-operative planning and detection from smaller dislocated posterior fragments.

Keywords: malleolar fracture, classification, ankle

GAMMA-NAIL NAIL BREAKAGE IN THE OSTEOSYNTHESIS OF TROCHANTERIC FEMORAL FRACTURES



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Objective

Mechanical breakage of the implant is a rare complication attributed to delayed fracture union or nonunion. This study presents a series of cases of breakage and secondary lag screw dislocation after cephalomedullary nailing.

Material. Methods.

In a retrospective study between 02/2005 and 12/2013 we analyzed all patients with trochanteric and subtrochanteric fracture who had been treated by cephalomedullary nailing. Fractures were classified according to AO/OTA classification. 13 patients with third generation Gamma nail failure were included. 7 patients were women, and 6 men with a mean age of

72 years (range 35-94).

Results

Important breakage occurred 6 month postoperatively (range 1-19 month). In 10 cases breakage was secondary to delayed or nonunion, which was thought to be mainly due to insufficient reduction of the fracture, wrong handling, incorrect drilling in the critical "red zone" (weak point of the nail around the insertion hole for the lag screw due to forces more than 1800 Newton), and in two cases due to loss of the lag screw because of missing set screw. In 1 case, breakage was apparent during elective metal removal following complete fracture healing. Short-term outcome was evaluated six months after operative revision using Harris Hip Score in 11 out of 13 patients showing a mean score of 84%. Complete radiological fracture healing has been found in 11 patients available for follow-up within 6 month after revision surgery.

Conclusions

Even though breakage of cephalomedullary nail osteosynthesis of trochanteric and sub trochanteric fracture is a severe complication, the result of our study demonstrate that revision surgery is warranted and provides good clinical and radiological short-term results.

Keywords: trochanteric fractures, gamma nail, breakage, complication

CLOSED K-WIRE METHOD OF PROXIMAL HUMERUS FRACTURES OSTEOSYNTHESIS



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Aim of the study: evaluation of the results of the surgical treatment by closed reduction, fixation with K-wires of fractures of proximal humerus in patients treated in IEM from Chisinau.

Material and methods: during the period 2015-2016, 183 patients were examined and treated for fractures of the proximal humerus of different complexity levels. Out of the total number of patients, 50 (27,3%) patients underwent surgical treatment. Out of the total number of patients treated surgically, 13 patients were operated through the minimally invasive method with indirect reduction of the fracture and osteosynthesis with K-wires in closed fracture focus. The rest of the patients treated surgically 37 (20,2%) patients, underwent the open reduction, internal fixation through other methods described in specialty literature (ORIF).

Results: the study group consisted of 13 (7,1%) patients. The average age was 59,53 years. Patients treated using minimally invasive method, the sex ratio being: women – 8 (61,5%) and men – 5 (38,5%) persons. Immediate results were appreciated according to postoperative radiological appearance, in 100% cases all the fractures united in axial alignment, it was appreciated as positive results. Follow-up results valued according to radiological appearance, full range motion of the traumatized shoulder joint in comparison with the contralateral (healthy) arm, and the quality of life: excellent and good in 10 (76,9%) cases, satisfactory – 2 (15,4%) cases and unsatisfactory – 1 (7,7%) case. It was determined the following complication – the inflammation around the K-wires in 3 cases.

Conclusions: Osteosynthesis with K-wires in closed outbreak constitutes a favorable method for the surgical treatment of proximal humeral fractures. This method is characterized by reduced traumatologic trauma, minimal hemorrhage and minor risk of perioperative complications.

Keywords: proximal humerus, K-wire osteosynthesis, minimally invasive.

FEMORAL ASEPTIC PSEUDARTHROSIS WITH IMPLANT FAILURE – CASES PRESENTATION



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Objective

Management of the femoral implant failure is one the hardest situation faced in traumatology. Our study try to understand the causes which lead to pseudarthrosis after primary osteosynthesis of femoral fracture with breakage of the implant and to establish a therapeutical protocol which can be applied to these cases.

Material. Methods.

We performed a retrospective study between 2011 and 2014, analyzing all patients with femur fractures treated in our hospital or in other hospitals but which came in our Clinic with pseudarthrosis and implant failure or breakage.

Results

A total of cases were introduced in our study: 2 trochanteric fractures, 3 trochantero-diaphyseal fractures, 2 diaphyseal fractures, 1 distal periprosthetic fracture, 1 supracondylar fracture. Every case had own particularities and the therapeutical stages were: choice of surgical approach, method of implant ablation with minimal bone loss, more stable osteosynthesis, bone graft. The time of the operation should be as short as possible to minimize infection risk.

Conclusions

Pseudarthrosis of the femoral fracture with breakage of the implant is a tough situation for any surgeon. Understanding the causes which produced the implant failure and establishing a therapeutical strategy to correct them are the goal of the treatment.

Keywords: femoral fracture, implant failure, breakage, pseudarthrosis

OSTEOSYNTHESIS METHODS IN POLYTRAUMA WITH MUSCULOSKELETAL SYSTEM INJURIES



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Purpose: to analyze osteosynthesis methods in polytrauma and their performing time.

Material and methods: were analyzed methods and early results of surgical treatment in polytrauma patients treated in IEM, in period 2011-2015. Polytrauma were classified according to 4 regions in: cvadriregional – 2(2,6%), triregional – 19(24,7%), biregional – 56(72,7%). The study group was – 77 patients surgically treated, including 29(37,7%) women and 48(62,7%) men. Average age was 37.5 years, predominantly affecting working-age population (21-60 years) – 68 (88.3%), with highest incidence in group 18-30 years – 31(40.2%). Musculoskeletal lesions were: 140 fractures, multiple – 53(68.8%) and single – 24(31.2%); open fractures – 13(9.3%) cases. Fractures in upper limb and scapular-humeral belt were 56(40%), pelvis – 21(15%), lower limb – 57(40.7%) and spine – 6(4.3%) cases.

Results: immediate surgery – 13(16,9%) cases of open fractures, chosen osteosynthesis material being external fixator. Delayed surgical treatment – 64(83,1%) cases, performed at 1-19 days after trauma, with an average of 6.5 days. Osteosynthesis methods consisted of: intramedullary nail – 29(37,6%), DCS – 2(2,6%), plate and screws – 26(33,7%), modular plate – 7(9,1%), angular stable plate – 1(1,3%), transkelelel traction – 5(6,5%), PFN – 2(2,6%), supporting plate – 4(5,2%), K-wire – 13(16,8%), screws – 4(5,2%). The immediate results were appreciated by X-ray aspect, being satisfactory in all cases.

Conclusions: Surgical treatment of MS injuries is divided into serial operations, respecting the order of priority of injuries depending on their vital risk (Damage Control Orthopaedics) and simultaneous surgeries performed along with deshock supported therapy (Early Total Care), which tend to settle early and definitively maximum of lesions in polytrauma. Duration and volume of surgical interventions for skeletal injuries in polytrauma should be chosen with consideration of injuries severity, patient's state and traumatic disease period.

Keywords: osteosynthesis, polytrauma, DCO, ETC.

TREATMENT OF DIAPHYSEAL FRACTURES OF THE HUMERUS



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Introduction: Humeral shaft fractures represent approximately 3% of all fractures and 20% of the humeral fractures. Treatment modalities have evolved greatly, however, fundamental management principles have remained the same over time. Currently the surgical techniques and treatment outcomes improved a lot. Despite numerous treatment techniques, plate osteosynthesis remains the gold standard for fixation of diaphyseal fractures of the humerus. Locked intramedullary rods have become very popular in recent decades due to the minimally invasive treatment trends. Thus today there are still controversies in the treatment tactics of diaphyseal fractures of the humerus.

Objectives: Evaluation of treatment of patients with diaphyseal fractures of the humerus.

Materials and methods: The study was conducted on a sample of 225 patients, between 01.01.2013-31.12.2015 in the Orthopaedics and Traumatology Clinic of IMSP IMU.

Results: Of the 225 patients, surgery was performed on 68.4% of cases and 31.5% – conservative treatment. The surgical treatment used the following methods of osteosynthesis: ORIF the anterior-lateral approach – 39.61%; ORIF through posterior approach – 35.06%; Closed intramedullary nailing – 22.72%; Extrafocal osteosynthesis with rod type apparatus – 2.59%.

Preoperative radial nerve injury -11.82%. One patient had postoperative radial nerve injury. Radial nerve revision was performed 3 months after osteosynthesis. Following conservative treatment: The infection of soft tissue - 1.40%; nonunion - 4.22% cases. After open reduction and plate osteosynthesis: operative wound infection - 3.47%; nonunions - 2.60%.

Conclusion: Conservative treatment so far is the method of choice of diaphyseal fractures of the humerus, but does not provide satisfactory reduction of bone fragments and no ability to prevent secondary movements. The contemporary "Surgicalization" trends have been obtaining satisfactory results in the treatment. The success rate depends not only on the tactics that have been chosen, but also of the strict compliance with indications and contraindications to treatment methods.

Keywords: humerus, fracture, treatment.

METHODS OF SURGICAL TREATMENT OF TROCHANTERIC FRACTURES



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Aim of the study. Evaluation of the surgical treatment of trochanteric fractures obtained during 2013-2015.

Materials and methods. During 2013-2015, 119 patients with trochanteric fractures (Evans classification) were treated in the Department of Orthopaedia from the Institute of Emergency Medicine and the Hospital from Balti. The study group consisted of: 79 females (66.4%), 40 males (33.6%). The mean age was 75.96 years. Out of the total number of patients, 101 patients (84.9%) underwent surgical treatment. The following fixation was applied: DHS – in 35 cases, 95' blade-plate – in 17 cases, 135' blade-plate – in 3 cases, DCS – in 5 cases, Gamma nails – in 14 cases, PFN – in 17 cases. Thirty-one patients (30.7%) were treated by minimally invasive methods.

Results. Immediate results were appreciated by X-ray, distal results were appreciated using the Harris Hip Score. Division of the results was: good in 46 cases, satisfactory in 10 cases, non-satisfactory in 2 cases. The following complications were encountered: joint stiffness in 2 cases, slow consolidation in 3 cases, pseudoarthrosis in 2 cases. Non-satisfactory results were found in patients treated with plates. Mean value of the Harris Score was 86%.

Conclusions. The rate of trochanteric fractures is higher in males than in females. Osteosynthesis with PFN and Gamma plates are reasonable in treating trochanteric fractures. Intramedullary nails are characterized by minimal trauma, minimal hemorrhage and minor risk of perioperative complications. Fixation methods with different dynamic fixators show good results.

Keywords: trochanteric fractures, osteosynthesis

THE RESULTS OF LOCKED INTRAMEDULAR NAILING OSTEOSYNTHESIS IN LONG TUBULAR BONE FRACTURES



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The aim of this study: were the analysis of the results in healing of diaphyseal long tubular fractures by osteosynthesis with intramedullary locked nails in patients treated in IEM.

Materials and methods: during the period of 2010-2015 years in the department of Orthopaedia of IEM there were examined and treated 314 patients with diaphyseal long tubular fractures (329 fractures on different levels) treated by intramedullary osteosynthesis using locked intramedullary nails. The group was consist of 203 (64,665%) male and 111 (35,35%) female patients. Average age was 40,4 years old (18-89 years old). The distribution by fractured segments is: humerus – 37 (11,3%), femur – 159 (48,3%), tibia – 133 (40,4%) patients. In 20 (12,6%) cases the femur was treated by retrograde osteosynthesis and in 130 (81,8%) – anterograde and in 9 (5,6%) cases – by combinant method Betisor-Darciuc. In 131 (98,5%) cases the tibial shaft fractures were fixated by anterograde and in 2 (1,5%) cases – combinant methods. All the humeral shaft fractures included in the study were fixated anterograde.

Results: according to functional scores LEFS and DASH the results are distributed as excellent in 294 cases (89,36%), good in 33 cases (10,03%), unsatisfactory in 2 cases (0,61%). As the complications there were inregistered: instability of proximal femoral screw – 3 cases, damage of femoral nail -1case, damage of tibial nail – 1 case, instability of humeral fixator – 1 case.

Conclusions: intramedular nailing osteosynthesis represents a favorable method for healing the long tubular bone fractures. This method represents reduced surgical traumatism, less hemorrhage, early mobilization and low risk of perioperative complications.

Keywords: diaphyseal fractures, long tubular bones, intramedular nailing

SURGICAL TREATMENT OF FRACTURES IN REGIONAL HOSPITAL



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Study objectives: The analysis of the results of fractures surgical treatment in the Orthopedics and Traumatology Department of the Regional Hospital.

Methods and Materials: 1689 patients were treated in the Orthopaedics and Traumatology Department of the Regional Hospital during years 2011-2015. The surgical treatment ratio during the period covered by the study increased from 9.7% to 19.2%, as per Hospital provisioning with implants, with an average ratio of 16.3%. The methods of osteosynthesis applied in closed diaphyseal fractures: clavicle with intramedullary nail – 25 (9.5%), arm with plate – 11 (4.2%), forearm – 12 (4.6%) centromedular fixation and 22 (8.4%) plate fixation, femur – centromedular 10 (4%) and plate fixation 2 (0.5%); leg with plate fixation – 7 (2.7%), Ilizarov device – 12 (4.6%); malleolus with plate fixation – 44 (16.7%) nail fixation – 21 (7.9%); leg and hand nail fixation – 81 (30.7%). In open fractures we preferred osteosynthesis with Ilizarov device – 15 (5.8%). Surgical interventions were applied in 2-7 days after trauma.

Results: Slow consolidation in diaphyseal fractures at 6 patients (2.2%), pseudarthrosis at 2 patients (0.7%). Septic complications were observed in closed fractures in 2 cases (0.7%) (soft tissues inflammation). Leg open fractures had complications in 6 patients – soft tissues necrosis. These fractures were treated with a tegumentary plasty. Osteitis in 2 patients.

Conclusion: A stable osteosynthesis of diaphyseal fractures was obtained by fixation with plates and extrafocal fixation with Ilizarov device. Short term and long term results obtained were classified as good.

Keywords: Osteosynthesis, Diaphyseal fractures.

SELECTIVE ARTHRODESIS IN WRIST INSTABILITIES: INDICATIONS AND SURGICAL TECHNIQUES



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The causes of deforming arthritis of the hand are ligament injuries associated with subluxations and luxations, fractures of the carpal bones, malunions, and osteoarticular diseases as Kienbock disease. There are many surgical interventions to resolve these problems (D. Green)

Materials and methods

Our experience is based on the treatment of 134 patients with deforming osteoarthritis of the wrist who underwent various selective arthrodesis. The average duration of disease was 3 years. Kienbock disease was diagnosed in 41 patients, pseudoarthrosis of the scaphoid complicated by deforming osteoarthritis - in 68 cases, rotational subluxation of the scaphoid - in 9 cases, trapezium-trapezoid-scaphoid osteoarthritis - in 4 patients and malunion of the radius fracture - in 4 cases.

Results and discussions

Nowadays deforming arthritis occurred in the wrist more often requires surgical treatment. Arthrodesis directed to obtain an ankylosis of the carpal bones by losing the amplitude of movements allows to achieve a stable joint, without pain and to restore gripping power.

In 68 patients with scaphoid pseudoarthrosis complicated with deforming osteoarthritis, arthrodesis of "four carpal bones with scaphoidectomy" in 49 cases, total wrist arthrodesis in 7 cases, scaphocapitate arthrodesis in 3 cases, removing the first row of carpal bones in 3 cases, scaphoidectomy in 4 cases, radial-scaphoid arthrodesis - in 1 case, and in other scapho-trapezium-trapezoid arthrodesis.

In 41 patients with Kienbock disease, Graner operation was performed in 16 cases, arthrodesis of "three carpal bones" in 10 cases, capitate-scaphoid arthrodesis - in 8 cases, radial-semilunar - in 4 cases, radial-scaphoid arthrodesis - in 1 case, removing the first row of carpal bones - in 2 cases.

Arthrodesis of "three carpal bones" was performed in 4 cases of deforming arthritis of the scapho-trapezium-trapezoid joint. Triple scaphoid arthrodesis, arthrodesis of "three carpal bones" was done successfully on 9 patients with rotational subluxation of the scaphoid.

Total wrist arthrodesis was performed in 4 cases of the intraarticular radial fracture malunion.

Long-term results were followed up in 46 patients: good (18), satisfactory (23). Unsatisfactory outcomes were in 5 cases because of absence of the ankylosis and presence of the pain.

Conclusion:

Selective wrist arthrodesis is indicated in deforming arthritis grade II or III of diverse etiology

Keywords: pseudoarthrosis of the scaphoid, Kienbock disease, selective arthrodesis

RESULTS OF THALAMIC CALCANEAL FRACTURE TREATMENT



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The aim: Analyzing the results of thalamic calcaneus fracture treatment in dependence of type and treatment method.

