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BOOK OF ABSTRACTS

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Surgical Treatment of Distal Radius Malunion with Corrective Osteotomy Using a Volar Plating Technique – a Case Series Study

George VISCOPOLEANU[a], Bogdan VOICU[a], Bogdan SENDREA[a, b], **Alexandru DRAGHICI**[a], Sebastian SEDAN[a], Ioan Cristian STOICA[a, b]

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ABSTRACT

Objectives: *Distal radius fractures are one of the most common orthopedic injuries, with malunion being a frequent complication especially when conservative treatment (casting or orthosis immobilization) is used. The objective of this study is to determine the correction of the radial angles, radial length and clinical results after correction osteotomy using a volar approach and plating technique.*

Materials and methods: *This case series included 11 patients (eight females and three males) with a mean age of 52 years, who experienced malunion of the distal radius after failed conservative fracture treatment. They were operated in "Foisor" Clinical Hospital of Orthopaedics, Traumatology and Osteoarticular TB, Bucharest, Romania, between May 2018 and January 2022 by the same surgical team who performed corrective osteotomy using a volar approach and osteosynthesis with plate and screws. Radial inclination (RI), radial length (RL), volar tilt (VT) and translation (T) both in anteroposterior (AP) and lateral (L) plane were measured pre- and postoperatively. All patients presented with altered functionality of the wrist, visible deformity of the distal radius, difficulty and pain at mobilization. The reference intervals for the measured criteria were between 18°-28° for RI, 8-13 mm for RL, 25° to -5° for VT, and 0 mm was considered normal for T in both planes.*

Results and discussion: *The RI improved in 9/11 (81.8%) cases, RL in 10/11 (90.9%) cases and VT in 8/11 (72,7%) cases. Both RI and VT were stationary for two patients after surgery. Translation of the distal fragment was present in five patients in both planes, while in three patients in only one plane. All of them had an improved translation after surgery. Two patients had an associated distal ulna malunion, preventing radial reduction, for which Sauvé-Kapandji procedure was performed by creating a radioulnar arthrodesis and ulnar pseudarthrosis for restoring prono-supination. Iliac crest bone graft was used in three cases*

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with large bone stock defects. The mean time to bony union was eight weeks and all patients had clinical improvement in ease of movement, range of motion and pain reduction.

Conclusions: *Corrective osteotomy using a volar plating technique is a safe and effective procedure for the treatment of distal radius malunion with adequate restoration of bone morphology, good bony union rates and clinical outcome.*

Keywords: distal radius, osteotomy, volar plating, malunion.

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SECTION I – ORAL PRESENTATION
I.1. ORTHOPAEDICS
I.1.2. FOOT & ANKLE

Chronic Ankle Deformity Reconstruction for Diabetic Charcot Foot Sequelae

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ABSTRACT

Objectives: *To present our experience in the management of severe hindfoot deformities in diabetic patients, in the context of the current Romanian health system (without a multidisciplinary diabetic center and professional team treating such a complex and increasing pathology). Despite medical and non-medical difficulties, we tried to assemble a team and improve our surgical technique to act against amputation and provide a better quality of life to patients proposed for limb amputation.*

Method: *Between 2016-2022, we operated 25 patients with deformed unstable ankles as sequelae of an unrecognized and inappropriate treated Charcot diabetic foot. Five cases presented with osteomyelitis for which reconstruction was performed in two stages; most of the cases had superficial ulcers. All patients had comorbidities (obesity, diabetic nephropathy, retinopathy, chronic antiplatelet treatment). We performed reconstruction in one stage – TTC fusion or TC fusion with T2 Ankle Arthrodesis Nail (TM Stryker) or Phoenix rod (TM Zimmer Biomet) supplemented with a contoured anteromedial plate or HCS screws (6,5-7 mm) for more stability; in three cases, tantalum cones were used to replace the talus. In all cases, vancomycin-impregnated peroneal malleolus autografts were used.*

Results: *In the medium term the follow-up results were encouraging, following the specialized literature. No immediate septic complications were noted. Clinical and radiographic follow-up was difficult to manage because patients had to travel long distances to come to our clinic, having no specialist in the field.*

Conclusion: *Chronic ankle Charcot is a multiplanar deformity, highly prone to ulceration (due to neuropathy and ankle instability) and challenging for most of us (orthopedic surgeons). Recent generations of retrograde ankle nails allow compression in the arthrodesis/reconstruction area, but additional plates or screws were required to increase torsional rigidity in these over-weighted not-so-compliant patients. The lack of a dedicated medical team and a multidisciplinary center in the treatment of patients with diabetic foot does not make it impossible to save a pelvic limb from amputation.*

Keywords: ankle deformity, hindfoot, Charcot foot, osteomyelitis.

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SECTION I – ORAL PRESENTATION

I.1. ORTHOPAEDICS

I.1.2. FOOT & ANKLE

One Year Clinical and Radiological Outcomes of Hallux Valgus Surgery in Mild to Severe Cases Using Scarf Osteotomy

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ABSTRACT

Background: *Over 130 procedures for the surgical management of hallux valgus have been described in the literature. Among them, Scarf osteotomy is a relatively new technique for hallux valgus correction, which is described as a more stable double chevron diaphyseal first metatarsal osteotomy, allowing earlier recovery. The purpose of the present study was to evaluate radiographic and clinical outcomes in patients with mild-to-severe hallux valgus who underwent hallux valgus correction using Scarf osteotomy.*

Materials and methods: *We selected 21 patients with mild to severe symptomatic hallux valgus who underwent Scarf procedure correction in our clinical department of the County Clinical Hospital, Targu Mures, Romania, between January–June 2021. Clinical evaluation was assessed preoperatively as well as at three months and 12 months after surgery, using the American Orthopaedic Foot and Ankle Society (AOFAS) grading system and radiographic measurements of the hallux valgus angle (HVA) and intermetatarsal angle (IMA). Patient satisfaction was assessed using the visual analogue scale (VAS).*

Results: *Postoperatively, the mean AOFAS score was 89.20/100 points at the last follow-up (12 months) and VAS score 8.15/10. Furthermore, at the last follow-up we managed to calculate the mean correction of each angular value: HVA 13°, IMA 5°. In severe cases of hallux valgus, correction was not as expected by both the patient and surgeon, although osteotomies were healed and stable at three months follow-up.*

Conclusions: *Compared to other procedures, Scarf osteotomy is a versatile and powerful technique that allows patients to ambulate and return to work earlier. In combination with other several procedures, Scarf provides a satisfying and predictable result and a good cosmetic and functional outcome.*

Keywords: hallux valgus, scarf, osteotomy, outcomes.

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SECTION I – ORAL PRESENTATION

I.1. ORTHOPAEDICS
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Our Surgical Attitude in Foot and Ankle Deformities Caused by Charcot-Marie-Tooth Disease

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ABSTRACT

Objectives: *Introduction: Charcot-Marie-Tooth (CMT) disease is the combined effect of ankle-foot deformities, muscle weakness, and somatosensory impairments. Management involves both conservative and surgical treatment options; the challenge is intensified by the absence of treatment protocols that take into account the whole spectrum of foot and ankle CMT pathologies. The study aimed to evaluate the effect of foot surgery in a cohort of CMT patients.*

Materials and methods: *A group of 12 consecutive patients was operated during 2020 and 2021 by the same orthopedic team. All cases were adults and adolescents from skeletal maturity onwards, aged from 19 to 70 years old, with a female to male ratio 7 to 5. Preoperative evaluation included clinical, X-ray, and CT scans. Equinus of the first metatarsal bone associated to pes cavus was the most characteristic foot deformity. A wide range of surgical procedures was performed; we evaluated the clinical (pain, callosities, quality of posture) and radiological results. There was a marked variation in the surgical management: three cases required dorsiflexion osteotomy of the first metatarsal (MT1) + tendinous transfer, five cases of calcaneal osteotomies + MT1 + transfer, and four cases tibio-talo-calcaneal arthrodesis.*

Results: *Clinical follow-up was 6-12 months. A +90% bony union rate was achieved (one case required revision), with an average time to radiographic union of 2.3 months (range 1 to 4.5 months). The average time until full weight-bearing was 3.3 months (range 2 to 4 months). No major complications were reported. At the final follow-up visit, all patients were independently active and were able to wear conventional or personalized shoe gear.*

Discussion: *Surgical interventions have a similar aim of restoring the alignment of the forefoot to allow the hindfoot to keep a neutral position when the foot is loaded and involve bone realignment (osteotomies/arthrodesis) and muscle-tendon balancing (tendon transfers). It is not a standardized surgery, but surgery with principles to follow for balancing the foot while walking. The range of techniques extends from lateral and proximal displacement osteotomy for the calcaneus/dorsiflexion osteotomy of MT1 to hindfoot arthrodesis, accompanied by tendinous transfers (tibialis posterior transfer/long to short peroneal tenodesis).*

Conclusion: *Decision-making is crucial in the treatment of CMT foot: personalized operation plans according to different patients based on the comprehensive evaluation of their deformities. A combination of soft-tissue and bony procedures is required.*

Keywords: Charcot-Marie-Tooth, ankle deformities, foot surgery.

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SECTION I – ORAL PRESENTATION

I.1. ORTHOPAEDICS

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Case Report: the Use of a Megaprothesis as Salvage Surgery after Persistent Supracondylar Distal Femoral Periprosthetic Nonunion

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ABSTRACT

Objectives: *Periprosthetic supracondylar nonunions (PSN) following total knee arthroplasty (TKA) are severe complications for the knee functional outcome. The incidence of periprosthetic supracondylar fractures (PSF) after TKA is up to 24% in the geriatric population. Treatment options have been described from non-operative treatment and bracing to internal fixation by plating or retrograde nailing. We are reporting a case of a PSN with implant failure treated successfully by implanting a megaprothesis (MP) as a one stage salvage procedure.*

Materials and methods: *A 70-year-old female presented to "Foisor" Clinical Hospital of Orthopaedics, Traumatology and Osteoarticular TB, Bucharest, Romania, with left knee pain and inability to ambulate without support. One year and a half prior to consult, she underwent surgery elsewhere for a PSF using a locking compression plate (LCP). An accidental fall resulted in implant failure. Upon examination, her left knee was unstable, in a valgus position and with 20 degrees of flexion deformity. The Hospital for Special Surgery Knee-Rating Scale (HSS) was 38 and the visual analogue scale (VAS) was 7. No signs of infection were detected. Radiographs showed breakage of the LCP with a PSN. We extracted the broken LCP through the old approach. We performed an internal parapatellar arthrotomy, synovectomy, removed 15 cm of the distal femur containing the PSN and femoral component, the tibial component and the polyethylene insert. The femoral and tibial canals were prepared, trial implants were used to verify final implant size, patellar tracking and limb alignment and the final components of the MP (Stryker Global Modular Replacement System) were cemented and implanted.*

Results: *Knee mobilization began the first day after surgery, ambulation was started with the use of a walker and partial weight-bearing. Upon achieving 90 degrees of flexion, the patient was discharged seven days postoperatively with a favorable evolution; HSS increased to 86 points and VAS was 2 at discharge.*

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Clinical and radiological follow-up was as expected, the patient achieving pain-free weight-bearing without the use of crutches by three months postoperatively.

Conclusions: *PSN after TKA are a challenging complication and choosing between the use of internal fixation devices or a MP as a salvage procedure should be carefully assessed. Megaprothesis represent a viable implant option for non-oncologic geriatric patients since they allow early weight-bearing, faster discharge and a rapid recovery of knee function with less pain.*

Keywords: TKA, megaprothesis, salvage procedure, nonunion, geriatric patient.

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Comparison between Functional Results after Single-Stage High Tibial Osteotomy and Anterior Cruciate Ligament Reconstruction *Versus* Isolated Anterior Cruciate Ligament Reconstruction

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ABSTRACT

Objectives: *The purpose of the present study is to compare the mid- to long-term clinical results and radiological outcome in patients with symptomatic medial compartment osteoarthritis (OA) and deficiency of the anterior cruciate ligament (ACL) and to investigate the differences between isolated ACL reconstruction (ACLr) or combined single-stage high tibial osteotomy (HTO) and ACLr.*

Methods: *This prospective study included 28 patients with ACL deficiency and medial compartment OA. They were divided into two groups, A and B, based on their lower limb alignment, with group A undergoing the combined procedure and group B ACL repair alone. The preoperative osteoarthritis degree was measured using Kellgren-Lawrence grading system and there were no differences between the two groups. The ACL was reconstructed using an outside-in anatomic technique with hamstrings or bone-patellar tendon – bone autograft. High tibial osteotomy on full length lower limb radiographs was planned preoperatively and it was performed in single- or dual-plane manner depending on the posterior tibial slope. Clinician-reported outcomes (OA degree, IKDCo) and patient-reported outcomes (VAS scale, Tegner activity score, Lysholm score, IKDCs) were registered at six-, 12-, 24- and 36-month follow-ups.*

Results: *Baseline preoperative OA degree was the same between the study groups, whereas at 36-month follow-up an increase in 11% of patients was noted. IKDC objective improved after intervention, with more than 80% of patients graded A, but without any statistically significant difference between the two groups ($p=0.81$). VAS pain scores were reduced by 30 points on average in group A compared to only 22 in group B ($p <0.5$). All remaining clinical subjective outcomes (Tegner activity score, Lysholm score, IKDCs)*

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showed an improvement, the highest in IKDCs, and the least in Tegner activity score, with no statistically significant difference. There were no complications nor ACL re-ruptures.

Conclusion: *HTO and ACL reconstruction combined lead to good clinical outcomes with low complication rates and should be considered in patients with malalignment and sagittal knee laxity.*

Keywords: HTO, knee surgery, ACL reconstruction.