Materials and methods: There were analyzed 198 clinical cases of calcaneal fractures treated in the clinic "V. Bețîșor" during the years 2014-2016. Patients were divided into 2 groups - I (65 patients - 33%) treated surgically (open reduction and plate and / or screws osteosynthesis, capsulo-ligamentotaxis in the Ilizarov apparatus), II (133 patients-67%) treated conservatively. Men accounted for 81% (160) and women 19% (38). The average age was 45 years, with limits between 20 and 78 years. According to the values Böhler angle fractures were of grade II (101 cases) - 51%, grade I (60) - 30% and grade III (37) - 19%. Average length of stay was 13 days for patients treated surgically, and 7 days in patients treated conservatively.

Results: Of the 198 patients were reexamined clinical and radiological and evaluated according to AOFAS Ankle-Hindfoot score Scale at 1-2 years from trauma 22 patients, of which 7 were performed surgical treatment, and 15 were treated conservatively. The results after surgical treatment (7): excellent (90-100 p) - 1 patient, good (72-89 p) - 4 patients, acceptable (41 - 71p) - 2 patients, bad (1-40 p) - 0, after orthopedic treatment (15): excellent - 1 patient, good - 6 patients, 6 patients acceptable, bad - 2 patients.

Conclusions:

1. For the specifying the optimal treatment strategy is necessary a classification that could clearly definite the type of fracture.
2. Intra-articular fractures (thalamic) frequently require surgical tactics of treatment, reducing the articular surfaces ideal and stable fixation of the fragments.
3. The dominant principle in the treatment of these fractures is to restore the altered biomechanics of the foot.

Keywords: thalamic calcaneal fracture, treatment

INTRA FOCAL OSTEOSYNTHESIS FOR DISTAL RADIAL FRACTURES IN EMERGENCY – KAPANDJI METHOD



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Aim: to present the results of surgical treatment using Kapandji method in emergency.

Material and methods: were analyzed the results of surgical treatment in patients with distal radius fractures treated in IEM during 2013-2015. Fractures were classified using Kapandji A. (1988) classification. Emergency surgical treatment was applied in 106 (50.23%) cases, of which 85 (80.18%) was performed Kapandji method. Follow-up results were assessed according W. Gartland and Werley L. score (2000). The study group consisted of 85 patients, of whom women - 52 (61.17%), men - 33 (38.83%). The mean age was 41 years.

Results: according A. Kapandji classification in the study group were: type I - 2 cases, type II - 33 cases, type III - 3 cases, type IV - 13 cases, type V - 2 cases, type VI - 1 case, type VII - 1 case, type VIII - 9 cases, type IX - 15 cases, type X - 6 cases. K-wire ablation was performed at 35 days - 15 (17.6%) cases for I, II, IV types, at 40 days - 52 (61.2%) cases for II, V, VI types, at 45 days - 14 (16.5%) cases for III, VII, VIII, IX types and at 50 days - 4 (4.7%) cases for IX, X types. Follow-up results, according W. Gartland and L. Werley score, are positive in 84 (98.8%) cases of 85 patients. Excellent results (0-2 points) were 13 (15.3%) cases, good (3-8 points) - 41 (47.1%) cases, satisfactory (9-20 points) - 31 (36.5%) cases.

Conclusions:

Intrafocal osteosynthesis with K-wire – Kapandji method constitutes a minimally invasive procedure favorable for treatment of distal radius fractures.

The method is characterized by minimal intraoperative bleeding, low risk of postoperative complications and a good function and recovery.

Keywords: radius, osteosynthesis, Kapandji, emergency

ORTOPEDIE ȘI TRAUMATOLOGIE PEDIATRICĂ

ORTHOPAEDIC-SURGICAL TREATMENT OF CHILDREN WITH FUNNEL DEFORMITY OF THE CHEST AND SCOLIOSIS



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We analyze the treatment of 19 patients aged 5 to 17 years with funnel chest and scoliosis. Combination of the spine and chest severe pathology is specific for the children with system hereditary diseases and seems to have a single root. The combination of the spine and chest deformity mutually aggravates and complicates their surgical correction. We think that, when treating the children with scoliosis and FDC, it is preferable on the first stage to intervene on the spine and, whereas in cases of obvious decrease of the external respiration function parameters as well as in the children under pubertal age and with a relatively light spinal deformity, to perform correction of the chest deformity.

Keywords: funnel deformity, scoliosis, children

VENTRAL AND DORSAL SPINAL INSTRUMENTATION METHODS FOR SCOLIOSIS TREATMENT



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Purpose

The aim of this study is to analyze the types of scoliosis, the main implants used to treat them and the results obtained after surgery.

Material and methods

The study group includes 266 patients with kypho-scoliosis deviation that required surgery and spinal implants. From this group, 187 had adolescent idiopathic scoliosis (AIS) and 79 had early onset scoliosis (EOS). The AIS group had a Cobb angle between 45 and 160 degree. The spinal instrumentation was either ventral, dorsal or both ventral and dorsal. The methods chosen were customized for each case.

The spinal instrumentation used for EOS had ensured and maintained the spinal axial correction. In case of thoracic insufficiency syndrome it was used a device that maintains the spinal axial correction and ensures the expansion of the thoracic cavity.

Results

In patients early diagnosed with a Cobb angle between 50 and 60 degrees, with a bending angle between 24 and 40 degrees, the posterior instrumentation allowed the axial recovery of the spine with its physiological curvature. The postoperative Cobb angle was between 2 and 10 degrees.

For patients with a Cobb angle between 60 and 90 degrees, with a bending Cobb angle greater than 40 degrees and with the presence of structural changes in the short arch of deviation, the postoperative Cobb angle was between 10 and 40 degrees.

For patients with a Cobb angle greater than 90 degrees or those with an „U” shaped scoliosis, the correction was insignificant, 20-30 degrees. In this cases the instrumentation was minimal and the aim was to stabilize the spine.

The recorded complications were: 3 cases with spinal implant deterioration, 3 cases with transient paresis, 5 cases that required proximal or distal extension of the spinal instrumentation, 6 cases of broken screws, 15 cases of infection and 2 cases of death.

Conclusion

For AIS patients, the best results are obtained when the instrumentation is done with minimal invasion expansion devices and instrumentation models with minimal implants.

For EOS, the best results are obtained using guided growth rods or devices that ensures both the axial spinal corection and the thoracic cavity expansion.

Keywords

Scoliosis, spinal instrumentation, spinal instrumentation model, guided growth rods, thoracic expansion devices.

DISTAL FOREARM FRACTURES AT CHILDREN



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Summary

The presentation elucidates the topicality, statistics, the tactics of treatment of distal forearm fractures at children.

A high frequency of fractures, difficulties in choosing the treatment strategy, issues of recovery and possible complications (premature closure of the growth plate, posttraumatic deformity such as Madelung, joint stiffness etc.) make the distal forearm fractures at children a current topic which deserves attention.

At S.C.M.C "V. Ignatenco" was made a statistics over a period of two years on a group of 488 children. From total number of traumatism, the ones of hands occupy ~ 52%. From hands fractures they constitute 38,92 %. The average age of children is 11,2 years, more frequently at boys ~ 70%. Up to 10 years metaphyseal fractures prevail, but at 12-15 year children-fractures at the growth plate. In 32% of cases both bones were fractured.

There were 5 cases of open fractures 1-st degree after G-A and 3 cases of Volkmann syndrome all resolved without fasciotomies. The peak of the traumatism is from June to August.

The diagnosis doesn't display great difficulties. An important value has the conservative treatment with osteoclasis if needed. An absolutely necessary indication for a open reposition at children are fractures with neuro-vascular disorders, advanced degree open fractures, the failure of closed reposition.

In our clinic the surgical treatment prevails, in particular closed reposition and osteosynthesis with wires under general anesthesia and are not used specific grown-up patient methods of osteosynthesis. We are guided by the principle that any angled displacement should be reduced. As a rule, when both bones of a distal forearm are fractured, the fixation with wires to the radial bone is performed. In case of a remaining displacement at the distal ulna, this doesn't create functional and recovery problems, it can just remain a cosmetic defect, which can be well reshaped in the long run. At the next stage, under local anesthesia, wires are removed, their ends are left above the skin, but further care and aseptic dressings are needed. The subsequent results of up to 2 years are rated as satisfactory and good, but they require a continuous assessment.

The basic objectives of the treatment are to restore bone alignment and clinical appearance, minimum soft tissue adjacent damage, preventing complications, pain relief, restore a functional forearm rotation, patient satisfaction and a good result afterwards.

TREATMENT OF CONGENITAL PSEUDARTHROSIS OF TIBIA USING AXIAL BONE GRAFT ON ELASTIC SPLINT, RH-BMP, COMPACTED WITH CABLES AND RECONSTRUCTIVE PLATES



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Introduction: given the recalcitrant behaviour of pseudarthrosis in congenital pseudarthrosis of tibia (CPT) there is no ideal solution to treat such challenging deformities. Reconsideration of already known principles using modern technology may generate new treatment methods.

Material and methods: the present paper presents the preliminary results of an original reconstruction procedure described by Prof. Dr. Gh. Burnei to treat large bone defects in paediatric orthopaedics. A case series study, the surgical technique, complications and illustrative cases are presented.

Results: 4 cases of 18 patients having CPT, surgically treated between 1997 and 2012, were operated using this technique. The principles of the method is to create an optimal osteoconductive and osteoinductive environment using bone autograft, bone allograft and bone graft substitutes and to provide a good stabilisation of the bones. The follow-up period of the study group ranged from 2 to 17 years. Three of the 4 patients are able to ambulate.

Conclusion: we believe that the present technique could be a reliable alternative to other procedures, especially in cases of repeated failures.

Keywords: bone graft; congenital pseudarthrosis of tibia; large bone defect; circumferential compression

COXA VARA AND VALGA CORRECTION ON TELESCOPIC NAILS IN OSTEOGENESIS IMPERFECTA



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Background: Varus or valgus deviations of the femoral neck in Osteogenesis Imperfecta had been an ignored chapter because classic correction procedures were applied in medical practice with unsatisfying results. Until the use of telescopic rods, coronal deviations remained unsolved and the distal configuration of the proximal femoral extremity remained uncorrected or partially corrected which required extensive use of wheel chair or bed immobilization of the patient. The concomitant correction of complex deformities, coxa vara/valga and femoral integrated configuration, has been a progress which allowed patients to walk with or without support.

Purpose: The purpose of this study is to present the Burnei's technique, a therapeutic alternative in deformity corrections of the varus or valgus hip in children with Osteogenesis Imperfecta.

Material and methods: The paper is a retrospective study performed in a single center which analyses Burnei's technique and other procedures described in literature.

The content of the paper is based on a 12 years experience, on a series of 51 patients with Osteogenesis Imperfecta out of which 10 patients (13 hips) presented frontal plane deviations of the femoral neck.

Results: All patients with Osteogenesis Imperfecta which presented coxa vara or valga were submitted to investigations with the purpose to assess the possibility of extending the surgical intervention to the distal segment of the lower limb, to establish the association of severe deformities of the proximal extremity of the femur and the necessity of postoperative intensive care. Burnei's technique: The operation was first performed in 2002. A subtrochanteric osteotomy is made in an oblique cut, from the internal side to the external side and from proximal to distal for coxa vara, or using a cuneiform resection associated with muscular disinsertions. Only telescopic rods are used for osteosynthesis.

Conclusions: Burnei's technique is simple, it corrects concomitant with Sofield-Millar the varus and valgus deviations. Even though only a telescopic rod is used, no stress fractures were seen postoperative, deviation recurrence or assembly loss.

Keywords: Osteogenesis imperfecta, coxa vara, coxa valga, only rod correction, Burnei's technique.

OPEN OSTEOSYNTHESIS IN DIAPHYSEAL FRACTURES IN CHILDREN WITH POLYTRAUMA



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BACKGROUND: The objective of the study was to appreciate the combinations of diaphyseal fractures in children, surgical methods of treatment and their results.

METHODS: In a Level III trauma center we reviewed 13790 patients. Emergency trauma injuries were 33.9% (4687 children). 178 children were treated with multiple injury, which constitutes 3.7% of all children hospitalized with urgent injuries, which were performed 217 interventions.

RESULTS: Diaphyseal fractures in children with polytrauma in different combinations was detected in 64 children (35,9%), they were carried out 86 surgery. More commonly diaphyseal fractures were recorded combined and associated in next component humerus-humerus – 3 children (6 interventions), humerus-forearm – 10 children (12 interventions), humerus-lower thigh – 1 child, humerus-femur – 5 children (4 interventions), forearm-forearm – 6 children (8 interventions), forearm-leg – 4 children (5 interventions), femur-femur – 6 children (12 interventions), femur-femur-leg – 5 children (12 interventions), femur-leg-forearm – 2 children (2 interventions), femur-leg – 3 children (4 interventions), femur-wounds-brain trauma – 16 children (12 osteosynthesis), leg-leg – 2 children (6 interventions), leg-brain trauma – 1 case. It was need the humeral fixation in 13 cases, 19 cases of forearm, the femur osteosynthesis 39 cases and open fractures leg 15 cases. The open fixation of humerus fractures was the fixing with three brooches clasped 8 children, with screws – 2 children and 3 cases performed by fixing metal plate and screws. To 2 children was applied external fixation device as immobilisation. The open osteosynthesis in forearm fractures was performed centro-medullary with brooches Ilizarov in 12 cases and in 7 cases performed additional cortical fixation with brooches Kirşner. Femoral intramedullary osteosynthesis with nail metal were subjected 23 children, brooches added to 5 children and 6 cases with additional fixation- screw and wire in 5 cases osteosynthesis plate and screws in leg fractures. Osteosynthesis of leg fractures finished with Ilizarov device application

to 3 children, and Gofman device in 4 children and to 6 children with pins and screws, metal plate and screws 2 children. Complications were not found.

Conclusions: Osteosynthesis of diaphyseal fractures in multiple injury requires combining materials from internal and external fixation with minimal trauma, lasting attachment, so will be improved the life quality in patients with politrauma.

Keywords: open osteosynthesis, politrauma, children.

EXTERNAL OSTEOSYNTHESIS IN COMBINATION WITH THE USAGE OF THE ARTIFICIAL COMPOSITE BIODEGRADED IMPLANT AT TREATMENT OF PSEUDOARTHROSES AND PATHOLOGICAL FRACTURES AT CHILDREN



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Work's goal: rising of efficiency of children's treatment with innocent osteal lesions of a locomotorium and the acquired nearthrosis.

Material and methods. In Clinic of Vertebrology, Orthopedics and Traumatology of the "N.Gheorghiu" Scientifically-Practical Center of Children's Surgery 39 children, aged between 1,8 and 17 years, with posttraumatic pseudoarthrosis and pathological fractures were operated. The method of treatment consisted in using of an osteosynthesis in the form of applying external fixation devices in combination with intra focal introduction of the biodegraded implant. Biodegraded implant containing 70 - 80% of the salt component in the form of hydroxyapatite crystals with nanoscale (43-45 nm), the rest - the biopolymer (collagen), the composite has a porosity of 70% to ensure the rapid lysis of cells in the body. Material was introduced into the defect as an injection and open way. After applying of the device of external fixation, intra focal endermic puncture by filling of a cavity with material in combinations with an antibiotic for 70% was carried out to patients with pathological fractures against the background of dystrophic osteal cysts-11, fibrous dysplasia-9, acquired nearthrosis: posttraumatic-7 and osteomyelitis-6 consequences. The volume of filled bone's defect varied from 4cm³ to 200cm³. Open surgical intervention with excising of tumor to a healthy tissue and filling of the formed defect with plates with an antibiotic was carried out to 6 patients with pathological fracture against an osteoblastoclastoma, after applying of the device of external fixation.

Results. At all patients after 1 year there came full reorganization of the pathological center.

Conclusion.

1. Injection introduction of a composite allows providing an adnation of osteal fragments without operation in case of the slowed-down consolidation of fracture or nearthrosis.
2. Biodegraded composite materials have essential advantages in comparison with an allobone (ability to stimulate reparative processes and to be utilized by the organism, development primary micro vascular canal).
3. Composite is capable to provide an angiogenesis in its introduction zone and the accelerated ossification in the field of defect.

Keywords: an osteosynthesis, children, a pseudoarthrosis, the biodegraded implant.

OSTEOSYNTHESIS IN INTRAARTICULAR FRACTURES IN CHILDREN



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Objective of study. Intraarticular fractures in children are the most complicated fractures, but failures in diagnosis, treatment tactics and technique of these fractures lead to unsatisfactory results, occurrence of post-traumatic deformities, disorders of function and growth.