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Early Outcomes after Medial Unicompartmental Knee Arthroplasty

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ABSTRACT

Introduction: *Unicompartmental knee arthroplasty (UKA) is a surgical treatment for patients with advanced single-compartment osteoarthritis of the knee. It is less invasive than total knee arthroplasty (TKA) and enables faster recovery and earlier rehabilitation after surgery.*

Methods: *The study included seven patients who were diagnosed with medial compartment knee osteoarthritis and underwent UKA. Patients were evaluated clinically at different intervals using the Knee Society Score (KSS) and 36-Item Short Form Survey (SF-36).*

Results: *The KSS score was higher than 70 points in 6/7 of patients: 5/7 of all patients had resumed their normal activities with 5/7 reported no or slight limitation. The function KSS improved from 54.3 ± 12 to 70.2 ± 14.2 points postoperatively and the knee KSS from 37.2 ± 12.3 to 77 ± 17.0 points. Physical SF-36 improved from 42.1±7.75 to 66.5±21.2.*

Discussion and conclusion: *Unicompartmental knee arthroplasty can be an effective treatment for patients with isolated medial compartment osteoarthritis as it is less invasive than TKA, enables faster recovery and has a high success rate regarding patient outcomes.*

Keywords: UKA, osteoarthritis, KSS score.

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I.1. ORTHOPAEDICS
I.1.3. KNEE & LOWER LEG

Functional and Clinical Results after Total Knee Arthroplasty and Rehabilitation

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ABSTRACT

Background: *Total knee arthroplasty (TKA) is one of the most frequently performed surgical intervention in our clinic. In order to evaluate mobility after TKA, we use the Knee Society Score (KSS).*

Objective: *The objective of this study was to determine patient outcomes following TKA by using a KSS questionnaire.*

Materials and methods: *We conducted a study involving 68 patients, 28 males and 40 females, aged between 56 and 72 years (mean age 69.2 years), with knee arthrosis treated between 2020-2021 at the Orthopedic and Traumatology Clinic in Targu Mures. All 68 patients were assessed using a KSS questionnaire regarding symptoms, limitation of function and patients' perception of the knee condition and function.*

Results: *The KSS scoring was determined before surgery: in nine cases (13,2%) we obtained values between 55-65 (which means a fair outcome) and in 59 cases (86,8%) a score < 50 (which means a poor outcome); in the age group < 60 years we observed a fair outcome in 13 subjects aged between 60-65 years, with the majority of them (11 cases) having a poor outcome. After TKA we obtained values between 65-85 (a fair outcome) in 14 (20.58%) cases, a score between 84-94 (good outcome) in 42 (61.76%) cases and values between 94-100 (excellent outcome) in 12 (17.64%) cases. Nine cases in the age group > 65 years had a fair outcome, another 14 cases aged between 60-65 years had a good outcome, and the majority of cases (eight cases) in the age group < 60 years had an excellent outcome.*

Conclusions: *Rehabilitation after TKA was proven to be effective in improving patients' quality of life and we were able to demonstrate this by using a KSS questionnaire.*

Keywords: KSS questionnaire, total knee arthroplasty, rehabilitation.

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Patellar Management in Total Knee Arthroplasty – a Scoping View

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ABSTRACT

Introduction: *Total knee arthroplasty (TKA) is a common procedure for symptomatic degenerative diseases of the knee. Patellar management during TKA includes patellar resurfacing (PR), which might reduce rate of reoperation and anterior knee pain or non-resurfacing patella (NR), which might avoid complication related to PR and conserves patellar bone. This scoping view aims to review the most effective way of managing the patella during TKA.*

Materials and methods: *We analyzed 10 retrospective studies found in PubMed and* The Journal of Arthroplasty *databases. Inclusion criteria for this scoping view were as follows: year of publication 2018 to 2021, patellar resurfacing and non-resurfacing procedures during TKA, studies that provide information on different treatment outcomes.*

Results: *One year after procedure, TKA with or without PR has similar outcomes. After NR TKA, the patella's cartilage thickness decreased to less than half of its preoperative level in five years. In long-term follow-up, pain was the most common reason for revision in patella NR TKAs, while PR TKAs had a higher risk of revision by reason of aseptic loosening of tibial component or a damaged polyethylene insert. Some authors recommend the NR technique during TKA because of a higher risk of patellar fracture leading to PR and difficult management of resurfaced patella at revision.*

Conclusion: *Both NR and PR TKA could lead to clinical symptoms and revision requirement in long-term follow-up. This topic remains controversial and options for patellar management will need to be decided based on training, practice, and experience of each surgeon.*

Keywords: management of total knee arthroplasty, non-resurfacing patella, patellar resurfacing.

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I.1.3. KNEE & LOWER LEG

Phenotypes in Knee and Hip Osteoarthritis – Current Stage and Implications for the Development of New Therapeutic Strategies

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ABSTRACT

Introduction: *Recent evidence suggests that osteoarthritis (OA) is a heterogeneous multifaceted disease with multiple molecular and clinical phenotypes. Identifying OA phenotypes is an important research priority because it allows us to gain a better understanding of the pathways and mechanisms that may be involved in each distinct phenotype and to target them more effectively using a variety of preventive methods and treatment strategies.*

Objectives: *Examination of OA characteristics relevant to phenotyping, identification of clinical phenotypes and definition of their constitutive molecular endotypes.*

Materials and methods: *A laborious search in several databases, including Medline, Web of Science, Scopus, Elsevier and PubMed, was performed. Inclusion was limited to observational studies of people with symptomatic knee and hip OA who identified phenotypes based on any OA characteristics and assessed their association with OA. A descriptive synthesis of collected data was performed.*

Results: *Clinical, laboratory, imaging and etiological phenotypes were investigated. We have found evidence from several studies that suggested that pain sensitization, psychological distress, radiographic severity, body mass index, muscle strength, inflammation, and comorbidities were associated with clinically distinct phenotypes.*

Discussion: *It is very likely that there are several molecular and clinical phenotypes of OA, which are important to consider in OA research and clinics. A mechanical phenotype can cause several molecular mechanisms, such as a cartilage phenotype, which later becomes inflammatory, which can be especially important in an obese phenotype (a high-fat or high-fat phenotype). A better understanding of the underlying molecular endotypes will allow us to more clearly define clinical phenotypes and develop biomarker panels that can predict disease progression and determine which patients may have a better ability to repair joints. This can lead to significant savings in healthcare management, improved clinical trials, and more effective methods of developing OA drugs.*

Conclusion: *Identifying the phenotypic characteristics that can be considered for a comprehensive classification of the phenotype in future studies may be very important for the treatment of the disease. It has been theorized that treatment should be adapted to the phenotypes of patients with OA to optimize its effect.*

Keywords: osteoarthritis, phenotypes, endotypes, subgroup.

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SECTION I – ORAL PRESENTATION

I.1. ORTHOPAEDICS

I.1.3. KNEE & LOWER LEG

The Use of Tranexamic Acid in Anterior Cruciate Ligament Reconstruction Decreases Postoperative Bleeding and Pain Levels

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ABSTRACT

Objectives: *To determine the effects of tranexamic acid (TXA) usage in arthroscopic anterior cruciate ligament reconstruction (ACLR) through a systematic review of the current literature.*

Materials and methods: *The review was performed in accordance with the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines. Data collection was done independently by two of the authors. Information about the name of the first author, year of publication, study type, lot size, TXA protocol, type of used graft, drain usage, outcome measures and follow-up duration were extracted. After screening, only six randomized control trials (RCTs) with a total of 699 patients split between a TXA receiving group (n=362) and a control group (n=337) remained. Postoperative pain levels (VAS) were measured as either primary or secondary outcomes in all included studies. Also, the grade of hemarthrosis was an outcome measured and noted in five of the six selected studies. Postoperative knee function was scored through various patient-reported outcomes such as Lysholm and IKDC.*

Results: *Pain decrease was statistically significant during the first two postoperative weeks. Hemarthrosis decrease was statistically significant for the first two weeks in three studies, and after two weeks in one study. None of the selected studies showed statistically significant increases in patient-reported outcome scores.*

Conclusions: *The use of tranexamic acid in arthroscopic ACLR decreases postoperative blood loss and pain, which in turn leads to a reduced incidence of hemarthrosis and knee aspiration events.*

Keywords: tranexamic acid, anterior cruciate ligament reconstruction, postoperative pain, knee hemarthrosis.