Material and methods. Over 50 years we have operated approximately 2,000 children with intraarticular fractures, aged between 10 months and 18 years. Over 95% of those operated had complicated elbow fractures and follow-up consequences. The surgical method included: an appropriate approach for perfect adaptation of fragments without muscle and tendon sections, without osteotomies; restoration of traumatized muscles; perfect reposition of fragments; relatively stable and fine

osteosynthesis with 3 Kirschner pins, and external plaster cast immobilization. After immobilization and removal of pins, the rehabilitation treatment was performed through physical therapy with independent forceless and painless movements. **Results.** Treatment outcomes depend on the duration after trauma, the quality of anatomical adaptation of fragments, protection of periarticular tissues, fine fixation of fragments with pins, prevention of hematomas and bone consolidations. The compliance with all the requirements of surgical treatment allowed to obtain good results in over 96% of operated children.

Discussions. Intraarticular fractures in children, regardless of their age and degree of fracture displacement, require surgical treatment in specialized clinics, conducted by highly qualified specialists. Pseudoarthrosis in intraarticular fractures develops after orthopedic treatment or poorly performed surgical treatment. Fine osteosynthesis with Kirschner pins ensures the necessary stability. Osteosynthesis with plates and bolts is inadmissible, while olecranon osteotomy is a major error. Any postoperative varus deformity should be considered as an unsatisfactory result. This deformation may trigger secondary distal humeral epiphysiolysis with irreversible disability. For this reason, we disagree with the views of some authors who consider varus deformity in children up to 20 degrees a good result and varus deformity up to 40 degrees is considered a satisfactory result, which, in fact is erroneous for child development.

Conclusion. In intraarticular fractures in children it is necessary to appreciate in detail the intricate anatomical and topographical changes. The surgical treatment of complicated fractures has to be performed in specialized clinics by highly qualified doctors in the field.

Keywords: intraarticular fractures, osteosynthesis.

OSTEOSYNTHESIS IN MULTIPLE FRACTURES IN CHILDREN



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Objective of study. To estimate the surgical treatment tactics and technique in multiple fractures in children in order to improve results.

Material and methods. Over the past 25 years 131 children with multiple fractures of long bones received specialized treatment in the pediatric orthopedic clinic. There was prevalence of male patients (59.5%) aged over 10 years (65.6%). Of the total number of children, 294 fractures were assessed. Of them, 81 femoral fractures, 66 forearm fractures, 65 leg fractures, 60 arm fractures and others. Fractures due to road accidents prevailed (over 52%). After clinical and laboratory examinations carried out in intensive care unit and necessary preparation, the children were subjected to surgery under general anesthesia in order to appropriately reposition fragments and to perform osteosynthesis (except 29 fractures without displacement of fragments).

Results. In metaphyseal, epi-metaphyseal, epiphyseal, and metaphyseal-diaphyseal fractures osteosynthesis was performed with Kirschner pins through cross insertion. In all operated cases fragments were consolidated without complications. Intramedullary osteosynthesis with metal rods, especially elastic ones was used in transversal diaphyseal fractures of the femur and forearm; while in oblique and spiroid diaphyseal fractures, osteosynthesis was additionally associated with cerclage wiring. Stable osteosynthesis was performed with the external Ilizarov apparatus in diaphyseal fractures of the leg. In diaphyseal humeral fractures, osteosynthesis was performed with elastic rods or Ilizarov pins, using the principles of TEN method. In open fractures, after primary surgical wound treatment, osteosynthesis was performed with pins or external devices.

Discussions. The outcomes of surgical treatment in multiple fractures directly depend on the location of fractures, the quality of surgery, compliance with the requirements of biological osteosynthesis with endosteal and periosteal protection. We consider inadmissible to perform on children osteosynthesis with massive screwed plates as well as major removal of periosteum from bone.

Conclusion. The basic treatment in multiple fractures is the surgical one, being carried out in one stage in the following order: open fractures, intra-articular fractures, fractures of the femur, leg, upper arm, forearm; biological minitraumatic osteosynthesis.

Keywords: multiple fractures, osteosynthesis, baby.

COMBINED FINE OSTEOSYNTHESIS OF COMPLICATED DIAPHYSEAL FRACTURES IN CHILDREN



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Objective of study. To implement the method of osteosynthesis in children in order to protect the bone regeneration structures.

Material and methods. In the last five years combined fine osteosynthesis was performed in 29 children aged between 3 and 15 years. The following fractures were determined: complicated humeral fractures - 5 children, femoral fractures - 18 patients, leg fractures - 4 patients, and clavicle fractures - 2 patients. In diaphyseal forearm fractures with indications for surgical treatment, osteosynthesis was performed with pins or elastic Bogdanov rods. Combined osteosynthesis was performed in children with diaphyseal humeral fractures (spiral, oblique, comminuted with major fragments and displacement) with pins inserted from the distal (lateral and medial) metaphyseal side through the bone canal, across the fracture level and up to the upper part of the humerus. Thus pins have three support points (introduction, crossing and the inner part opposite to the upper one). The stability was ensured by osteosynthesis performed with cerclage wiring. In complicated diaphyseal femoral fractures, combined osteosynthesis was performed with antegrade elastic intramedullary rod and cerclage wiring. In diaphyseal distal femoral fractures, osteosynthesis was performed analogously to that in humeral fractures. In complicated diaphyseal fractures of the leg, combined osteosynthesis was performed with pins inserted distally and cerclage wiring.

Results. Fragments were consolidated in all operated children. No cases of pseudoarthrosis or post-traumatic deformity were recorded. The usual treatment for recovery allowed to restore the movements in the immobilized joints.

Discussions. The method of combined osteosynthesis in complicated diaphyseal fractures in children has a major priority, protecting periosteal and endosteal tissues that are severely affected in osteosynthesis with screwed plates or massive locked intramedullary rods. Biomechanical researches (Muleret al., 2011) have objectified the priorities of cerclage wiring. Intramedullary osteosynthesis with thin elastic rods or thick pins protects the endosteum; the pins are crossed through the bone canal mechanically but not electrically.

Conclusion. Combined osteosynthesis of comminuted complicated diaphyseal fractures of the humerus, femur and tibia in children have led to good results, with absence of complications. There were used modern, fine and elastic fixators associated with cerclage wiring, thus protecting the periosteum, endosteum and cortical bone.

Keywords: complicated fractures, fine osteosynthesis.

ECHOCARDIOGRAPHY CRITERIA FOR THE COMPRESSION OF THE HEART IN CHILDREN WITH FUNNEL CHEST



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Echocardiography performed in 30 children aged 4 to 18 years, with funnel chest of the second and third degree. The study was conducted by standard methods. The survey found changes of heart. In 12 children changed the shape of the right ventricle. In two cases observed change in the geometry of the right atrium. Changed the kinetics of the interventricular septum. In 5 cases revealed hypokinesia in 2 cases of hyperkinesia and in 2 cases asynchronism reduce the interventricular septum. In 7 children recorded an increase in speed characteristics of diastolic flow through the tricuspid valve.

Keywords: funneled deformation of a thorax, echocardiography, Doppler effect

CONDUCT TREATMENT OF JUVENILE SLIPPED EPIPHYSES



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Introduction: mostly occurs in young adulthood. The disease occurs with frequency of 4-5 cases per 100 000 inhabitants, and patients with juvenile slipped epiphyses (JE) represent 0.5-5% of children with orthopedic pathology. The ratio of boys and girls - 3:2. Bilateral involvement is described in 20% of patients.

Discussions: JE was described for the first time in 1572. Due to the relative rarity of the disease, many physicians are not aware of the existence of it. Until now the vast majority of children with JE were getting treatment lately.

JE etiology is still far from being fully disclosed. The factors are well established: hormonal disorders, genetic predisposition, as well as hard exercises and micro traumas. Endocrine-orthopedic symptom of the disease is the breaking the correlation between sex hormones and growth hormones. Those two groups of hormones play an important role in the development and delayed puberty of the epiphyseal plates. According to some authors the obesity, anteversion on proximal femoral and bones immaturity are the causes of JE.

The disease pathogenesis is a slow displacement of proximal femoral epiphysis down and dorsal. With JE the head of the femur remains acetabular fossa, so both femoral neck and femur lose contact with him. This balance is rotating around its longitudinal axis, "flips" to exterior and positions member in the position of external rotation.

The clinic is pretty typical and severe form of the disease. The diagnosis is based on anamnesis, clinical examination, orthopedic, X-ray, CT and MRI. Depending on the clinical data, 3 forms of JE are determined: acute, chronic and acute form of the background chronic evolution. R-study must be carried out in two projections: anteroposterior and lateral after Lowenstein - to perform radiometric survey of Klein line.

The aim is to obtain treatment of epiphysiodesis: I stage is skeletal traction which ends up with surgery.

Conclusions: mandatory consultation at ortoped-pediatric doctor if there are disorders in children walking, pain in the limbs. Benefit of the treatment is directly proportional to the time when the disease was diagnosed. Support of the affected limb is excluded up to 6 months from diagnosis.

Keywords: juvenile slipped epiphyses, hormonal disorders, Line Klein

OSTHESYNTHESIS OF LESIONS IN TUBULAR BONES GROWTH ZONES AT CHILDREN



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Introduction: Growth zone lesion areas of tubular bones at children are fairly common, their consequences are blocking of bone growing area and limb deformation. According to contemporary data - growth areas lesions represent 5% - 17% of the total number of children fractures. The appearance of late growth, limb deformation are the signals of lesion in the growing area.

Discussions: The purpose of this paper is to improve treatment results of children with affected growth areas, based on complex examination, using contemporary methods.

Clinical data is based on analysis of treatment results of these injuries in our section. Over the last three years in our section were treated 239 children with lesion in growth area, which constitutes 11% of the total number of children with fractures. Of which 190 were during acute trauma and 49 with secondary damage. 91% were children with grade II after Solter Harris and more rarely - 9% grade I after Solter-Harris. Main method used in lesion diagnosis is the clinical radiological method. Computed tomography is indicated only for diagnosis concretization and the affected area appreciation. 190 cases were undergoing the treatment in the acute period, the orthopedic reduction was performed, by discharging of the affected area by skeletal traction and plaster immobilization. Indications for surgical treatment were the outdated lesions, inefficiency of orthopedic reduction. Surgical treatment methods - transosseous osteosynthesis, orthopedic and surgical reduction with pins fixation. The consequences treatment was surgical, using osteotomy methods for deformity correction, affected limb lengthening by the Ilizarov method. Treatment results assesment was based on the following indices : anatomical condition, functional during the trauma, deformities and limb shortness were appreciated during later period. Treatment results have been good and satisfactory 95.6% (228 cases). In 4.4% (11 cases) the results were unsatisfactory and required repeated surgical corrections.

Conclusions:

1. The maintenance method is the stated method for children with growth zone lesions in the acute period.
2. The surgical treatment has indications in outdated lesions during late addressing.
3. Lesions in growing area at children represent 11% of the total number of tubular bone fractures, serious lesions causing limb deformity.

Keywords: physial area, tubular bones, deformation

OSTEOSYNTHESIS IN EXTREMELY SEVERE TRAUMA IN CHILDREN



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Objective of study. To assess treatment tactics and technique in order to save the affected segment.

Material and methods. This concept included children with injuries after severe trauma, which caused fractures and injuries so complicated that at the first stage the amputation of the segment was recommended. In the past 25 years, experts in the field were directed to refuse primary amputation, but to perform emergency anti-shock treatment and to carry the patient to the Institute of Mother and Child. The lot of clinical experience included 15 injured children aged between 4 and 18 years old. Only one girl suffered an extremely severe trauma of the upper limb, the rest of them (14) had fractures of the lower limbs, and 3 of them were found to have simultaneously fractures of the upper limbs. All patients had open fractures, III B degree of one or more segments, comminuted fractures, crushed soft tissues (even fingers in some children), very dirty major wounds. In 10 children the trauma occurred as a result of road accident (hit by car, wheel crossing over the lower limb

or limbs), in 4 children there was trauma as a result of a massive concrete construction fall over the lower limb. In a girl the disaster followed after inattention while working with an electric meat grinder; the right hand with fingers II-III-IV-V was stuck in the grinding space and broken in the "drum" with all finger and hand tendons. This was the only case where it was not possible to restore the affected segment. The rest of injured patients were subjected to primary surgical wound treatment with removal of non-viable tissue and washout with hydrogen peroxide, furacilin, aminocaproic acid, adaptation of fragments, fixation with pins or external devices, wound suturing or open wound treatment under the dressing. The follow-up treatment was lengthy; when indicated, the following measures were performed - staged necrectomy, skin plasty and bone reconstruction. No amputation was performed in any case.

Conclusion. Regardless of the extent of injury of the child's affected segment, specialists in the field should make maximum effort to save the segment and avoid amputation.

Keywords: extremely serious trauma, segment preservation.

OSTEOSYNTHESIS PECULIARITIES IN THE TREATMENT OF POST-TRAUMATIC PSEUDOARTHROSIS IN CHILDREN



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Objective of study. To appreciate peculiarities of osteosynthesis in pseudoarthrosis in children in order to improve treatment outcomes.

Material and methods. For over 45 years we have treated 161 patients with pseudoarthrosis in various segments after the initial treatment of the fracture in other health-care settings. Children with pseudoarthrosis of clavicle, diaphyseal pseudoarthrosis of humerus, forearm, femur and leg, primarily underwent poor surgical treatment with fixation of fragments with plates and screws, or intramedullary osteosynthesis without proper immobilization. In the clinic pseudoarthrosis treatment was performed by the Ilizarov method concurrently with the removal of deformities and inflammatory processes without intervening in the region of pseudoarthrosis, except pseudoarthrosis of clavicle, where grafting was used. In intraarticular fractures pseudoarthrosis developed after orthopedic treatment with plaster cast splint for immobilisation of the segment. In the clinic these patients underwent operations of restoration or reconstruction depending on the duration after fracture.

Results. In all patients with post-traumatic diaphyseal pseudoarthrosis, the Ilizarov method allowed to obtain good results (consolidation of fragments, removal of deformities, resolution of the inflammatory process, function restoration). In patients with pseudoarthrosis after intraarticular fractures lasting over 2 years after trauma, reconstruction operations allowed to get satisfactory results.

Discussions. Post-traumatic pseudoarthrosis requires surgical treatment to be resolved. There is an opinion that pseudoarthrosis of the capitulum of the humerus may not require surgery. This hypothesis is erroneous because valgus deformity of the elbow in these cases causes chronic trauma of the ulnar nerve, regardless of age (child, teen, adult). The resolution of pseudoarthrosis relies on the operation of correction and prevention.

Conclusion. Post-traumatic pseudoarthrosis prevails in children after intra-articular fractures (71.16%) and diaphyseal fractures (28.84%), its causes being orthopedic treatment of intra-articular fractures and surgical treatment with massive fixators in diaphyseal fractures. "Fracture" of metal construction at the fracture level is an absolute sign of pseudoarthrosis. To prevent pseudoarthrosis in intra-articular fractures, it is urgently needed to perform an open reposition through some mild methods and maneuvers, fine osteosynthesis and immobilization until consolidation is achieved.

Keywords: post-traumatic pseudoarthrosis, treatment, prophylaxis.

OSTEOSYNTHESIS COMPLICATIONS AND FAILURES IN CHILDREN WITH CLOSED LOCOMOTOR MONOFRACTURE



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Introduction. There is not any surgical method of treatment without failures and complications. The main cause of their increase is placement of massive metal fixators in the child, which are similar to those used in adults.

Material and methods. The failure of surgical technique was recorded in 12 children, including one with the fracture of the clavicle fixed with screwed plate and pins—with pin fracture and migration of the distal end forward into mediastinum. The

Ilizarov apparatus was incorrectly fixed in 2 patients with diaphyseal humeral fracture; wrong technique in osteosynthesis of intraarticular fractures of the elbow was recorded in 6 patients. Some mistakes in diagnosis were recorded in 3 children with forearm fractures-dislocations. Postoperative osteitis was present in 11 children at various sites after osteosynthesis (clavicle, humerus, femur, leg, astragalus). Pseudoarthrosis following osteosynthesis developed in 38 patients, in the majority after diaphyseal fractures and osteosynthesis with screwed plates, intramedullary rods, and bolts. There was found fracture of the metal fixator at the level of the primary fracture in 8 cases, which certainly proves the presence of post-traumatic pseudoarthrosis.