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I.1.3. KNEE & LOWER LEG

Transarterial Periarticular Embolization for Knee Osteoarthritis: Early Experience

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ABSTRACT

Background: *Transarterial periarticular embolization (TAPE) of the genicular artery branches is amongst the new lines of treatment in knee osteoarthritis (OA), which seems a promising method for delaying invasive surgery in OA. In mild to moderate OA, major surgery can be postponed, patients with major risk pathologies having a real alternative.*

Aim: *to examine TAPE impact (clinical outcomes) in individuals with degenerative knee OA over a 12-month period.*

Methods: *A case series of 17 patients diagnosed with knee OA and treated with TAPE was included in the present study. Every patient was clinically evaluated at different timeframes according to the Western Ontario and McMaster Universities Arthritis Index, Knee Injury and Osteoarthritis Outcome Scores, and 36-Item Short Form Survey (WOMAC, KOOS, and SF-36);*

Results: *At the first follow-up (one month), KOOS and WOMAC improved from 46.6±13.2 (range 27.3-78.2) to 56.5±13.9 (range 32.3-78.4; p=0.023) and 49.5±13.2 (range 29.3-82.3) to 59.8±12.6 (range 39.3-83.5, p=0.018), respectively. Physical SF-36 has significantly improved from 42.1±7.75 (range 30.3-57.3) to 50.5±9.9 (range 35.6-67.9; p=0.032). No significant changes in scores at three, six, or twelve months after TAPE were observed.*

Conclusions: *Transarterial periarticular embolization provided early pain reduction and good clinical improvement in the quality of life for a consecutive small sample of Romanian patients with mild to severe knee OA.*

Keywords: periarticular embolization, knee OA, knee scores.

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SECTION I – ORAL PRESENTATION

I.1. ORTHOPAEDICS

I.1.3. KNEE & LOWER LEG

Unicompartimental Knee Arthroplasty – Our Experience During Pandemic Years

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ABSTRACT

Introduction: *Recent studies have indicated lower hospital stay, a lesser chance of infection, and higher patient preference for unicompartmental knee arthroplasty (UKA), especially in pandemic conditions. From January 2020 to December 2021, 55 consecutives medial UKAs were performed in our institution using cemented, mobile bearing implants with the same surgical technique – minimally invasive Microplasty ® (Zimmer Biomet). The criteria for implantation of a UKA in our institution were more flexible than previously reported accepted guidelines; we prospectively follow-up these patients mainly looking at their evaluation and specific complications.*

Results: *The status of the implant was followed for the initial group of Microplasty 90 patients (43 knees operated between 2018–2019) with a minimum two-year follow-up examination (including clinical and full weight bearing X-rays), compared to 55 cases operated in pandemics. There was a similar female to male ratio (3:1) in both groups. Patients in the first group were younger, with a mean age of 66* versus *69 (range 53–81 years old). The body mass index (BMI) was similar (29 ± 5.7). Before the operation, the mean hip-knee-ankle (HKA) axis was 164° to 175°. More significant preoperative angular deformities larger than 10 degrees of varus were in over 50% of clinical cases from the group. We were able to accurately position our components (within the radiological limits described in the literature), perform the surgery with a significant decrease in operative time (45 to 60 minutes), and fast-track the recovery of our patients (full weight bearing and flexion encouraged from second-day post-op). Faster recovery included an earlier return of straight leg raise function, less overall pain, shorter time requiring ambulatory aids, and a shorter hospital length of stay.*

Discussion and conclusion: *Precise surgical technique and clinical patient evaluation are critical for minimally invasive UKA (radiology must be accurate, MRI is not mandatory even if around 40% of patients had one). The presence of degenerative changes seen on MRI on the opposite compartment does not correlate to reduced function or activity. We began to gradually expand our indications for UKA – there were around 10% of cases with SPONK in each group. We did not find any reduction in the early recovery or benefits even when performing surgery in patients who were overweight, young, or had deformities that exceeded classic parameters. Contraindications still include ligamentous laxity, non-functional anterior cruciate ligament, moderate to severe degenerative arthritis in the lateral and/or patello-femoral compartment and suggestive inflammatory disease.*

Keywords: UKA, COVID-19 pandemics, minimally-invasive, hospital admission.

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I.1.4. MUSCULOSKELETAL TUMORS

Custom Made Tumoral Endoprosthesis in Paediatric Patients – Good but Far from Perfect Solution

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ABSTRACT

Objectives: *To present our experience and some lessons learned from implantation of non-standardized endoprosthesis in children after malignant tumour resection.*

Materials and methods: *Primary and revision surgery on six paediatric patients with bone sarcoma were performed at "Dr. Victor Gomoiu" Children's Hospital, Bucharest, Romania, between 2019 and 2022. In one patient, an internal hemipelvectomy followed by custom made endoprosthesis implantation was performed, in one patient a proximal humeral and partial scapula resection were followed by custom made endoprosthesis implantation, and in another one a massive intercalary tibial segment was replaced with a custom-made implant, while in three prepubescent patients, expandable custom-made endoprosthesis were implanted/revised after sarcoma resection of long bones.*

Results: *None of the described cases was free of shortcomings. The pelvic endoprosthesis had to be modified intraoperatively, the shoulder endoprosthesis needed to be revised due to a dislocation, and the tibial intercalary fragment proved to be difficult to implant. The expandable prostheses needed to be revised to either lengthen or replace some parts. One patient died secondary to varicella infection during chemotherapy. Despite all these drawbacks, five of six patients are functioning well at least one year after surgery and are satisfied after limb salvage surgery.*

Discussion and conclusions: *Custom made endoprosthesis are far from being the ultimate solution in oncologic patients. Technic difficulties, the need to revise the implant, the price and incomplete functional result may be discouraging when proposing such a solution to a patient, but limb salvage remains the main request of all patients.*

Keywords: custom made endoprosthesis, limb salvage, internal hemipelvectomy, expandable endoprosthesis, children.

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SECTION I – ORAL PRESENTATION

I.1. ORTHOPAEDICS

I.1.4. MUSCULOSKELETAL TUMORS

Primary Bone Lesions in Rosai-Dorfman Disease, a Rare Case and Diagnostic Challenge – Case Report and Literature Review

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ABSTRACT

Introduction: *Rosai-Dorfman disease (RDD), also known as sinus histiocytosis, is included in the group of rare diseases, characterized by proliferation and accumulation of histiocytes in the lymph nodes(lymphadenopathy), most often involving the cervical ganglion chains (nodal form). In RDD, bone involvement occurs rarely, in about 10% of cases, while primary bone involvement (extranodal form) is very rare, estimated at 2–8% of cases. Usually, they are solitary lesions, with multifocal primary bone manifestations being extremely rare. Histopathological analysis is of high value for a correct diagnosis.*

Materials and methods: *We present the case of a 42-year-old Caucasian woman initially treated for an osteolytic tumor formation in the right tibial shaft. An excisional biopsy with bone trepanation was performed, with the histopathological diagnosis being chronic inflammatory tissue. The evolution was atypical, with tumor growth, extraosseous, subcutaneous. A needle biopsy was repeated by our team, the result being similar to the original one. Tumor evolution as well as its radiological and imaging aspect (periosteal reaction, eroded and thin bone cortex) suggested a more aggressive disease, these findings being inconsistent with the biopsy result. Therefore, a new biopsy was performed, this time an excisional one.*

Results: *The histopathological result and immunohistochemistry indicated an RDD primary bone lesion. Based on this result, and corroborated with the available data from the literature, we initiated surgical treatment, curettage and grafting with bone substitute plus safety osteosynthesis with locked plaque, with the patient registering a favorable evolution.*

Conclusions: *RDD primary bone lesions are in fact an atypical manifestation of a rare disease. The correct diagnosis is very difficult due to the non-specific imaging aspect. Histopathological examination errors, especially in the case of needle biopsies, can lead to errors in diagnosis and treatment, with negative results for the patient.*

Keywords: Rosai–Dorfman disease, bone involvement, rare case, atypical evolution, difficult diagnostic.

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Controlling the Progression of Curvature in Children and Adolescent Idiopathic Scoliosis Following the Administration of Melatonin, Calcium and Vitamin D

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ABSTRACT

Objectives: *Idiopathic scoliosis severely affects a number of children. Their quality of life and development are also disturbed. Given the critical role that vitamin D, calcium and melatonin may play in both the onset and development of adolescent idiopathic scoliosis, this novel study aims to verify whether the administration of melatonin, vitamin D and calcium supplements to patients with idiopathic scoliosis and a Risser score of 0–3 will slow down or stop the progression of curvatures.*

Materials and methods: *In this prospective randomized case-control interventional study, the impact of using melatonin, calcium and vitamin D, respectively, on idiopathic scoliosis patients was analyzed. Every odd-numbered patient was included in the study group and every even-numbered one in the control group. Initially, when enrolling in the study, blood samples to measure the levels of vitamin D, calcium and melatonin were taken from all subjects of both groups; then, at six months and one year, only the study group repeated the blood tests, as seen in Figure 1. Study group received melatonin 1.5 mg/day, calcium 600 mg/day and vitamin D 2000 UI/day. Recovery treatment was done using physiotherapy (classic or Schroth therapy), while a Cobb angle of over 30° would also involve wearing a brace.*

Results: *A total of 51 patients met the required criteria, of which 26 were included in the study group and 25 in the control group. Stagnation of the disease was observed in the study group compared with the evolution of the disease in the control group ($p=6.81\times10-6$). The results were statistically significant ($p=6.85\times10-5$), showing an improvement for those who managed to correct their vitamin D deficiency.*

Discussion and conclusion: *Our preliminary results showed that these drugs positively affected the illness progression quantified by the spine curvature. Low vitamin D levels can predict a significant increase in Cobb angle. Patients with idiopathic scoliosis may benefit from a novel treatment by supplementation with vitamin D, calcium, and melatonin.*

Keywords: adolescent idiopathic scoliosis, vitamin D, melatonin, calcium.

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I.1. ORTHOPAEDICS

I.1.5. PAEDIATRIC ORTHOPAEDICS

Flexible Flatfoot Patients Today, Sports Invalids Tomorrow?

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ABSTRACT

Objectives: *Flexible flatfoot or pes planovalgus represents one of the most commonly seen deformities of the lower limb, affecting both children and adults. Clinical aspects of flexible flatfoot consist of a collapsed medial arch, forefoot abduction, medial rotation and plantar flexion of the talus. Our objectives were to track the pediatric patients with symptomatic flexible flatfoot and check if the physical condition, radiological measurements and aesthetical aspect of the foot were improved by a minimally invasive surgical approach, while painful gait and fatigue were removed.*

Methods: *We set out to conduct a prospective case-control study on patients with symptomatic flexible flatfeet operated by arthroereisis surgery who were compared to a normal feet group of children age- and sex-matched (control group). The minimum follow-up time was two years. For the working protocol we followed patient's history, clinical and radiological examination, a life quality staging questionnaire and a sport trial consisting of a 100 m sprint run. All criteria were checked both preoperatively and six months postoperatively.*

Results: *Postoperative assessment showed an absolute correction of the radiological angles ($p<0.005$) and enhanced the aspect of the foot. The quality of life improved postoperatively ($p=0.18$) and was not different from the control group. The median running time improved by 2.25 s ($p<0.0001$) postoperatively and got closer to that of the control group (22.30 s* versus *20.94 s, $p=0.01$).*

Conclusions: *Flatfoot in children and adolescents may be a condition in which the quality of life and sports performance are decreased compared to healthy children. Arthroereisis is a minimally invasive surgical procedure with a short recovery time and a short period of resumption of sports activities, which can be useful in certain types of flexible flatfeet, curing symptoms such as painful gait and fatigue or improving the aesthetical aspect.*

Keywords: flat foot, arthroereisis, sports.

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Obstetric Fractures in Cesarean Delivery and Risk Factors as Evaluated by Pediatric Orthopaedic Surgeons

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ABSTRACT

Objectives: *Obstetric fractures usually occur after complicated births and are sent to pediatric orthopedics for treatment and follow-up. Clavicle fractures represent the most commonly encountered orthopedic birth injuries, involving approximately 0.2% to 3.5% of births.*

Hypotheses: *Cesarean delivery, elective or necessary, along with the type of presentation, may play a determinant role in the etiology of obstetrical fractures.*

Materials and methods: *We chose to do a retrospective study to determine the possible risk factors for this type of injury that may manifest in either delivery. We aimed to deepen our knowledge in order to have a better prediction and management of this condition. Collected data included parity, gestity, type of delivery, presentation, shoulder dystocia, type of fracture, birth weight, and APGAR score.*

Results and discussion: *We followed 136 patients with Allman type I clavicle fracture, of whom 32 also had brachial plexus birth palsy type 1 (Duchenne-Erb). Natural birth with a pelvic presentation imposes a relative risk of 6.2 of associated pathologies compared to cranial presentation. Cesarean delivery and cranial presentation increase the risk of related pathologies by 5.04 compared to natural birth. Statistically, pelvic presentation is 5.54 times more likely to develop related pathologies than cranial presentation. This logistic regression model shows that multiparity decreases the risk of birth injuries by 84% compared to primiparity for a particular birth weight and a specific type of delivery. The logistic regression model based on birth weight and type of delivery varies according to the confidence intervals that we choose and builds a predictive modeling.*

Conclusion: *Cesarean delivery carries risks for the newborn and should be performed only when necessary. Our predictive modeling in obstetrics in third-trimester evaluations may statistically predict risks of birth complications such as fracture and brachial plexus birth palsy.*

Keywords: obstetric fractures, cesarean delivery, predictive modeling.