Discussions. All cases of pseudoarthrosis developed after performing metal osteosynthesis. Also, purulent complications occur after osteosynthesis, being life-threatening complications (damage to subclavian vessels during surgery with a fatal outcome, migration of the pin end into the mediastinum, aorta and pericardium, etc.). In this regard, the indications for surgical treatment should be strictly selected and surgery has to be performed by the specialist who will avoid possible complications. In diaphyseal fractures of the humerus, forearm, femur and leg, it is necessary to comply with osteosynthesis requirements in order to avoid major removal of periosteum from the bone, endosteal trauma, therefore osteosynthesis has to be performed with fine and relatively stable devices. Osteosynthesis of elbow fractures must be made through an anatomical-functional approach, neither muscles and tendons sections, nor olecranon osteotomy. Delicate surgical technique, protection of the tissues adjacent to the joint, maximum possible limitation of wound exposure are among the factors of preventing complications.

Keywords: osteosynthesis, complications and failures, prophylaxis.

OSTEOSYNTHESIS IN METAPHYSEAL FRACTURES IN CHILDREN



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Objective of study. To implement the method of fine osteosynthesis in the metaphyseal open fracture, fractures with neurovascular disturbances, intraarticular fractures.

Material and methods. During 5 years in the Clinic of Orthopedics and Traumatology of the Mother's and Child's Institute 547 children with metaphyseal fractures were treated surgically: 75 children had proximal metaphyseal fractures of the shoulder, 290 children suffered from distal metaphyseal fractures of the arm, 35 kids were with distal metaphyseal fractures of the hip and 147 children had proximal and distal metaphyseal fractures of the thigh. The osteosynthesis was performed with Ilizarov and Kirschner pins.

Results. Postoperatively plaster casts were applied for the 4-8 weeks depending on the age of the patient and of the fractured segment. Unsatisfactory results were observed in patients from vulnerable families, possibly because of not respecting the orthopedic regimen, and consisted from angular deformities after repeated traumas and inflammation around pins.

Discussion. The majority of metaphyseal fractures are treated conservatively. In some cases surgery is absolutely indicated. In our clinic metaphyseal fractures are treated surgically using fine and minimally invasive osteosynthesis with pins. Osteosynthesis with pins allows adequate stabilization of the bone fragments. In children with metaphyseal fractures the osteosynthesis with Ilizarov and Kirschner pins was used, 2-4 pins depending on fractured segment, age of the patient and fracture complexity. The pins are introduced crisscross, transcutaneously and transosteally. The tactics and techniques of the surgical intervention is individualized in each case, depending on the fractured segment, type of the fracture, character of displacement, and age of patient. The external immobilization – plaster casting is applied for 4-8 weeks depending on the fractured segment and the patient's age, and the orthopedic regimen should be strictly respected.

Conclusions.

1. In metaphyseal fractures osteosynthesis should be fine and minimally invasive.
2. Using of huge metallic plates compromises the fractured segments grow.
3. The tactics and technique of surgical intervention should be individualized depending on level and type of fracture, displacement of fragments and kid's age.
4. External cast provides perfect stability of the osteosynthesized fragments.

Keywords: osteosynthesis, metaphyseal fractures, children

TRANSPEDICULARY OSTEOSYNTHESIS AND PARTICULARITIES OF CORRECTION OF CHILDREN WITH SEVERE AND VERY SEVERE SCOLIOSIS



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Work's goal: improvement of a life quality of children with spine deformations, by working out of surgical treatment algorithm.

Material and methods. 109 patients with severe scoliotic deformations have been pre- and postoperatively examined. The evaluation included collecting of anamnesis data, clinical examination, labs and imaging (standard radiography/ with functional tests, magnetic resonance) with a follow-up of 1 to 15 years. Children were aged between 5 and 17 years; they were predominantly girls – 69 (76 %).

Results. The main goals of surgical interventions were: elimination of the compression factor, deformation and disbalance correction and spine stabilization. The distant results of surgical treatment were good – 68,4%, satisfactory – 24,1% and unsatisfactory – 3,5%.

Conclusions.

1. Optimum methods of correction of difficult rigid scoliotic spine deformations were: forward spine release; dorsal correction, total fasetektomy (the bottom and top facing) throughout correction by Pontus' method and backbone fixation by a metal construction.

2. Surgical treatment of difficult juvenile scolioses began at 8-10 years old, with the following dorsal correction by "a growing construction", without posterior spine fusion execution.

3. In cases of congenital deformations primary operative defect's correction was carried out at children at the age of 5-7 years – "blocking spondylosyndesis" at curvature top with the follow-ing dorsal correction by "a growing construction" without posterior spine fusion execution.

4. Final correction of deformation, posterior spine spondylosyndesis and thoracoplasty are carried out on the end of spine growth.

Keywords: surgical treatment, deformation, scoliosis, children.

OSTEOSINTEZA NUSS IN SURGERY OF CHEST MALFORMATIONS IN CHILDREN



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Purpose. Improvement of the quality of life of children with chest deformities, by the application of advanced technologies in surgical treatment.

Material and methods. In the Clinic of Pediatric Vertebrology, Orthopedics and Traumatology during the years 2012-2015, 21 children aged between 5 and 14 years old with congenital chest malformations were operated: 12 (57,1%) children with excavated chest, 9 (42,9%) patients with chest deformity caused by scoliosis with "thoracic hypoplasia syndrome" -14 boys (66,7%) and 7 girls (33,3%).

Results. Good results (no complaints, functional disorders of the lungs and heart are not obvious, chest deformation was removed) - were observed in 19 (90,5%) patients. Satisfactory results (a slight deepening in the anterior wall remains, there are no complaints) - 2 (9,5%) patients.

Conclusions.

1. Conservative treatment or delayed surgical treatment led to irreversible disorders and complications of the functions of internal organs.

2. Surgical correction of severe chest deformities is the only method that allows to prevent the progression of internal organs dysfunctions.

3. Mini invasive Nuss procedure is the most beneficial method of correction of deepening chest deformities.

Keywords: chest malformations, surgery, children.

OSTEOSYNTHESIS IN CHILDREN AND TEENAGERS WITH TRAUMATIC SPINE DEFORMATIONS



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Work's goal: Rising of treatment's efficiency at traumatic deformations of thoracal and lumbar spine department at children by means of development differentiated surgical tactics.

Material and methods. 29 patients with spine deformations have been pre- and postoperatively examined. The evaluation included collecting of anamnesis data, clinical examination, labs and imaging (standard radiography/ with functional tests, magnetic resonance) with a follow-up of 1 to 5 years. Children were aged between 3 and 17 years. The indications to operative treatment were: spine instability (on F.Denis' scale) at which there are damages of two or more backbone's colons, according to AO/ASIF classification (Gertzbein S.D., 1994): Types AI – 3 (10,3%) patients, AII-AIII – 14 (48,3%), BI-BIII – 7

(24,1%), CII-CIII – 5 (17,2%) patients.

Results. The main goals of surgical interventions were: elimination of the compression factor, deformation and disbalance, correction and spine stabilization. The comparative analysis of the quality of life of patients (according to a questionnaire „EQ-5D”), before and after surgical intervention, has shown that the quality of life of patients improved, in comparison with the preoperative period, from $12,7 \pm 0,3$ points to $7,7 \pm 0,1$.

Conclusions.

1. In fresh cases of the complicated spinal - marrow trauma with mild and average degree of a neurologic symptomatology (degree of D on Frenkel) the preference was given to the closed, indirect decompression. At a serious neurologic symptomatology (A, B, C degree) carried out open decompression and revision of dural bag's contents.

2. The early surgical intervention leads to pain syndrome's cupping, restoration of a vertebral form, elimination of the spine deformation and stabilization of the damaged segment, using only back access.

Keywords: spine, traumatic deformations, children.

OSTEOSYNTHESIS OF FRACTURES ON THE SHORT BONES AT THE CHILD



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Introduction: In this work, we included children with short bone fractures and some tubular bones smaller than the long bones. Treatment of children with these fractures is predominantly conservative, but there are cases that require surgical treatment with osteosynthesis.

Material and methods:

During the years 2011-2015 in the Clinic of Pediatric Orthopaedics and Traumatology, of the USMF, Nicolae Testemițanu” of the National Scientific and Practical Center of Pediatric Surgery ”Natalia Gheorghiu”, orthopedic and surgical were treated 239 children with short bone fracture, children were divided by age 3-10 years – 57 children and 10 to 18 years – 182 children, by gender: girls 95, boys 139, with male prevalence being net.

Distribution according to bone injured was: clavicle fractures – 125 children; II-V metacarpal fractures – 86 children; carpal scaphoid fracture 3 children; fractures of metatarsals II-IV – 25 children.

Results and discussions:

In the case of fracture of the clavicle, metacarpals II-V, carpal scaphoid, metatarsals II-IV, children shows pain at the site of trauma in all cases of fracture, local swelling, sometimes subcutaneous crackles perception associated with abnormal mobility. In all cases of fracture of the short bones correct diagnosis was confirmed radiographically. Orthopedic treatment benefited 61 children, but 178 children followed surgical treatment.

All these cases of short bones fractures surgical treatment was performed: open reposition, adaptation of the fragment and fine osteosynthesis with Kirschner or Ilizarov cross brooches, they were followed in dynamics for at least 2-3 months after the removing of osteosynthesis material and cast immobilization, which was obtained a good result with restoration of the affected bone congruence in all children, data of signs of nonunion or other complications had not been recorded.

Conclusion:

1. Fractures of clavicle, metacarpals bones II-V, scaphoid bone, astragals bone, metatarsals bones, injury occurring as a result of the increased activity of the child, caused by street accidents, sports competitions, physical aggression.

2. The surgical treatment - of listed fractures is indicated in unstable fractures with displacement, open fractures, polytrauma and consists of open reposition, adaptation of fragments - fine fixation with Kirschner brooches, followed by immobilization in a cast.

THE PROBLEM OF DISEASES WITH HEREDITARY PREDISPOSITION OF DYSPLASTIC HIP IN CHILDREN



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In this work there elucidated the systemic integrative research of joints diseases due to inherited predisposition. On the basis of conceptual analysis is decrypting: the dysplastic syndrome of instability a hip joint, dysplastic syndrome of necrosis and epiphyseolysis of femoral head. This investigation resulted in a radical change of ideas on the majorities of joints diseases due to inherited predisposition. Essential corrective amendments in to there diagnostically medical process with its foremost prophylactic orientation.

Key words: pathology of joints due to inherited predisposition, multiform conceptual model, dysplastic syndrome of femoral instability, dysplastic syndrome of necrosis and epiphyseolysis of femoral head.

CHIRURGIE PLASTICĂ ȘI RECONSTRUCTIVĂ

PRELIMINARY RESULTS IN THE TREATMENT OF THE DIAPHYSEAL BONES DEFECTS OF THE LOWER LIMB USING THE METHOD OF THE INDUCED MEMBRANE



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Introduction: The management of segmental long-bone defects is a challenge. The literature has described many techniques, but each is fraught with specific difficulties. Masquelet's technique of induced membrane is now a reference surgical procedure for the treatment of complex lesions requiring bone regeneration. The concept of induced membrane was introduced by Alain-Charles Masquelet in 1986. The method consists in formation of an induced membrane by a foreign body which has secretory properties, influencing positive on the regeneration and strengthening of the cancellous bone grafts.

Aim: To investigate the morphological properties and characteristics of induced membrane which was modeled in an experimental group of rabbits in order to assess and to optimize the effectiveness of the Masquelet method in the clinic.

Materials and methods: Experimental work was done using a group of rabbits (n=10) with the weight $5,5 \pm 0,5$ kg and the age – 5 months. The investigation had 3 steps. The first step of the study consisted in creating the bone defect, filling it up with an antibiotic-impregnated cement spacer and stabilizing it with a plate. The second step of the study was 21 days later, consisting in incision of the induced membrane, removing the spacer and filling up the space with cancellous bone chips collected from iliac crest. At this stage we sacrificed 5 rabbits in order to perform the histological and morphological examination. At the sixth week we switched to the third step – ablation of metal construction and the radiological control exam. At this stage we sacrificed 5 rabbits to study the morphological aspect of the healed bone.

Results: The histo-morphological examination performed at the 21 days demonstrated the presence of an inflammatory process characterized by neutrophilic, eosinophilic elements and regeneration's elements – fibroblasts. Also, it was determined a pseudo-synovial metaplasia and a villous hyperplasia with formation of synovial epithelium on the internal face of the induced membrane. The histo-morphological exam performed at the 6 weeks has demonstrated the continuation of the neoforming process and of the bone modeling, the regeneration process prevailed over the inflammatory one. The morphological aspect was formed by agglomerations of fibroblasts, myoblasts and collagen and numerous vascular buds, that promotes a good neoangiogenesis and osteogenesis of the bone.

Conclusion: The morphological study demonstrated an intense process of cell proliferation and differentiation, which highlights the biological role of induced membrane by foreign body with secretion of the osteoinductive factors, promoting the vascularization and corticalization of the bone. The Masquelet method is an effective method that allows getting the consolidation of the bone in case of critical size bone loss.

Keywords: induced membrane, cement, cancellous bone autograft.

LATISSIMUS DORSI PEDICLE FLAP IN SOFT TISSUES RECONSTRUCTION OF UPPER LIMB



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Purpose: highlighting possible migration variants of pedicle latissimus dorsi flap at thoracic limb's level and the permissive limits in achievement of the best reconstructive results.

Material and methods: pedicle latissimus dorsi flap was performed in 5 cases for tissues defects treatment, being used myocutaneous type. LD flap was used to cover 3 regions of the upper limb: arm - 2 (25%) cases, the elbow joint - 3 (37.5%) cases, proximal third of forearm - 3 (37.5%) cases. The flaps were harvested in the classical way on their thoracodorsal pedicle. The maximum dimensions of tissues defects were 30 x 18 cm.

Results: in the study were harvested 5 flaps, none being lost. 3 (60%) flaps survived completely, and in 2 (40%) cases

had reached to a point 10 cm up to 15 cm distal to the olecranon without significant elongation of the pedicle. 2 (40%) cases developed marginal distal necrosis of about 5 cm, being carried out necrectomy and skin grafting. In 4 (80%) cases migration paths were sutured during first surgical stage and in 1 (20%) cases – at second surgical stage, using skin grafts. No complications at donor site were reported.

Conclusions: This study revealed that latissimus dorsi pedicle flap can be used to cover large skin defects localized on thoracic limb's level, down to the proximal third of the forearm. It can be used up to 60% of the LD surface to cover the defects, without compromising the function of the shoulder. Migration distal from olecranon is not always safe, being accompanied by complications such as marginal necrosis.

Keywords: latissimus dorsi flap, migration, limits.

RECONSTRUCTION OF SOFT TISSUE LOSS IN OPEN FRACTURE OF LOWER LIMB – CASE REPORT



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Purpose: to report a clinical case of open fracture of leg with tissues defect treated ortho-plastic and to analyze final outcome with regards to time taken for union and complications.

Clinical case: this paper reflects one clinical case of a man of 35 years old, smoker, admitted in Emergency Department with Gustilo Anderson type IIIA open fracture in medio-distal 3rd of right calf's both bones with pilon fracture and soft tissues damage AO IO2. In acute stage was performed debridement, fracture fixation in external fixator and reconstruction with posterior tibial artery distal perforator flap. The donor area was covered in second stage with a split thickness skin graft harvested from the thigh. Within 4 days was performed open reduction and pilon's internal fixation with screws. The flap was monitored hourly during first 24 hours, every 4 hours for the next 48 hours and every 8 hours for the next 72 hours. At 7 days postoperative was determined skin graft's infection with its partial loss, being performed debridement and repeated skin grafting. After the immobilization period, that was for a total of 2 weeks, followed by offloading of 1 week, the patient started to walk using a fracture boot, being discharged for ambulatory treatment. After the 5th month, patient started a full weight bearing status without any assistant devices. At 2 months follow-up was determined fistular tibial osteitis, flap's oedema, being underwent sequester-necrectomy and complex conservative treatment. At 5 months follow-up was determined acceptable primary union and satisfactory flap's integration with good aesthetic appearance.

Conclusion: Open fracture of leg's bones which needs flap coverage should be treated with high priority of radical early debridement, rigid fixation, and early flap coverage. A majority of these wounds can be satisfactorily covered with local or regional flaps.

Keywords: Open fracture tibia, nonmicrovascular flap, regional flap

THE TREATMENT OF POST-BURN SCARS AND CONTRACTURES AT THE LOCOMOTORUM



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INTRODUCTION

Historically, survival was the only gauge of success in managing those with serious burns. Survival is no doubt the immediate concern; it is the restoration to pre-injury status, and social return becomes important for the victim and the treating team. An extensive burn is the most devastating injury a person can sustain and yet hope to survive. More recently, the overriding objective of all aspects of burn care has become the reintegration of the patient into his or her home and community. This objective has extended the traditional role of the burn care team to well beyond completion of acute wound closure. The 3 broad aspects of this effort are rehabilitation, reconstruction, and reintegration.