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Quality of Life Evaluation Using SRS-30 Score for Operated Children and Adolescent Idiopathic Scoliosis

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ABSTRACT

Objectives: *Adolescent idiopathic scoliosis (AIS) is a disorder with a significant impact on health and self-image. This spinal deformity can affect between 2% and 4% of the adolescent population and may alter one's quality of life. This study aims to assess the patient outcome, satisfaction and quality of life following surgical treatment by a posterior approach using a hybrid technique of posterior vertebral fusion and segmental instrumentation with pedicle screws, laminar hooks, and two rods, using the SRS-30 questionnaire.*

Materials and methods: *A number of 49 children and adolescent patients with idiopathic scoliosis who had surgery were included in this study. They thoroughly completed the SRS-30 questionnaire before and after surgery and collected data were further analysed. Correlations between test results and imagistic data (pre- and postoperative Cobb angle, correction rate of Cobb angle, number of instrumented spinal segments, and number of pedicle screws/laminar hooks used in the surgery) were performed.*

Results and discussions: *Our results showed that 87.76% of patients were girls, and the mean age at surgery was 14.83 years. Postoperatively, the Cobb angle improved significantly ($p < 0.0001$). The questionnaire domain "Satisfaction with management" has dramatically improved postoperatively by an average value of 13.65 points (91% out of the maximum score). The average postoperative test score was 125.1 points. Statistically significant correlations were found between the correction rate and SRS-30 score improvement ($p < 0.001$), in total as well as* per *each domain of the survey, respectively. Comparing the questionnaire domains, "Self-image" was positively correlated with "Satisfaction with management" ($p < 0.0001$).*

Conclusions: *Better correction rate led to higher values of SRS-30 score. Additionally, we noted that the younger the age at surgery, the higher the score. The number of instrumented spinal segments does not alter the quality of life. Overall, self-image is the most crucial factor influencing patient satisfaction after surgical treatment.*

Keywords: adolescent idiopathic scoliosis, surgery, quality of life.

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Recurrent Patellar Dislocation: MPFL Reconstruction *vs.* Lateral Release and Medial Imbrication

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ABSTRACT

Introduction: *Patellofemoral instability is a frequent cause of knee pathology affecting the quality of life among the pediatric population. Conservative treatment usually consists of brace or splint immobilization, resulting in longer rehabilitation periods as well as a recurrence rate of up to 44%.*

Objective: *The present study aimed to assess the quality of life among children who have undergone surgical treatment for patellar dislocation.*

Materials and methods: *We present a prospective cohort study on patients who had undergone surgical management using the lateral release and medial imbrication approach (LRMI) or medial patellofemoral ligament reconstruction (MPFL-R). Patients were randomly assigned to a surgical group. The quality of life was assessed before and after surgery using the Pediatric International Knee Documentation Committee form (Pedi-IKDC). Postoperative scarring was evaluated using The Stony Brook Scar Evaluation Scale.*

Results: *One hundred and eight patients were selected and grouped according to the type of procedure. The average patient age at diagnosis of patellar dislocation was 13.3 ± 2 years. Most patients (96%) had at least two more luxation episodes between diagnosis and surgery. Before surgery, the two groups had similar mean Pedi-IKDC scores (41.4 MPFL-R* vs. *39.4 LRMI p = 0.314). The MPFL-R technique showed promising outcomes. When comparing the two surgical groups, there was a significant difference in favor of MPFL-R group (MPFL-R 77.71 points* vs. *LRMI 59.74 points, p < 0.0001–95% CI (11.22–24.72)). Using the Stony Brook Scar Evaluation Scale, a significant difference in scar quality in favor of MPFL-R was observed (4.5 MPFL-R* vs. *2.77 LRMI p = 0.002).*

Discussion and conclusions: *MPFL-R increased patients' quality of life to a greater extent than LRMI. MPFL-R interventions are minimally invasive, reduce postoperative recovery time and increase the quality of life. This study provides further evidence for the recommendation of MPFL-R as the gold standard for patellofemoral instability.*

Keywords: recurrent patellar dislocation, MPFL, pediatric orthopedics.

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SECTION I – ORAL PRESENTATION

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The Use and Complications of Halo Gravity Traction in Children with Scoliosis

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ABSTRACT

Introduction and aim: *Scoliosis is one of the most frequently encountered spine deformities in children. The purpose of this study is to assess the complications that arise during halo gravity traction and to evaluate the correction of scoliotic curves under traction.*

Materials and methods: *We conducted a single centre prospective study on 19 paediatric patients with scoliosis who were admitted between 2019–2022. They were suffering from adolescent or juvenile idiopathic scoliosis and had the main curve with a Cobb angle larger than 65 degrees.*

Results: *Several complications were found in our study group, including cervical pain, back pain, neurological symptoms, headache, vertigo, pin pain, pin infection and pin displacement. Complications were encountered in 94.7% of patients, with the most frequently seen being cervical pain (89.5% of all cases), followed by back pain (36.8% of cases), while just 5.3% of cases had experienced vertigo or pin displacement.*

Discussion and conclusions: *Our data suggests that even though complications such as cervical pain, back pain, neurological symptoms, pin pain and pin infection are frequent, they can be safely addressed with proper patient monitoring. The use of various mobility devices reduces patient discomfort and makes the method a safe mean of obtaining up to 50% of curve correction in certain cases.*

Keywords: scoliosis, halo gravity traction, complications, spine deformities.

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I.1.6. PELVIS, HIP & FEMUR

Acetabular Revision using Trabecular Metal Augments for Paprosky type IIIA and IIIB Defects

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ABSTRACT

Objectives: *Management of acetabular bony defects is a challenge in revision hip arthroplasty. Modular augment shells made of trabecular metal (tantalum) ensure good coverage and mechanical support for the uncemented hemispherical cups. Short and medium follow-up results show very good results using tantalum augments in acetabular defects types IIIA and IIIB.*

Materials and methods: *We studied retrospectively 35 cases with acetabular defects type IIIA and IIIB, with an average follow-up of 14 months (between six and 24 months). In 24 cases, the revision applied only to the acetabular component and in the remaining 11 ones, the whole system was revised by femurotomy. In three Paprosky type IIIA, we used both a trabecular metal revision shell and an augment and in 12 cases Paprosky type IIIB, we used two augments concomitantly. The clinical results were appreciated using Harris score, considering good results to be if the score improved by a minimum of 30 points at six months. Postoperative X-ray measurements showed a stable cup positioning and lack of arthroplasty failure at follow-up. There was no reintervention in the selected cases.*

Results: *In all cases, there was an improvement of Harris score by at least 30 points, patients regained mobility and there was a significant decrease in pain levels. At the last follow-up X-ray, there was no implant failure noticed or any change in the acetabular component positioning; also, there were no osteolysis signs and the cup/augment interface with the bone.*

Conclusions: *Trabecular metal augments are a safe option in total hip arthroplasty revision surgery with Paprosky type IIIA or IIIB acetabular defects. Modular construct availability and the stable fixation that the trabecular metal creates on the remaining bone are the main advantages. Short and medium follow-up results are good, with a significant decrease in pain levels and absence of implant failure.*

Keywords: trabecular metal, augments, hip revision surgery, acetabular defect.

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Activity Dependent Aspects of Weight-bearing Symmetry Following Total Hip Arthroplasty

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ABSTRACT

Introduction: *Total hip arthroplasty (THA) is one of the most effective procedures for the treatment of end stage osteoarthritis (OA) regarding pain relief and improvement of patients' physical abilities. Leading to THA, individuals with OA develop behaviours to mitigate pain during their daily routines. This meant that, in most cases, patients put less weight on the affected limb, thus resulting in a load asymmetry and often a positive Trendelenburg test.*

Objective: *Our aim was to characterize ipsilateral loads and weight-bearing symmetry (WBS) in patients who underwent THA, during their daily routines, using insoles.*

Materials and methods: *We observed a total of 23 patients who underwent THA, during pre- and postoperative follow-ups in our department, as well as 23 healthy individuals. Ipsilateral loading and WBS during their daily activities were measured with insoles in both the control group and patients who underwent THA. Our study group was exposed to four measurements, 1-3 weeks preoperatively, the week following the operation, 4-6 weeks after THA and 4-6 months after surgery, healthy subjects were measured only once. Activities observed included standing in a comfortable manner, standing straight, stand-to-sit (StS) and walking.*

Results: *Improvement was observed in the study group across all observed activities within the week following surgery. Ipsilateral loading and WBS of patients were comparable to those of a healthy person during the final measurement, except being ipsilateral loading while walking during the initial and terminal double-leg support stance.*

Discussion and conclusion: *Insole measurements allowed us to quantify the ipsilateral loads and WBS deficit during daily activities, differentiating those who underwent THA from those who did not. We stress the importance of regular follow-ups for the accurate assessment of improvement among those who underwent THA. With correct post-surgery kinetotherapy, most patients who underwent THA showed similar results to those who were healthy.*

Keywords: daily routine, ipsilateral loads, insoles, total hip arthroplasty, weight-bearing symmetry.

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Cementless Total Hip Arthroplasty – Early Clinical Results

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ABSTRACT

Background: *Hip arthritis is one of most disabling orthopedic conditions, which significantly decreases patients' quality of life. It causes severe chronic pain, with lack of motion, thus limiting patients' activity. Total hip arthroplasty (THA) is the most effective treatment for this disease.*

Objective: *Assessment of early clinical results activity level and quality of life after THA.*

Materials and methods: *We followed 97 patients who had undergone unilateral uncemented THA in the Orthopedic and Traumatology Clinic of Targu Mures. In order to quantify patients' clinical assessment, we used Harris Hip Score for symptoms, functional limitations in daily activities and intense activities, but also each patient's perception of the hip condition and occupational activity levels.*

Results: *The use of Harris Hip Scoring Scale preoperatively revealed a significant deficiency of flexion, abduction, external rotation and adduction between the healthy and affected hip. Before THA, the score was <70 (poor) in 18 (19.5%) cases and between 70-79 (fair) in 79 (80.5%) cases. After uncemented THA we obtained values between 70-79 (fair outcome) in 23 (22.3%) cases, 80-89 (good outcome) in 41 (39.7%) cases and 90-100 (excellent outcome) in 33 (38%) cases.*

Conclusions: *Using Harris Hip Score, we demonstrated an improvement in patients' quality of life postoperatively. A physical therapy program is necessary after THA.*

Keywords: Harris hip score, total hip arthroplasty, quality of life.

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SECTION I – ORAL PRESENTATION

I.1. ORTHOPAEDICS

I.1.6. PELVIS, HIP & FEMUR

Minimally Invasive Approaches in Total Hip Arthroplasty

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ABSTRACT

Objectives: *The anterolateral approach provides a number of advantages in comparison with the direct lateral approach to the hip. The amount of muscle trauma and bone loss is inferior to other standard approaches (direct lateral or posterior). Short and medium follow-up results show very good results in regards to total blood loss, postoperative pain and recovery, with better scores at the three-month threshold.*

Materials and methods: *We retrospectively reviewed 50 cases who had been operated using the anterolateral approach and 50 cases using the direct lateral approach. Clinical results were assessed using the Harris hip score, considering good results when the anterolateral approach scored better than direct lateral approach by a minimum of 15 points. Pain medication intake has been also quantified postoperatively.*

Results: *Immediate full weight bearing was initiated for patients undergoing an anterolateral approach to the hip. Postoperative hemorrhage was decreased, with 85% of patients not requiring any blood transfusion at all. There was no opioid usage in the group with anterolateral approach due to the decreased postoperative pain. In all cases, the Harris hip score was improved by at least 15 points for the patients who underwent the anterolateral procedure in the first three months after surgery in regards to their active abduction of the limb, ability to get out of bed by themselves and return to driving a car.*

Discussion and conclusions: *The minimally invasive anterolateral approach has numerous advantages in place of other muscle cutting approaches to the hip. There is a fast recovery time, with better early abductor muscle function. No intraoperative X-rays are necessary and the acetabulum and femur are directly visualized. The short and medium follow-up results are good, with an improvement of functional hip scores and fast recovery.*

Keywords: hip arthroplasty, minimally invasive, joint replacement, THA.

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SECTION I – ORAL PRESENTATION

I.1. ORTHOPAEDICS

I.1.6. PELVIS, HIP & FEMUR

Preoperative Expectation and Postoperative Satisfaction after Primary Uncemented Total Hip Arthroplasty

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ABSTRACT

Background: *Total hip arthroplasty (THA) is a major surgical intervention for patients with primary or secondary osteoarthritis. It is a surgical procedure aimed at relieving the pain that severely limits the functional activity of patients who showed unresponsiveness to other treatments and interventions to restore hip biomechanics. Despite a continuing improvement in surgical techniques and postoperative management, there is still a certain number of patients with low satisfaction after THA.*

Objective: *The objective of the present study is to evaluate the satisfaction level among patients who underwent THA by analysing the link between preoperative expectations, postoperative level of satisfaction and self-reported outcomes regarding pain and function after primary uncemented THA.*

Materials and methods: *We selected 148 patients aged 51-68 years who underwent unilateral uncemented THA between March 2020 and January 2021 from the Clinic of Orthopaedics and Traumatology in Targu Mures. They were followed up preoperatively as well as at three months and one year after surgery. Pre- and postoperative symptoms and functional status were assessed using the Harris hip score and the SF-12 questionnaire.*

Results: *Out of the total number of 148 unilateral uncemented THA, 94% of patients showed satisfaction one year after the procedure, with 87% of them being satisfied with pain relief and 91% with their physical function improvement. There were no variations of the postoperative Harris hip scores regarding the level of expectation.*

Conclusions: *Even if a vast majority of patients were satisfied after THA, there were still a minority who expressed dissatisfaction.*

Keywords: primary uncemented total hip arthroplasty, expectation, satisfaction.