MATERIALS AND METHODS

Different principles of the surgical treatment were implemented in the practical activity thorough various plastic methods. The research includes a lot consisting of 386 patients with post-burn sequels in the locomotors system. Patients were divided into 3 groups according to the location of their lesions: upper limb and axillary region (n=192); trunk and neck (n=88); lower limb and perineum (n=106).

RESULTS

Various surgical procedures were applied:

Excision and plasty through advancement-53 (13,7%) cases;

Excision and plasty with expanded flaps-102 (26,4%) cases;

Incision or scar excision and grafting-93 (24,1%) cases;

Excision and plasty by rearrangement-89 (23,1%) cases;

Excision and combined plasty-32 (8,3%)cases;

Vascularized flap plasty method-17 (5,9%)cases.

CONCLUSION

According to our data scarring sequelae of post-combustion limited locomotor function in 56,3% cases, involving predominately the upper limbs (48,3%). Data from the study show that the post-combustion surgical rehabilitation of scarring sequelae of locomotor medical biological process is difficult, with gradual improvement in 47,9 % of cases. Surgical treatment has ensured both the functional and aesthetic recovery.

KEYWORDS: Burns; post-burn contractures; post-burn scars;

TRAUMA OF LOWER LIMB ASSOCIATED WITH SCIATIC NERVE INJURY – MANAGEMENT PARTICULARITIES



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The aim of this study is to identify and detail posttraumatic and postoperative neuropathies.

Material and Methods: We identified 11 patients diagnosed with the posttraumatic sciatic nerve palsy, including postoperative one. We examined clinical data, trauma's information, surgery, symptoms and medical records.

Results and discussions: From the group of patients involved in the study 9 patients were men. Patients age ranged from 21 to 63 years old. We determined that 5 cases were during trauma or after surgery, and in 6 cases – at distance. Our data find their confirmation in literature data published by the authors: Farrell CM, Springer BD, Haidukewych GJ, Morrey BF.

Conclusion: Knowing the complications allows finding the preventive measures that are targeted towards monitoring the intraoperative neurophysiological complex depending on performed procedure.

Keywords: sciatic, neuropathy, posttraumatic, surgery.

EFFECTIVE METHOD OF TREATMENT OF TISSULAR DEFECTS IN CALCANEAL AREA. CASE REPORT.



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Introduction: Infected tissue defects associated with impaired skeletal always presented treatment difficulties. Any new reconstructive technique aimed at reconstruction of these defects is welcome.

Purpose: The aim was to describe a new reconstructive technique which proved to be effective in the treatment of septic tissular defects of calcaneal area associated with Achilles injury.

Material and methods: The new type of perforator flap was for the first time used in a male patient, 20 years old admitted in the Septic and Reconstructive Surgery Department with a septic defect in the calcaneal area. The defect resulted from a car crash after avulsion of calcaneal tuberosity and injury of the Achilles tendon. The visible size of defects was 6x4 cm. Previously, in the patient was performed primary surgical debridement without bone and tendon stabilization. Three weeks after trauma in the patient was performed secondary debridement of necrotic tissues and reconstruction with tibial posterior corticoperiosteocutaneous perforator flap harvested by propeller techniques. Flap size was 25x5 cm. Bone graft incorporated in the flap was 4x1 cm. After rotation to 180°, the bone graft was fixed with a screw to calcaneus and the Achilles tendon was sutured to it. All this was performed in a single stage. Immobilization of the ankle was assured with plaster cast.

Results: Postsurgical evolution of the flap was without major complications. A minor marginal venous congestion that didn't endanger the flap was observed for several days after surgery and solved spontaneously. Plaster cast was removed at

two months and the patient started to work actively with the ankle joint but without weight bearing. At three months after surgery at radiologic examination bone consolidation was put into evidence. Three months after reconstruction functional score LEM (Low Extremity Measure) was 87% and the patient was full weight bearing. At three months and a half the patient returned to his previous employment.

Conclusions: Tibial posterior corticoperiosteocutaneous perforator flap proved to be effective for treatment of infected tissular defects in the calcaneal area with injury of Achilles tendon.

THE STUDY OF INCIDENCES OF THUMB'S TRAUMA IN LESIONAL COMPLEX OF THE HAND



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Introduction: The increased incidence of hand trauma injuries ranks first in the human body. This continually stimulates surgeons ingenuity to find new performant ways in reconstructive methods. Although, they are facing, on the one hand, with complex hand's anatomy complex and, on the other hand, with the obligation to preserve the integrity of the nervous, vascular and tendon system, however, it is real the possibility of a complex reconstruction with similar tissues without creating significant defects.

Purpose: Distribution of thumb's lesional incidence in hand's trauma complex and items separation detected depending on the surface and levels of digital beam.

Material and methods: In this paper we included a group of 460 patients treated during the 2015 year. The age limits were between 19-70 years, divided into categories of 10 years. The sex ratio of the 79 patients with thumb injury was: 69 (87.34%) men and 10 (12.66%) women. Frequency of trauma registered in left member - 40 (50.34%), was higher than in the right one - 39 (49.67%). 79 (17.17%) patients from total group have suffered thumb's trauma, including: separate thumb - 46 (58.22%) and in complex with other fingers - 33 (41.78%). In thumb's trauma, according to segments, were included patients treated in hospital. Proximal phalanx was found to be most traumatized - 39 (49.36%) cases, followed by the distal phalanx - 37 (46.83%) cases and only in 3 (3.79%) cases have suffered both phalanges.

Results: incidents of separate thumb's trauma are met at 46 (58.22%) patients and in complex with other fingers in 33 (41.78%) patients, which constitutes in the ensemble of hand's trauma 17.17%. Processing of obtained material denotes prevalence of incidence of thumb's distal phalanx, but not the severity that manifests more pronounced as it progresses toward its base. This dictated the treatment's management and complexity of performed surgery.

Conclusion: Thumb's injuries in complex of hand's trauma are more often met as a separate trauma than in association with other fingers of the hand, with a prevalence in men, and left upper limb is affected with a slightly increased incidence.

Keywords: trauma incidence, hand, thumb.

COMPLICATIONS IN TREATMENT OF TIBIAL BONE DEFECTS USING ILIZAROV PROCEDURE



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Actuality: tibial bone defects represents really a challenge to orthopedic specialists because tibia, as one of the biggest bones of the skeleton, often cannot find enough bone "reserves" in the body to compensate the post traumatic losses. Especially in circular defects, this bone tissue "crisis" is felt intractable that the only viable solution to keep member remains callus distraction method. All other methods: vascularized bone, avascular allogeneic transplants, induced membrane method remain applicable in partial or small circular defects. However callus distraction method is a difficult, lengthy and permanently marked by various complications.

Aim: to review the complications manifested during treatment of circular diaphyseal tibial defects and the measures undertaken to overcome them successfully.

„ the paper reflects the analysis carried out on 65 clinical cases of treatment of circular tibial defects. The study group was dominated by men – 48 cases, women being 14 cases. The maximum length of recovered tibial bone defect was 21 cm, the minimal - 5 cm. Most common complications were: infection of the tissues around brooches – 100%; soft tissue defects associated with bone defects - 92%; infections of the bone fragments - 17.8%; 56% delayed consolidation; non unions - 18%; brooches breaking - 7%; intraoperative bleeding - 4.7%; non formation of satisfactory regenerated mature bone - 3.8%;

joint stiffness - 88%; segment's shortening - 92%; misalignment - 12%, ankle and foot edema - 18%; reactive arthritis - 15%; allergic and local exematic response- 3%; painful segment - 5.5% and 11% - local osteoporosis.

Results: in all patients claimed purpose has been achieved. However, the level of satisfaction of the healthcare professionals and the patient was influenced by installed complications.

Conclusions: postoperative complications of tibial bone defects treatment by Ilizarov method are inevitable. This requires a postoperative conduct with frequent monitoring recklessly the period after the surgery.

Keywords: bone defects, Ilizarov method, complications.

SURGICAL MANAGEMENT OF DUPUYTREN'S DISEASE



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The aim: Presenting the retro and prospective analysis of the results of surgical treatment of DD through various surgical methods.

Materials and methods: In the department of Hand Surgery, during the years 2011-2015, 426 patients (361 (84.7%) men and 65 (15.2%) women) were diagnosed and treated surgically DD. The average age for men 57.3 years and women 59.6 years, mean age 58.5 years. Urban residents 156 (36.7%), rural 270 (63,3%). The number of patients operated on right hand - 246 (57.7%) and left hand - 180 (42.3%).

The most commonly affected finger was IV-129 patients (51.19%); finger V-92 patients (36.51%); III-22 (8.73%); I-8 (3.17%); II-1 (0.4%). One affected finger was detected in 312 patients (73.24%); two fingers in 104 patients (24.41%); three fingers in 5 patients (1.17%); four fingers 5 (1.17%). DD grade III was found in 343 (81%) patients, grade II in 60 (14%) and grade IV 23 (5.4%) patients.

Results: In most cases was performed selective fasciectomy with Z-plasty - 326 (75%) patients. 13 patients was performed transverse incisions of McCash's open palm technique, cross finger flap - 12 patients, forearm flaps for hand coverage 3 cases, little finger amputation 2 cases. As part of the surgery in 24 cases was performed arthrolysis with K-wire and at 18 patients was effected capsulotomy.

Conclusions:

- Despite of successes in the treatment of orthopedic diseases and of the experience in the treatment of severe forms of Dupuytren's disease, the treatment problem of these patients up to now remains actual.
- Out of our statistics, the vast majority of patients (gr.III-343-81% and gr.IV-23-5.4%) is addressed in advanced degrees of the disease.
- Surgical interventions in Dupuytren's disease requires deep knowledge in anatomy and plastic surgery skills.
- Complication rate is high, and therefore patients should be directed before surgery to a long and difficult treatment.
- Surgical treatment can correct contractures, but the problem remains unresolved relapse and extensions of given disease.

Keywords: Dupuytren's disease, Dupuytren's contracture.

MANAGEMENT OF LOWER LIMB FRACTURES IN PATIENTS WITH DIABETES



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Purpose: Analysis of the posttraumatic damage coupled with diabetic polyneuropathy of the pelvic limb and possibilities of healing the defects.

Material and methods: A retrospective study was carried out over a period of two years (2014-2016) and included 15 patients with diabetic polyneuropathy. The patients were treated at the Clinic of Plastic Surgery and Reconstructive Microsurgery. The selection criteria included:

- Diagnosis of diabetes with skin and soft tissue ulceration.
- Non-healing traumatic or surgical wounds, with no tendency of healing in diabetic patients.

The 15 patients were divided in 4 subgroups according to the type of surgical procedure performed: split skin grafts, the neighboring flaps, distant flaps, amputation at different levels. The descriptive parameters included: age, gender, the presence of type I or type II diabetes, the location. Additionally, the post-surgery complications were monitored.

Results: 15 patients included in this study, out of which 4 women and 11 men were divided into four subgroups based on type of performed surgeries: the neighboring flaps - 4, distant flaps - 2, split skin grafts - 7, amputation in 2 cases. 12 patients had diabetes of type II, and the remaining 3 patients were insulin dependent. The 6 patients who had reconstruction through

flaps, had distal defects (foot or ankle), whereas the patients who suffered per primam amputation had lesions at the ankle which were skin and soft tissue necrosis, with bone disease and osteitis, with signs of severe vascular disease. The majority of patients who had benefited from split skin grafts, suffered from skin lesion at the ankle level.

Conclusions: Posttraumatic defects in patients with diabetic polyneuropathy of the pelvic limb can be treated through flaps or split skin grafts, so the amputation rate decreases significantly.

Keywords: defects, diabetic, posttraumatic.

METHODS OF AURICULAR RECONSTRUCTION



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Introduction: The article represents a summary article, presenting literature review in the area of auricular reconstruction procedures, accepted worldwide. The article presents the methods of ear reconstruction by implanting various autologous and allogenic materials.

Aim of the study was to find and elucidate lacks and improvement possibilities of contemporary methods of auricular reconstruction.

Materials and methods: to find out the contemporary state of science in the field of auricular reconstruction, more than 130 scientific sources were studied, which resulted in a synthesis article presented.

Conclusion: The importance of this literature review is represented by a critical analysis of advantages and disadvantages of various reconstruction methods applied in today's aesthetic and reconstructive surgery.

There are ways of improvement trying different tissues (natural and synthetic) as a filler for the reconstructed ear.

Keywords: ear, reconstruction, auricular, surgery.

AMNIOTIC MEMBRANE AS A TEMPORARY BIOLOGICAL DRESSING IN THE TREATMENT OF SEVERE BURN INJURIES



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Introduction: burn injuries represent a major problem of public health due to high incidence of lethal cases, and due to severe medical and social consequences, causing long term hospitalization, patient's mutilations and invalidity. Deep burns cause dermo-epidermic defects, which don't heal per primam intentionem, requiring specialized medical care. Promotion of wound regeneration, structure's restoration and function's recovery using temporal biological substituents represents a true challenge for clinicians.

Aim: determination of clinical effectiveness of processed amniotic human membranes as dressing in patients with severe and deep burns; of influence on wound's evolution; of regeneration's time and aesthetic results of sequelae.

Material and methods: it was performed a descriptive retrospective study in a group of 14 patients with 3rd and 4th degree burns treated with amniotic membrane as biologic dressing. At the same time was studied a control group treated using traditional methods. Amniotic membrane (AM) was applied on skin's donor sites, on post burn wounds after early tangential surgical debridement. Results were compared with those obtained in use of traditional treatment methods in patients with similar burns.

Results: using AM on debrided wound diminishes: pain, electrolytic and protein losses, stimulates production of granular tissue and healing, reducing regeneration's time. Using AM as dressing of donor site, promotes faster wound's epithelization with formation of a thin and gentle epithelium.

Conclusions: Amniotic membrane as dressing promotes production of granular tissue and epithelization of debrided burn wound and of donor site.

Keywords: deep burn, skin's substituent, amniotic membrane.

ANALYSIS OF SEPTIC COMPLICATIONS AFTER USING METALLIC IMPLANTS AT PELVIC LIMB



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Aim: the study of the incidence of septic complications related to the post-operative fixation of the pelvic limb, depending on the type of trauma, the affected segment and type type of the osteosynthesis performed.

Materials and Methods: Was conducted a retrospective-descriptive study of a group of 749 patients hospitalized in the period 2011-2015 in IMU Plastic Surgery Clinic and Reconstructive Microsurgery. Was studied the distribution by sex, trauma, time of occurrence of infectious complications and Bacteriological test results.

Results: From the total group of patients were 192 women (25.64), men -557 (74.36%). Damage of the tibial bone were met in 426 cases (57.25%), of which 91 cases (21.36%) after fixation with locked intramedullary nail, 153 cases (35.91%) by use of plate and screws, and 182 (42, 72%) following the extrafocar device. From this group of patients, the femur was affected in 169 cases (22.71%) with the extrafocar application -20 cases (11.83%), screw-39 cases (23.07%), 51 cases of intramedullary rod (30, 17%), and the plates screw -59 cases (34.91%). Septic complications in the plant have a rate of 12.9% (96 cases), and the talo-crural joint 3.35% (25 cases) and respectively pelvis have 3.76% (28 cases). The evolution of the pathology of more than 10 years it has been determined in 12% of cases, and in one year in 73%. In 464 cases (62.07%) predominate G + flora.

Conclusions: septic complications are pathologies difficult to treat, with a long process and severe evolution disease characterized by deriving serious with difficult prevention, diagnosis and treatment.

According to the material in 12% of cases are repeated relapses after the first acutization.

The closed fracture rate prevails septic complications of nosocomial infection: in some cases, fixation was carried to the limit of indications or was stabilized the fragments with material of osteosynthesis, but that was not enough.

Aggression of skeletal infection was caused by various bacterial strains, the predominant Gram + 62.07 %, and the combination of microorganisms, it makes us once again to revisit the administration of antibiotics.

Keywords: trauma; osteosynthesis; septic complications.

LOCO-REGIONAL FLAP IN TREATMENT OF ACTINIC SKIN DEFECT



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Introduction: Plasty techniques currently used in the treatment of the defects are largely standardized. But in clinical practice, quite often we are faced with patients who were undergoing radiation therapy. In this patients category, reconstructive plastic surgery requires a series of questions determined by major changes produced by ionizing radiation to tissues after underwending radiotherapy.

Clinical case: This work reflects a clinical case of a man of 61 years old, that was submit to radiation therapy after tumoral excision, manifested at the level of the third upper part of the large intestine, rectum. At a distance of 2 years after radiotherapy, in the treated actinic sacral region, there was an area of necrosis of about 20x20 cm. The area that was actinic changed, was divided in 3 fields, the limit between them being visually. During surgery, it have been included all 3 fields, that created a defect in the sacral region, of about 20x20 cm. According to the pre surgery plan, it has been done defect's plasty with gluteal flap on the both parts, the donor place being closed by direct suture at the same stage. After surgery, the demarcated area were separated and studied histological for determination of the viable area.

Conclusions:

1. Target area for histological examination is the No.2 area, where examination is indicative in the damage of the skin and soft tissue.
2. The integration of the tissues and organ transplant from another area in the case of actinic defect, may take place after exceeding the second field, histological appreciated with regenerative potential.
3. A preoperative histopathology of actinic area determines the edge of the viable tissue, in some significant cases-areas with important tissue.

Keywords: radiotherapy, actinic defect, flap.

RESOLVING A CASE WITH SEPTIC COMPLICATION AFTER TOTAL KNEE PROTHESASION AT AN ONCOLOGICAL PATIENT



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Introduction: The first data about the importance of the vascularization of bone graft transplant appear in 1905 (Huntington T.W.) As the authors mentioned, this helps callus formation in ordinary terms. In 1975 found the first data about successful

transfer human vascularized fibula (Taylor G.I.) two years later, the same authors describe the first migration of the proximal fibula, for the replacement of the distal femoral defect.

The purpose of the work: Presenting a solved case of bone defect, that occurred after ablation of the total knee prosthesis complicated septic in an oncology patient.

Materials and Methods: This work presents the clinical case of a woman of 30 years, who was diagnosed in 2009 with osteoclastoma in 1/3 of the distal femur operated in the same year in the Oncology Institute, was removed the tumor and was done total knee joint prosthesis, at the end of 2015 at our clinic addressed with a septic area at pelvic right limb. After performing preoperative planning, I decided to solve in 2 surgery stage. At the first stage we performed ablation of the prosthesis. In another step we made the right knee joint arthrodesis with a vascularized fibular flap. Bone transplantation with a length of 20 cm with a pedicle of 10cm that was migrated through rollover technic, that in his structure entered a muscular sleeve and skin island for future monitoring. At the final, the leg was stabilized in an external extrafocal device. After 4 months later, at a follow-up visit, the patient moves independently, using crutches and moderate support on the foot.

Conclusions: Using a composite musculoskeletal cutaneous vascular defect axially allow reconstruction complicated septic at pelvic limb without following the required period.

Keywords: fibula, flap, bone, transplantation.

SECONDARY RECONSTRUCTION OF THE BACK AFTER ONCOLOGICAL EXCISION OF A MASSIVE SQUAMOUS CARCINOMA



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Introduction: Plastic surgical techniques can be used to cover defects results from tumor resections, practically at any level of the human body's surface.

Purpose: elucidation of a case of plasty with axial vascularized flap of a huge back's defect.

Material and methods: the study includes a clinical case of a woman of 56 years, which having a burn at the age of 3 years, now develops a skin squamous keratinized carcinoma of the back. After being treated at the Institute of Oncology and defect's primary closure has failed, she addressed to our department with a huge soft tissues defect of the back. We decided to cover the defect using a LD flap, and we partially extended flap's fascio-cutaneous component on abdomen's antero-intern surface. Secondary surgical debridement was performed in one step with flap's harvesting with dimensions of 30 x 25 cm, donor site being closed in the same stage. After a period of 21 days was determined recovery of the patient.

Conclusions: Postoperative defects of oncological patients are a challenge for plastic surgeons and using flaps on a safe vascular pedicle, to ensure an adequate blood supply, represents a solution.

Keywords: LD, flap, defect, oncologic.

EFFICIENCY OF ULTRASOUND PARAMETERS IN DIAGNOSIS POSTTRAUMATIC CARPAL TUNNEL SYNDROME (TCTS)



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The aim of our study was retro and prospective analysis of ultrasonographic parameters in the diagnosis of carpal tunnel syndrome. Preoperative median nerve was examined by ultrasonography being taken the following parameters - the length in the transverse plane (T) and thickness in the sagittal plane at the level of proximal entrances (D) of the median nerve in the carpal tunnel, the smallest thickness in the sagittal plane at channel or at the distal outlet (d). Were used the following indices: cross-sectional area of the median nerve (AT norm to 7 mm²), $AT = 3.14 \times T \times D / 4$, the ratio of $R = T / D$ (norm up to 3.3), and IGP degree of compression index = 100 (1-d/D) (rule around 10%).

In the Hand Surgery Department of IMSP CHTO in period 2011-2015 we present data of 202 patients with carpal tunnel syndrome. Report male - female is 2.74: 1.

Mean age 55.6 ± 11.9 . In 91 (45.05%) was determined PCTs. At 111 (54.95%) patients with CTS in association with traumatic factor the mean (md) mdAT = 15,06mm², mdTD = 2.12; mdIGP 52.00%. In TCTS mdAT = 13,81mm²; mdTD = 2.06; mdIGP = 52.43%.

Following surgery, with amelioration of disease at 6 weeks in the group with CTS were examined by ultrasound to determine mdAT = 14,43mm², mdTD = 2.12; mdIGP = 21.78%; the SCCT lot mdAT = 16,96mm²; mdTD = 2.17; mdIGP = 22.82%.

At 3 months at 50 patients, of which 23 with CTS was determined mdAT = 13,52mm², mdTD = 2.01; mdIGP = 13.13%; in group TCTS with 27 patients – mdAT = 14,96mm²; mdTD, 2.10; mdIGP, 10.82%.

Conclusion

- Problem diagnosis and treatment of these patients until now remains current, despite of successes in the treatment of orthopedic and experience in the treatment of CTS
- In our study, the absolute majority of patients by ultrasound investigation has been determined that IGP is more demonstrative than AT and TD.
- Because the compression is the primary factor in the pathogenesis of CTS, the appreciation of PGI allows the determination of treatment strategy.

VARIA

HIP PAIN IN YOUNG ADULT (LITERATURE REVIEW)

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The purpose of the study: The author made a review of the literature dedicated to the problem of the hip pain in young adult.

Traditionally arthritis of the hip has been perceived by the general population as a condition of the elderly, although the incidence in younger patients has been well documented. Last decades development of the hip arthritis in young patients has advanced rapidly. In the same time developed also the understanding, diagnosis, and treatment of arthritic hip disease in young patients. There were proposed a variety of new surgical options that can improve the results of treatment of this disability. The purpose of this article is to describe the spectrum of important factors that lead to development of arthritis of the hip in the young patient and to review the contemporary concepts in diagnosis and diversity of the surgical options in treatment of such disease. In this article the author tries to review the important factors in diagnosis and in selecting the appropriate treatment of arthritis of the hip in the young patient.

Conclusions: The old conceptions that hip arthritis is characteristic for older generation have been changed and nowadays involvement of the hip in young patients is well documented in many centers. A variety of new and refined surgical hip preserving techniques are now being utilized worldwide, and continue to progress. Practitioners should be aware of the unique factors that can influence treatment decisions when dealing with a young patient population, and not overlook hip-preserving treatments.

Keywords: hip arthritis, impingement syndrom, hip-preserving treatment

SURGICAL TREATMENT OF SCOLIOSIS WITH DORSAL INSTRUMENTATION

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Analyzing the surgical treatment results of 112 patients with vertebral scoliotic deformities operated with posterior instrumentation. The main angle of the primary scoliotic arch before surgery was about $61,3 \pm 2,7^\circ$. The secondary scoliotic arches in the orthostatic position were $42,9 \pm 2,3^\circ$. The surgical correction of the primary scoliotic arch constituted $34,5 \pm 1,7^\circ$ and of the secondary scoliotic was $23,7 \pm 1,5^\circ$. Assesed after $4,7 \pm 0,4$ years, the loss of the intraoperatively obtained correction was $5,02 \pm 0,6^\circ$ for the primary scoliotic arch, and $4,4 \pm 0,5^\circ$ for the secondary scoliotic arch. The incidence of complications after CDI aplyment was 5,7%.

MENTAL DISORDERS IN BURN PATIENTS

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INTRODUCTION

Mental disorders arising in burn patients, are quite frequent and depend on the period of the disease (acute or convalescence) and clinically can be at the level of non-psychotic, psychotic. Clinical manifestations associated with a burn injury and a

factor of psychogenic influence on the person, depending on its features; with more pronounced disharmony they are more resistant and long lasting.

MATERIALS AND METHODS

We have studied the 153 patients (86 men and 67 women), aged between 20 and 68 years in the acute phase of burn disease and convalescence. Among the study in 65% of cases of severe thermal injury have been reported, 45%-were superficial burns, but with the defeat of the open areas of the body. In the acute phase, more common psychotic disorders, delirium acutum by type or other transient psychoses, especially in people abusing psychoactive substances, mainly alcohol. Delirious syndrome manifested in toxemia phase, at the height of the temperature of the reaction, was undulating in nature and went from 3-4 to 7-8 days.

RESULTS

In the complex treatment of these conditions are assigned psychotropic drugs, particularly neuroleptics, both classic and atypical. At all stages of the disease have been reported autonomic disorders, dissonnion phenomenon, disturbing and dysthymic disorder, partially stoped tranquilizers and antidepressants. In the later stages of the disease, mainly in young women against the background formed of hypertrophic and keloid scarring and deforming contractures, were post-traumatic stress reactions with varying degrees of psycho-social maladjustment: depressive symptoms with anxiety or anhedonia, decreased communication skills, which sometimes leads to suicide attempts. There were fears for their appearance, ability to work, loss of faith in recovery. In the process of biological regeneration therapy is constantly conducted, aimed at reducing the patient's frustration with respect to physical defects and his stay in the community.

CONCLUSION

Thus, for burn patients having mental disorders of different nature and level, which requires the inclusion of appropriate psychotropic drugs in general complex of treatment with mandatory psychotherapy at all stages of the disease.

KEYWORDS: Burns; post-burn mental disorders; post-burn dissonnion;

COLLAGEN/CHITOSAN HYBRID SPONGE AS A SCAFFOLD FOR CELL CULTURE



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The aim of this study is to obtain a three-dimensional collagen type I/chitosan scaffold for seeding the cells cultured *in vitro*, and promotion of cell adhesion and proliferation.

Materials and methods used to obtain a collagen I/chitosan hybrid scaffold were bovine tendons that after mincing have been processed with 0,05M Na₂HPO₄ solution for 4 days, followed by enzymatic digestion with pepsin 100 mg per 1gr. of tendon, EDTA and acetic acid for 24 hours at 4°C. Then collagen was purified by precipitation with 1.8 M NaCl, followed by acetic acid dissolution and dialysis in bags with 12000 Da pore size by a large volume of 0.02 M Na₂HPO₄ solution, until pH of collagen solution become neutral or weak base, then it was frozen at -60 °C and allowed to thaw at room temperature. Collagen is separated from the remaining liquid by centrifugation at 1000 g for 10 min. The obtained collagen is dissolved with acetic acid to a concentration of 1%, then freeze-dried (EVD-12; Unicryo MCL-60). Obtained sponge was treated with 0.25% chitosan solution for 24 hours, then washed with distilled water on a vibrator, frequently changing the water. After that the collagen/chitosan sponge is freeze-dried and cross-linked at room temperature in a vapor chamber with 12.5% glutaraldehyde (SERVA) for 24 hours.

Results:

Pore size in native collagen sponge vary between 50 and 200μ, but in the case of hybrid collagen/chitosan sponge, pore size vary between 30 and 100μ.

Conclusion

The obtaining method of a hybrid collagen/chitosan scaffold for cell seeding is effective. The sponge size and microscopic structure allow its utilisation in filling tissue defects and tissue engineering.

Keywords: collagen, chitosan, hybrid, sponge.

METHOD OF CHONDROCYTES ISOLATION FROM HYALINE CARTILAGE



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The aim of this study is isolation of chondrocytes from articular hyaline cartilage and their expansion in cell cultures for further transplantation in a cartilage defect.

Materials and methods: The study was performed on 9 New Zealand White rabbit 6 months old. Under sterile conditions, slices of hyaline cartilage were harvested from unbearing area of knee joint, followed by 0,25% trypsin-EDTA treatment for 30 min and 0,6% collagenase for 6 hours. The cells were cultivated in cell culture flasks by 10000 ± 500 cell/cm² and incubated at 37 ° C with 5% CO₂ in DMEM with 10% FBS. The cells were expanded in culture up to 21 days to a confluence of 80%. The cells was counted by a hemocytometer. The chondrocytes were stained with Safranin O and toluidine blue/fast green.

Results:

From approximately 50 ± 10 mg of cartilage were isolated $4 \times 10^5 \pm 5 \times 10^4$ cells. At staining chondrocytes with Safranin O, the nuclei were black, the cytoplasm gray-green and and cartilage, mucin were orange to red. At staining chondrocytes with toluidine blue/fast green, the nuclei appeared dark blue, the cartilage blue, deep purple and background green.

Conclusion

The method of chondrocytes isolation from hyaline cartilage is efficient and it was confirmed by *in vitro* cell staining with Safranin O and toluidine blue/fast green. Our further purpose is implantation in vitro of expanded chondrocytes on tridimensional scaffold and their transplantation in an osteochondral defect.

Keywords: chondrocyte, isolation, hyaline, cartilage

THE RESULTS OF DEMINERALIZATION OF BONE GRAFTS

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The aim: to develop a fast method of demineralization of cancellous and cortical bone grafts effectively in various sizes for use in restoring bone defects and implement this method in practice of Human Tissue Bank.

Materials and methods: for the study was used bovine bones (tibia and femur). The bones were cut with saws, excluding their heating, bones were deperiostated, washed under running water, dried and degreased. We obtained different shapes of the bones by cutting: circular shape, semilunar shape (used for control), plate and cubic shaped bones. Grafts were distributed into five groups according to the methods of demineralization, dimensions and type of bone. We got nine transplants - bone rings with Ø 4 cm and thickness $5 \text{ mm} \pm 2 \text{ mm}$, 3 specimens for demineralization in acid and 3 by electrolysis. Three grafts were cut by half to control. Each graft weighed $0.75 \text{ g} \pm 5 \text{ g}$. One plate-shaped (70x20 mm) and one cubic-shaped (1,5 cm²) grafts were demineralized by electrolysis from the start. The acid solution was changed over every 24 hours. The demineralization was determined by X-ray, by weighing-machine and by mechanical method.

Results: complete demineralization of the circular-shaped grafts through the electrolytic solution was obtained on the 4th day, and in the samples demineralized just only by acid solution the complete demineralization was obtained on the 7th day. The superficial demineralization of the plate-shaped cortical graft was obtained on the 3rd day, but final demineralization on the 7th day. Partial demineralization of cancellous cubic-shaped graft was obtained on the 2nd day, but total demineralization was obtained on the 5th day.

Conclusions: electrolysis is a method for accelerating the demineralization. The speed of demineralization depends on the dimensions, and type of bones. Cancellous bone demineralize faster than cortical one.

Keywords: decalcination, demineralization, bone graft

ARTHROSCOPIC TREATMENT OF DEGENERATIVE ARTHRITIS OF THE KNEE (LITERATURE REVIEW AND PROPER EXPERIENCE)

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Study goals: In this review described most important methods of arthroscopic treatment of degenerative arthritis of the knee, surgical technique, classifications, structure. And the results, such reported in a medical literature, as the proper results of our clinic.

Material and methods: At the base of investigated clinical, radio-logical and CT - several groups of knees after different methods of arthroscopic treatment, in dependence of disease study, age, and any another important factors, was any conclusions elected, that may be influence and follow for knee arthritis treatment.

Results: It was obtained optimal several algorithms of arthritis knee examinations, arthroscopic treatment and postoperative

conduction.

Conclusions: Exists not only one or two perfect methods of arthritis knee treatment. It depends of age, study, time of suffer, weight, cartilage condition and many another factors. The method of treatment need to be chosen in respect that.

Keywords: knee arthritis, arthroscopic treatment.

VERTEBROPLASTY - MINIMALLY INVASIVE TREATMENT FOR VERTEBRAL FRACTURES



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Background and purpose: Vertebral fracture is the most common complication of osteoporosis and sometimes also in osteolytic metastasis, active hemangiomas or multiple myelomas. We present the indications, technique, complications, etc.

Methods: Vertebroplasty is the percutaneous placement of polymethylmethacrylate (PMMA) into vertebral compression fractures for relief of pain, performed under fluoroscopic guidance while the exact mechanism of pain relief is unknown, it is believed that the delivery of the cement into the fracture stabilizes the vertebral body, obtaining an analgesic effect.

Results: We present our experience of 14 years in percutaneous vertebroplasty (and kyphoplasty) with common indications, results, complications, new indications, tips and tricks, etc.

Conclusions: Vertebroplasty is an alternative to spinal surgery. In experienced centers, percutaneous vertebroplasty is safe and effective in the treatment of patients with painful vertebral compression fractures.

Keywords: vertebroplasty, osteoporosis, vertebral pain, fracture.

MINIMALLY INVASIVE TREATMENTS FOR DISK HERNIA



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Background and purpose: Low back pain (LBP) is one of the common reasons for people to seek treatment from a physician, especially in modern society. We present the indications, technique, complications, etc. of the different minimally invasive interventions.

Methods: A multitude of therapies are available to treat disc herniation, ranging from conservative methods (medication and physical therapy) to minimally invasive (chemonucleolysis, O₂-O₃ therapy, mechanical nucleoplasty, intradiscal electrothermal therapy, etc) and surgery.

Results: We present our experience of 10 years in minimally invasive interventions with common indications, results, complications, tips and tricks, etc.

Conclusions: Percutaneous disk interventions are an alternative therapy situated between medical treatment and spinal surgery. Patients selection is very important and lead to the successful of the intervention.

Keywords: nucleoplasty, IDET, ozone, lombar and cervical spine, intradiscal injection.

ARTHROSCOPIC ACL RECONSTRUCTION WITH HAMSTRING



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INTRODUCTION: Today, in clinical practice, methods of stabilizing operations arthroscopic ACL are widely used, and extensively described. According to most authors, positive outcomes (of such procedures) are being observed in 80-90% of

patients, with a return to the previous level of physical condition in 50-70% of patients. Currently, the literature describes the advantages and disadvantages of using different grafts, single-beam or double-bundle of ACL plastics, and its various fixation design. The usage of the autograft from the tendon of semitendinosus and gracilis muscles, with the use of the lock "endobutton" is the best method to restore the stability of the knee joint. The main advantages of this method are: good biological compatibility; low-impact at the face of the graft; the absence of pain and complications of the donor site, the strength of twice the native ACL, a quicker and painless rehabilitation, the best cosmetic result.

PURPOSE OF THE STUDY: Rate the postoperative results of the reconstruction of the anterior cruciate ligament (ACL) under arthroscopic control with the use of autograft from the tendon of semitendinosus and gracilis muscles with the use of the lock, "endobutton."

METHODS: The analysis of the treatment results of 167 patients with ACL injury of the knee, and the anterior-medial decompensated instability in the period from 2010 to 2015, was conducted. The representation of the group included 144 men and 23 women, with the average age of 26 years old (range 18 to 45 years). Eighty percent (80%) of the patients had sports injury: football-69 patients, 28-ski, fight-9 and other sports-35. In 33 cases, the damage to the anterior cruciate ligament was combined with damage to the medial meniscus, in 16 of the outer meniscus, 5 - both the meniscus, different types of damage to the articular cartilage - 28 cases. The diagnosis was confirmed by clinical, radiological, ultrasound and MRI methods. The maximum diameter of the graft reached 10,5 mm, the minimum - 7 mm, the depth of the femoral canal was formed to the 30 mm, the width according to the diameter of the graft. All operations are performed under endoscopic control, with maximum preservation of natural points of fixation on the tibia and femur, which ensures the normal anatomy and biomechanics of the knee joint during the postoperative period.

RESULTS: Postoperative, the patients were followed up for 6-48 months, using the LYSHOLM scale. Based on these studies, excellent and good results were obtained in 151 patients (90%), satisfactory in 11, unsatisfactory in 5 patients. All athlete patients resumed training after 6 months. Negative results were observed in 3 patients with recurrent instability after re-injury, and 2 septic complication about distal tibial screw fixations after one year.

CONCLUSION:

1. In most cases, the rupture of the anterior cruciate ligament is the result of an injury sustained in sporting activities: during a football game, while downhill skiing or wrestling.
2. Autoplasty ACL tendon of the popliteal area provides a reproduction of the anatomical structure and biomechanics close to natural, with minimum damage around the joint and joint tissues.
3. A locking system ligament "Endobutton", ensures a secure fit of the graft, and does not require subsequent removal structures.
4. This method provides the minimum rehabilitation period, the optimal functional and cosmetic results.

KEYWORDS: Autoplasty ACL, Knee Injury, Hamstring Plasty

ARTHROSCOPIC ANTERIOR SHOULDER STABILIZATION IN THE SHOULDER INSTABILITY



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INTRODUCTION: Arthroscopic shoulder stabilization is a widely accepted method. Very often, an arthroscopic treatment is preferred by patients and surgeons because it is minimally invasive, spares the subscapularis muscle, and because it enables better identification and treatment of associated pathological conditions, and decreases morbidity. The frequency of anterior shoulder instability is quite high, due to the anatomical and functional particularities of the shoulder, and the frequent recurrences after orthopedic treatment of traumatic dislocation of the humerus especially in young people. The arthroscopic method of treatment of this type of pathology became standard practice and is fairly widespread. Arthroscopic surgery provides significantly higher advantages over traditional surgery, such as minimal tissue trauma, reduced intraoperative morbidity, and optimal functional and cosmetic results.

OBJECTIVE: Rate the postoperative results and arthroscopic treatment possibilities of patients with anterior shoulder instability in our clinic.

METHODS: Personal experience includes the treatment of 92 patients (82 men and 10 women, with the mean age of 27 years) on whom we performed arthroscopic stabilization of anterior shoulder instability between the years 2010-2015. The diagnosis was confirmed by clinical, radiological, ultrasound and MRI methods. We performed the reinsertion of anterior-inferior part of the glenoid labrum and joint capsule using bioresorbable anchors (13 patients), metal (40), unresorbable thread suture (39 patients). In 11 patients Bankart lesion was associated with the SLAP lesion, and fixation with an additional anchor was performed. Hill-Sachs lesion was found in 11 cases.

RESULTS: After surgery the patients were evaluated at an interval of 12 to 24 months using the Rowe and Zarins score.

We obtained excellent or good results in 86 patients (76.5%), satisfactory - 5, unsatisfactory - 1 patient. Negative result we have found a year after surgery in a patient, who suffered a minor injury which caused the dislocation of the humerus and recidivism signs of instability.

CONCLUSIONS: Arthroscopic treatment of anterior shoulder instability is a pretentious technique that requires advanced experience of orthopedic surgeons in arthroscopic surgery, providing good and very good functional and cosmetic results in most cases.

The results depend on multiple factors, including age, participation in contact sports technical errors, bone defects, number of dislocations, type of anchors, the presence of Hill-Sachs lesion and the pre-operative bone geometry.

Keywords: Arthroscopic treatment, anterior shoulder instability, Bankart lesion.

SURGICAL TREATMENT OF HALLUX VALGUS



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Background: Hallux valgus (valgus deviation of hallux) is one of the most common acquired pathology of locomotor apparatus. The diversity of surgical approaches in the treatment of Hallux Valgus prove the lack of a certain doctrine that would unify the opinion of the orthopedic surgeons regarding this pathology.

The aim of the research is to improve the treatment results in patients with Hallux Valgus by developing a pathogenetic surgical treatment method.

Materials and methods. The research was held on 19 females older than 45 years old that underwent surgical treatment in the Clinic of Traumatology and Orthopedics, in Tiraspol. Twenty-six surgeries were made in total, out of which 11 patients underwent bilateral surgeries (22 surgeries), and only 4 patients underwent unilateral surgeries. Preoperatively the following investigations were made: X-ray and CT scans in special slides for the anterior part of the foot. Pain syndrome and 2nd degree deviation (or more) of the hallux were considered indications for surgery. The surgical method used by us has the aim of removing all pathological elements of the medial metatarsophalangeal joint followed by their strengthening without changing the shape of the first metatarsian bone, and restoration of the congruence of the metatarsophalangeal joint.

Results. Follow up of late results of the surgical treatment in 14 patients with Hallux Valgus were made up to 4 years. The shape of the anterior part of the foot and the correct position of the hallux was kept in 12 patients. In 2 patients the shape was correct, but the pain syndrome is present at the end of the day.

Conclusion. Taking into consideration modest results obtained from a relatively small number of patients operated for hallux valgus using a special metal plate for fixation of the hallux in its correct position, the results are positive.

Keywords: Hallux Valgus, First metatarsal bone, Plane foot

PARTICULARITIES OF HIP ARTHROPLASTY IN BILATERAL DISEASES OF THE HIP JOINT (CASE STUDY)



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The aim of the study: Appreciation of the tactics and seventionality of the surgical treatment strategy of hip arthroplasty in severe disorders of both hip joints.

Materials and methods: We report a case of a male patient of 61-year-old who came in 2010 in the clinic for hip arthroplasty, having a diagnosis right posttraumatic coxarthrosis, hip ankylosis and vicious consolidation of the subtrochanteric femur fracture on the left side, paralytic equinus valgus foot, statics and gait disorders.

In 1985, as a result of a vehicle accident, he suffered a fracture of acetabulum and posterior dislocation of the femoral head on the left side. It was applied the tibial skeletal traction for one month, after then was made the arthrodesis of the left hip joint. Four years later, as a result of an another vehicle accident, he suffered a fracture-dislocation of the right femur and a subtrochanteric fracture of the left femur, that was open reduced with osteosynthesis with Kuncher centromedular nail. For the fracture-luxation of the right femur was applied the skeletal traction for eight weeks.

As a first step was made the subtrochanteric corrective osteotomy on the left femur and osteosynthesis with DCS and after eleven weeks was made total arthroplasty of the right hip joint. Intraoperative was found the pseudoarthrosis of the posterior-superior acetabular wall. The unconsolidated fragment was removed and the autoosteoplasty of the defect with bone graft from the femoral head was done. The postoperative evolution was normal, patient initiated partial support after

2 months and total to 16 months.

Result: Six months after the last surgical intervention the clinical and radiological evolution is favorable. The patient is satisfied with his functional results, having a Harris score of 69 points on the left side and 92 points on the right side after 4 years of hip arthroplasty.

Conclusion: For obtaining good and long-drawn results in the treatment of bilateral hip joints disorders, it is necessary to correct the important deformities and to restore the biomechanics of the pelvis and hip joints.

Keywords: femur, osteosynthesis, hip, arthroplasty.

SAMPLING OF FREE TRANSPLANT BONE-TENDON-BONE BY MINI-INVASIVE WAY OR BY CONVENTIONAL WAY: PROSPECTIVE AND COMPARATIVE STUDY OF 36 CASES



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The study has been carried out at the Emile de Vialar Clinic in Lyon (France)

The aim of that study is to analyze the feasibility of the mini invasive technique through a comparative and prospective study uni-centric realized on two groups: "classical" and "mini-invasive" of 18 patients. The patients have been checked 6 to 8 months after the surgery. Check has been clinical, radiological and echographycal. Radiological laxity has been evaluated for each compartment. The echographycal study analyzed the the patellar tendon and peri tendon.

All data were extracted on an Excel spreadsheet (Microsoft) and analyzed with spreadsheet tools and those of the toolbox Statistical Toolbox (Matlab).

A radiological classification of the anterior tibial tuberosity (TTA) was established. The study highlights a correlation between the TTA and the patellar apex.

The grafts taken by classical technique showed in every case good characteristic, against 45% of cases taken by «mini-invasive way". The earlier pain was 22 % in the "classic" group and 33% in «mini-invasive».

Data analysis showed no correlation between the earlier pain and (a) the result of "knee walking" test or (b) the thickness of the peri- tendon. It was found a correlation between the results of «knee walking» test and the asymmetry of tabs width in the "mini-invasive" group.

The IKDC scores: a) Subjective was virtually identical and b) Objective was 94% (or A) to the "classic" group and 81% (A or B) to the group "mini- invasive".

This "mini- invasive" technique respects the infra- patellar branch of intern saphenous nerve in 95%. The indication of sampling patellar graft by "mini invasive" technique is the TTA type III.

IMPORTANCE OF SCHOOL SPINAL SCREENING IN EARLY DIAGNOSIS OF SPINE DEFORMITIES



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Introduction: Spine deformities, especially idiopathic adolescent scoliosis is a common disease with a prevalence of 0.47–5.2 %. Early clinical detection of scoliosis relies on careful examination of trunk shape and is subject to screening programs in many countries. School-based screening for scoliosis is performed primarily for the purpose of early detection of spinal deformity, which enables implementation of early conservative treatment that can reduce the risk of curve progression. Although X-ray is the gold standard for diagnosis of idiopathic scoliosis, it is not used as a screening method because of the risks associated with radiation exposure.

Materials and methods: School spinal screening was performed in Republic of Moldova for the first time. A project initiated by the authors has been started in the schools of Chisinau city. School spinal screening was performed in 2741 pupils aged 6-17, mean age - 11,47±0,057 (95% CI: 11,36-11,58). There were 1278 (46,63%) girls and 1463 (53,37%) boys. Clinical orthopedic examination of the spine was performed using six standard positions including Adams forward bending test

and the scoliometry - measurement of angle of trunk rotation (ATR). Seven degrees of ATR was chosen as cut-off point for referral to radiography.

Results: During school spinal screening we detected 773 children with spine deformities, the majority was determined for the first time. Functional spine deformities were found in 641 pupils presenting as round back (15,9%), flat back (18,3%), lordotic (4,8%), kypholordotic (11,9%) and asymmetric (49,1%) posture. Scoliosis gr.I-II was detected in 132 pupils who presented positive on both standing, forward bending test and scoliometry > 7°. There were 82 (62,1%) girls and 50 (37,9%) boys. Definitive diagnosis was confirmed on standing spondilography. The individual treatment program was created for everyone.

Conclusions: The proposed complex examination scheme including orthopedic clinical and instrumental examination, provides to determine the risk factors of development of spinal deformity, monitoring ensures the accuracy of diagnosis, prediction of the disease and helps to improve clinical and functional outcomes of rehabilitation.

Keywords: spine deformities, scoliosis, school spinal screening, complex examination, rehabilitation

PLATELET-RICH PLASMA IN TREATMENT OF DEGENERATIVE AND TRAUMATIC LESIONS



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Objectives: Platelet-rich plasma (PRP) is defined as a portion of the plasma fraction of autologous blood having a platelet concentration above baseline PRP also has been referred to as platelet-enriched plasma, platelet-rich concentrate, autologous platelet gel, and platelet releasate. PRP serves as a growth factor agonist and has both mitogenic and chemotactic properties. It contains a high level of platelets and a full complement of clotting and growth factors. Analyze of methods use PRP-therapy in different osteo-articular diseases and arthroscopical surgery, benefits comparative with surgery without PRP-therapy, benefits PRP-therapy in postsurgical rehabilitation.

Methods: The study includes analysis of cases of non-surgical and arthroscopic treatment of patients with traumatic injuries and degenerative medial femoral condyle chondropathy associated with grade 2-3 treatment that followed in 2013-2015. Clinical evaluation was performed by visual- verbal scale (VAS) in all patients, analysis of five significant factors for patients: pain, mobility, functional disability, return to work loaves disease, satisfaction followed effective treatment. Cartography was the best MRI investigation, which has proven effective for stimulating regenerative chondral

Results: the result was significantly better in patients with chondropathy that followed PRP therapy, clinical improvement is much taller than improving ascertained by MRI. The greatest differences in satisfaction or certificate received treatment and return to usual activities. For patients with synovitis brief duration of postsurgical patients that followed PRP postsurgery therapy was 3 times smaller

Conclusions:

1. The use of PRP therapy in patients with medial femoral condyle chondropathy gr.2-3 in postsurgical rehabilitation 2 times shortened recovery period.
2. The number of people who returned to work or professional sports was 35% higher in the group that followed PRP therapy
3. High efficiency PRP therapy allows to recommend the conduct regular medical rehabilitation in this patient group

Keywords: chondropathy; PRP therapy; knee arthroscopy;

THE CERVICAL PAIN SYNDROME IN CHILDREN AND TEENAGERS



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Purpose: to find the diagnostic methods for determining the etiology of the cervical pain syndrome; to elaborate the optimal treatment strategy.

Materials and methods. The clinical experience is based on the results of examination and treatment of 587 children 3-17 years old over the 15-year period. The acute pain was noticed at 138(23.5%) patients and the chronic one – at the 449(76.5%).

Results: All the cases of the acute pain syndrome were caused by the acute subluxation in the atlanto-axial joint. In 111(80.4%) cases it appeared after a trauma and in 27(9.6%) – after inflammatory processes in the nasopharynx. The C1-C2 subluxation was also determined at 393(87.5%) children with the chronic pain syndrome. The pain at these patients was always accomplished with the symptoms of vertebro-basilar insufficiency and different neurological signs. At the another.

At 112(81.0%) the acute pain syndrome was cured by the head-halter traction. At 26(19.0%) the one-time reposition of the C1-C2 sUBLUXATION was performed under the general anesthesia. In the cases of the chronic pain syndrome the optimal methodology turned to be the isometric relaxation with the following one-time reposition of the C1-C2 sUBLUXATION and the elimination of the intervertebral functional blocking.

Conclusions: 1.The acute cervical pain syndrome was caused by the acute sUBLUXATION in the atlanto-axial joint. For its treatment the head-halter traction is indicated. If it is impossible, the one-time reposition under the general anesthesia with the following immobilization by the neck collar should be used; 2.The chronic cervical pain syndrome was caused by many different factors. In these cases the treatment should include the procedures of manual medicine which need to be determined in each particular case.

Keywords: the cervical pain syndrome, children, treatment.

ACTIVITY OF THE HUMAN TISSUE BANK FOR ORTHOPEDIC SERVICE IN MOLDOVA



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Background The transplantation activities started in the Republic of Moldova with skeletal tissues in 1960. The first valve transplant was performed in 2002 and 30 other valve transplants have been done throughout the following 5 years. On March 2008, was passed the Law no. 42-XVI on the transplant of organs, tissues and cells, modified by Law no.103 of the June 2014.

Results The evaluation, by the Council of Europe's experts, of the system of human organs, tissues and cells transplant in the Republic of Moldova confirmed the complicated situation in the field of transplant and encouraged the mobilisation of the domestic forces, aiming at the implementation of priority strategies and activities related to human organs, tissues and cells procurement and transplant.

The first Multi-tissue bank has been authorized in 2013 by the Ministry of Health. It has authorization for procurement, processing, preservation and delivering allogeneic and autologous skin, bones, nerves, cartilage, meniscus, fascia, vessels, amniotic membrane, autologous adipose tissue and autologous bone marrow.

Procurements of tissues in 2014 was performed from 29 deceased donors and 10 living donors were procured 184 tissues (46 cornea), processed – 544, transplanted – 372 (46 cornea) to 218 patients.

Conclusions One of the aims pursued by the Republic of Moldova is to establish an efficient, functional transplant system that will cover the country's needs in tissues for the patient's treatment.

The evaluation of the transplant system in the Republic of Moldova has pointed out the key-issues that are at the basis of developing the national transplant programme and building a well-organised infrastructure.

Keywords: bone grafts, tendons, tissue bank.

THERAPY FOR COMPLEX REGIONAL PAIN SYNDROME



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Other names: causalgia, algodystrophy, postraumatic dystrophy, Sudeck's atrophy, shoulder-hand syndrome, Reflex sympathetic dystrophy (RSD).

RSD/CRPS is a multi-system syndrome with diverse symptoms characterized by constant pain. It affects the central nervous system, immune, autonomic and vascular system . Usually CRPS affects one or more extremities but it can affect any part of the body. CRPS symptoms vary in severity and duration.

Anyone can get CRPS. It can strike at any age and affects both men and women. The average age of affected individuals is about age 38-40. Children do not get it before age 5, but it is not uncommon in teenagers. CRPS is rare in the elderly. Precipitating factors include injury and surgery. However, there is no relationship to the severity of trauma while in some cases there is no precipitating trauma at all (9%).

The diagnosis of CRPS cannot be made on imaging or laboratory tests. The condition is diagnosed on the basis of clinical criteria "BUDAPESTA" - 2/4 presence of symptoms: sensory, vasomotor, sudomotor/oedema, motor/trophic.

In 2011-2016, the IMS Private SRL MEDICORT addressed 19 patients with CRPS diagnosis: 4 - men, 15 - women. Two women had the severe form of CRPS. There is no simple cure for CRPS. Treatment often involves a number of approaches and aims to restore movement and function of the affected limb. Options may include:

- medication – such as pain-relieving medications (non-steroidal anti-inflammatory drugs; Psychotropic drugs; corticosteroids that treat inflammation/swelling and edema; local anesthetic creams).
- rehabilitation therapy – such as physiotherapy and occupational therapy.
- counselling and psychological support –to help the person cope with stress, depression and constant pain.
- intervention therapy – such as nerve blocks. The most commonly used is a sympathetic ganglion block, which involves the use of a local anaesthetic to stop some of the nerves in the affected limb from working.

To achieve good results, we used Ultrasound Guided supraclavicular / axillary / Sciatic Nerve Block with local anesthetic and corticosteroids, with rehabilitation therapy for 30 minutes, 2-5 procedures in number every six days dependent CRPS clinical forms.

Keywords: nerve block, complex regional pain syndrome.

RESULTS OF THE MINIMAL INVASIVE SURGICAL TREATMENT OF PATIENTS WITH METASTATIC VERTEBRAL FRACTURES



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Pathological vertebral fractures in oncological patients are extremely painful and causes significant disability and dramatic decrease in quality of life. In most cases, these patients are not candidates for conventional surgery of stabilization and radiation therapy effects take time for efficient installation.

Development of minimally invasive surgical techniques have revolutionized by a simple and efficient approach, the management of pathological vertebral fractures.

Vertebroplasty and kyphoplasty offer patients a minimally invasive, percutaneous procedure that dramatically reduces pain related to pathologic vertebral fractures almost immediately with very low complication rates.

Visual analog scale pain scores, analgesic usage and quality of life scales (SF-36) have all been shown have demonstrated their effectiveness to improve in a durable fashion for over 1 year. Also, these interventions have proven efficacy especially after combining them with basic therapy (chemotherapy and / or radiotherapy).

Conclusion. Methods of minimally invasive treatment of metastatic vertebral fractures with a rigorous patient selection, provides effective control of pain with reduced consumption of analgesics and the possibility of continuing background therapy, improving thus the quality of life and life expectancy of these patients .

Keywords: metastatic vertebral fractures, vertebroplasty, kyphoplasty, SF-36, VAS.

MANAGEMENT OF MISSED INJURIES IN POLYTRAUMA PATIENT



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According CRICO Strategies, among the most common and costly medical errors committed in emergency departments are establishing a delay in diagnosis or misdiagnosis, which can have a tragic end for the patient.

The management of multiple trauma patients presents a worldwide diagnostic and therapeutic challenge to trauma, orthopedic and general surgeons. Significant injuries can be missed during primary and secondary surveys in multiply injured patients, for whom resuscitation, diagnosis and therapy have to proceed simultaneously. Many factors involved in the initial resuscitation of the multiple trauma patients, such as altered level of consciousness, hemodynamic instability, or inexperience and inadequate diagnostic evaluation, may lead to missed injuries or a „medical errors”. The injuries can be missed at any stage of the management of the trauma patient, including intraoperatively, and may involve all regions of the body.

Management of polytraumatized patient need application of primary and secondary survey protocols, as is the ATLS (Advanced Trauma Life Support) protocol, will minimize the chance of life-threatening critical medical errors.

Also, intraoperative careful approach is needed for all patients, but especially for hemodynamically unstable patients, giving priority to other regions of the human body than appreciated as trauma, for the presence of vascular lesions.

Examination of polytraumatized patient with special vigilance in a tertiary look, after patient returns to consciousness, will help detect missed lesions during the initial assessment. In most cases we detect missed lesions. This approach will lead to early detection of missed injuries and reduce lost their consequences.

Keywords: missed injuries, polytrauma, ATLS.

PERCUTANEOUS TREATMENT OF CERVICAL AND LUMBER DISC HERNIATIONS



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Work's goal: Determinate the safety and efficacy of gelified ethanol in the percutaneous treatment of lumbar disk hernias.
Material and methods. A total of 49 patients were included in this study and treated with radio opaque gelified ethanol and intraarticular steroids of a lumbar and cervical intervertebral disk hernia. We evaluated each patient's pain levels during the procedure itself and then after 3-4 and 8 weeks, and 4, 8, 12, 24 months after procedure.

Results. Pain levels immediately after the procedure were markedly lower than before the procedure. There were no complications. Two months after procedure administration, the initial pain level had fallen by an average of 84 %. The outcome was quite stable over time (mean follow-up: 2 years). Short-term follow-up with magnetic resonance showed little or no changes in the intervertebral disk but there was discordance with clinical signs. Long-term follow-up magnetic resonance showed a dramatic reduction in hernia volume. Very good or good results were obtained in 42 (89,1%) of the 49 patients, fair — in 16 cases and bad in 3 cases (8,6%). Only 2 cases with a bad outcome at lumbar level went to surgery.

Conclusion. This preliminary study shows the efficacy and inoccuity of this substance. More especially, it demonstrated the absence of complications and recidivates in the immediate and long-term follow-up for more than 3 years for the first cases.

Keywords: disk hernia, radio opaque gelified ethanol, nucleoplasty.

ALLOPLASTY BECOMES SAVING IN SOME DIFFICULT CASES OF RECONSTRUCTIVE SURGERY OF THE LOCOMOTOR SYSTEM



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Objectives of study

During surgical interventions on osteoarticular apparatus appear difficult cases when highly professional orthopedic doctors are facing unusual tactical and technical hardships, unclear safety prognosis of a rationally planned treatment. As usually, surgeons tend to choose the most appropriate method in given circumstances, and even invent new surgical procedures, but alloplasty still remains a saving method.

Material and methods

According to our experience, alloplasty seemed to be necessary during following operations: removing by resection of tumors and pseudo tumors, bone defects and cervico-cephalic endoprosthesis in 3rd age patients with femoral neck fracture in which the intramedullary channel is enlarged.

We have proposed a stable fixation of prosthetic rod in channel by application of a cortical graft in cases of purulent complications, bone defects, after sequestrectomy, when the remaining defect is too large and may be substituted by allograft.

Results

The results were confirmed in 200 patients with these pathologies, operated in our clinic. Alloplastic grafting contributed favorably to fix, restore, and maintain the integrity of the affected bone, substitution of remaining defect and creation of prodigious medical and biological conditions in local osteogenesis and their perfect integration.

Conclusions

In selection of the rational treatment in difficult situations, we were based on our experience in osteoarticular alloplasty during last 50 years. Positive results were obtained in 95.2% of cases. Retrospective analysis of the results of treatment using given method shows the absence of better alternative regenerative treatment.

Keywords: osteoarticular alloplasty, pseudo-tumor, allograft

SOLITARY BONE CYST ON HEEL, SURGICAL TREATMENT



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Objectives

Solitary bone cyst on heels Represents a pseudotumoral pathology with asymptomatic onset. There are controversial opinions – to use conservative treatment in these patients, but some authors believe that during the consolidation of pathological fracture, the given could regress. .

Material and methods

8 patients were included in our study: 6 females and 2 males; age 15-22 – 7 patients, 1 patient – 35 y.o. All the patients were treated surgically – marginal and parietal intracavitary resection followed by substitution of remaining defect with cortical allograft cortical.

Results

In the postoperative and distant period in 7 cases the recovery process was completed with good results. At 35 years old patient during postoperative evolution was developed purulent process – removing of allograft, antiseptic treatment. Later, in ЦИТО was performed the endoprosthetic operation of calcaneus by the method S.T.Zațepin, satisfactory result.

Conclusions

Surgical interventions include various procedures: endoscopic curettage, cryodestruction or electrocautery of cyst walls, osteoplasty of outstanding defect, sealing the remaining cavity with carbon or bioceramic substances. Independently of the treatment methods used, often relapses occur. According to the experience of many authors, including our, we consider that currently the safest method of treatment is surgical intervention: removal of pathological outbreak through different types of resection, and osteoplasty of remaining defect.

Keywords: solitary bone cyst, surgical treatment, cortical allograft.

TREATMENT OF CHRONIC COCCYDYNIA



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Coccydynia is a rare but painful disorder characterized by axial coccygeal pain which is typically exacerbated by pressure. 35 patients with chronic coccydynia were included into the study. Among them 30 females and 5 males; mean age 39 years – range 12 to 58 years. The mean symptom duration was 3 months (range 1 to 6 months). Twenty-one patients had a history of trauma and the rest were considered idiopathic. No patient with trauma addressed at the time of the incident.

The results of our study allowed to establish that the conservative treatment is the treatments of choice for patients with coccydynia despise etiology, radiographic data and intensity of clinical symptoms. Successful results can be obtained and maintained with no less then two courses of conservative treatment. For patients unresponsive to conservative treatment, coccygectomy is a successful method of treatment.

Keywords: chronic coccydynia, trauma, conservative treatment, coccygectomy.

ASOCIATED INJURIES OF THE PERIPHERAL NERVES OF THE FOREARM AND MANAGEMENT OF SURGICAL TREATMENT



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Introduction

Repair of a peripheral nerve has considerable functional consequences for the individual, due to sensory and motor loss, as well as the pain and discomfort from cold intolerance.

Material and methods

Our experience refers to the period 1998-2016 years based on the treatment of 104 patients with associated nerve injuries. Patients were aged between 16 and 65 year, 83 were male and 21 female; in 87 cases the nerve lesions were associated with flexor tendons injuries and in 42 cases with a variety of fractures. Nerve injuries consisted in multiple lesions of the proper digital nerves - 16 cases, lesions of the common digital nerves at palm level— 19 cases, lesions of the median or ulnar nerves in the fore-arm- 50 cases, combined injuries of median and ulnar nerves were found in 19 cases.

Primary surgical approach included anatomical restoration of skeletal and tendinous elements. In 54 the nerve reconstruction was also performed, utilizing epineurotomy in 61 cases and the epineurotomy in 7 cases, neurolysis in 29 cases. In 7 cases with irreparable radial nerve palsy we used with successful transfers of muscle tendon.

Results and discussion

There still are discussions about the optimal posttraumatic delay for nerve reconstruction, but one condition must be clear: injuries of the nerves in the hand require — especially if the motor component is involved - an as early as possible surgical

approach.

As above mentioned, we performed primary neurorraphy in 54 cases.

Results were considered good in 18 cases, satisfactory in 31 and poor in 5 cases.

Microscopic techniques utilizing atraumatic materials combined with an active postoperative recuperatory management allowed us to obtain favorable results in associated injuries of the hand.

In 24 cases the lesions were associated with fractures of the humerus bone, in 4 cases - with fractures of the radial bone. The open lesion of the nerve was present in 6 cases, in 2 of which was lesioned the median nerve, in 1 - was lesioned the median, ulnar and radial nerves.

In 7 cases with irreparable radial nerve palsy we used with successful transfers of muscle tendon. The long term results were followed for 7 patients. Good results were registered in 4 cases, satisfactory 3 cases.

Keywords: injuries nerve, radial nerve palsy, transfers of muscle tendon

INTRAOPERATIVE PREVENTION AND TREATMENT OF PERIPROSTHETIC INFECTION AFTER TOTAL HIP OR KNEE REPLACEMENT



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Steady increase in primary total hip replacement and total knee replacement in Ukraine and worldwide inevitably leads to corresponding increase in absolute incidence of their complications, including periprosthetic infection (PPI). Its frequency has been reported lately from 0.5% to 3.0%. In absolute numbers it means hundreds and thousands of patients per year. Patients with surgical site infection are 60% more likely to stay in an intensive care unit, 5 times more likely to readmit to the hospital, and have a double mortality rate compared to patients without surgical site infection. PPI does not only negate the effect of the surgery, but often puts the limb or even the patient's survival at risk. This necessitates constant search of new or improved ways to prevent and to treat PPI.

The intraoperative measures for prophylaxis of infection after total hip or knee replacement were substantiated, namely the effect of laminar clean air in the operating room. Introducing laminar clean air caused a decrease in total microbial count of the air by 60 times, and a decrease in particular matter $> 0.3 \mu\text{m}$ ($\text{PM}_{0.3}$) count by 7289 times ($p < 0.001$), which was associated with a shortening of mean postoperative hospital stay from 11.10 ± 4.01 to 8.64 ± 2.84 , a decrease in percentage of patients who spent over 14 days in hospital after surgery from 7.3% to 2.2%, and a decrease in infection rate after total hip or knee replacement from 3.3% to 1.1%.

Improved technique of two stage exchange arthroplasty of the hip using the designed antibiotic impregnated cement spacers made intraoperatively with the designed metallic molds was used in 49 patients with periprosthetic infection after total hip replacement. Infection eradication and good functional results were achieved in 89.5%. Mean Harris Hip Score at follow up was 87.18 ± 6.44 .

Improved technique of two stage knee revision using the designed articulating antibiotic impregnated cement spacers was used in 20 patients with infected total knee replacement. Infection control and good functional results were achieved in 84.2%. At follow up, mean Knee Injury and Osteoarthritis Outcome Score was 67.9 ± 6.2 , mean Knee Society Score was 72.8 ± 2.7 .

Keywords: two stage exchange arthroplasty, two stage revision, periprosthetic infection, infected TKA, infected THA, diagnosis, treatment, spacer, intraoperative prophylaxis, laminar clean air.

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