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SECTION I – ORAL PRESENTATION

I.1. ORTHOPAEDICS

I.1.6. PELVIS, HIP & FEMUR

Rapidly Progressive Osteoarthritis of the Hip – Scoping View of a Hard Diagnosed Disease

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ABSTRACT

Background: *Rapidly progressive osteoarthritis of the hip (RPOH) has a low incidence, its onset being similar with that of other hip pathologies, thus being easily overlooked amongst hip pathologies which have arthritic-like symptoms. The most widely accepted diagnosis criteria of RPOH include joint space loss occurring with greater rate than 2 mm per year or more than 50% of joint space loss in one year. Rapidly progressive osteoarthritis of the hip is classified into two types depending on the absence (type 1) or presence (type 2) of femoral head degeneration.*

Objectives: *To highlight specific characteristics and markers of RPOH in order to differentiate it from other pathologies. One way to distinguish RPOH from the other disorders is through clinical, radiographic and MRI findings. Specific serum investigations such as the concentration of matrix metalloproteinase (MMP)-3, tartrate-resistant acid phosphatase-5b (TRACP-5b) and bone alkaline phosphatase (BAP) may help not only diagnose RPOH but also assess the stages of the disease.*

Materials and methods: *We searched PubMed and Google scholar databases with a time frame from 2010 to 2022. Relevant titles and abstracts were carefully evaluated for inclusion in this scoping literature review.*

Results: *In the early stage of disease, linear hypointense lesions were a characteristic finding on MRI. They were observed in the weight-bearing portion of the femoral head parallel to the articular surface. Lesions are likely to represent subchondral fractures which might be primary cause of the disease. In late stages, edema occurs in the great trochanter area and surrounding tissue. Radiographic occurrence of RPOH is made most often detected in late stages, when patients have a major femoral head destruction with a flat aspect, absence of articular cartilage, subchondral bone destruction and signs of joint effusion. Concentrations of MMP-3, TRACP-5b and BAP were found to be higher than normal in all cases. MMP-3 was higher in the RPOH type 1, which can be an early predictor factor for femoral head destruction. TRACP-5b and BAP were significantly higher in RPOH type 2 than type 1 and other similar pathologies. Other results include gender distribution F:M 10: dead bone – secondary in comparison with hip osteonecrosis and no other joint involved.*

Conclusions: *Rapidly progressive osteoarthritis of the hip is easy to overlook, especially in early stages if appropriate paraclinical examinations are not performed. Cases of RPOH can undoubtedly be properly diagnosed if a proper and methodical evaluation is followed.*

Keywords: dly progressive osteoarthritis of the hip, RPOH, osteoarthritis.

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SECTION I – ORAL PRESENTATION

I.1. ORTHOPAEDICS

I.1.6. PELVIS, HIP & FEMUR

Robotic Total Knee Replacement in Romania

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ABSTRACT

Objectives: *Robotic total knee replacement is designed to decrease the mistakes associated with bone cuts and prosthesis positioning and alignment. It has better surgical and clinical patient outcomes than conventional total knee arthroplasty because of an ideal positioning of the implant, intraoperative ligament balancing as well as adequate protection of the surrounding soft tissue structures.*

Materials and methods: *We conducted a retrospective study of 50 cases during two and a half years (due to pandemic restrictions), with an average follow-up of 10 months (between six and 22 months). The time for different steps of surgery (such as surgical tray set-up and bone registration) was quantified. Clinical results were assessed using KOOS, Oxford Knee and SF-36 scores. There were two cases converted to classical measuring after decalibration of the arrays.*

Results: *In all cases, there was a decrease in the overall operating time, instrument, robotic device and surgical tray set-up, bone registration, number of inpatient physiotherapy sessions and time to perform a straight leg raise. The maximum knee flexion at discharge was increased by an average of 15°.*

Conclusions: *Robotic assisted total knee arthroplasty is a viable option when it comes to better stability and accuracy of the implant positioning. It provides better reproducibility and predictability of the surgical steps. There is also a decrease in postoperative pain, with a faster recovery time for the patient.*

Keywords: total knee arthroplasty, robotic assisted surgery, alignment, MAKO.

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SECTION I – ORAL PRESENTATION

I.1. ORTHOPAEDICS

I.1.7. SHOULDER & UPPER ARM

Pectoralis Major Tear

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ABSTRACT

Introduction: *Ruptures of the pectoralis major muscle became more common due to the increased interest of young population in gym and power sports weight training. It most commonly occurs during bench pressing and is felt as a painful "pop" at the front of the shoulder and chest. Region deformity, bruising and swelling are usual findings. Unfortunately, diagnosis and treatment can be delayed due to the rarity of this pathology.*

Objectives: *The goal of the present paper is to highlight the clinical presentation, radiological findings, method of treatment, rehab and early/late results.*

Materials and methods: *Between June 2020 and May 2022 we treated five patients with pectoralis major tear. There were two recent tears (< three months) and three chronic tears. There were three heavy lifters, one skydiver and one professional mountain climber. We used the same surgical technique, whipstitching the torn part of the pectoralis major and fixing it to the humerus with three Pec Buttons, followed by a six-week sling immobilization and specific rehab.*

Results: *No early or late complications (regarding skin incision and fixation or humeral fracture) were encountered. All patients returned to their preoperative level of sport.*

Discussion and conclusions: *Pectoralis major tear is a rare condition, which can be missed by untrained orthopaedic surgeons or emergency physicians, leading to delayed diagnosis and repair. The surgical technique described here is rewarding and all our patients returned to their previous level of sport, without any complications. For these reasons, we believe it is important to raise awareness about this pathology in order to prevent missed or delayed diagnosis and repair.*

Keywords: pectoralis major, tear, shoulder, sports trauma.

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SECTION I – ORAL PRESENTATION

I.1. ORTHOPAEDICS

I.1.8. SPINE

Comparison between Classic Discectomy and Tubular Microdiscectomy in Surgical Management of Lumbar disc Herniation

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ABSTRACT

Objectives: *Multiple surgical techniques are used to treat lumbar disc herniation, each of them presenting pros and cons. The objective of our study was to compare the clinical results and effectiveness of lumbar microdiscectomy carried out using a tubular retractor system (TD) with the classic incisional approach discectomy (CD) for surgical treatment of symptomatic lumbar disc herniation.*

Materials and methods: *The present study included 22 patients with lumbar disc herniation operated in "Foișor" Clinical Hospital of Orthopaedics, Traumatology and Osteoarticular TB, Bucharest, Romania, between March 2018 and July 2022. In all cases, surgery was carried out at the L4-L5 or L5-S1 levels. Ten patients were operated using the classical discectomy technique, while the remaining 12 ones underwent tubular retractor microdiscectomy. The analysed data included demographics, affected level, length of hospital stay, duration of surgery, preoperative and three-month postoperative visual analogue scale (VAS) leg pain and Oswestry disability index (ODI) scores as well as intra- and postoperative complications and reoperation rate.*

Results: *The ODI and VAS scores for leg pain have significantly improved in both groups, with slightly better results being noted in the TD group. The length of hospital stay was much shorter in the TD group with a mean of 3.5 (3-5) days vs 5.3 (4-8) days for the CD group. Duration of surgery was similar between the groups, with an average of 97 minutes (60-120). Two patients from the CD group had complications: one of them had early disc reherniation that was managed with repeat open discectomy and fusion, and the other one, postoperative haematoma that was managed conservatively. There were no intraoperative complications in any of the two groups.*

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Discussion and conclusions: *In conclusion, tubular microdiscectomy represents a safe and effective technique for the treatment of lumbar disc herniation. It has several advantages such as shorter hospital stay, faster recovery, aesthetic advantage of a small incision and less scar tissue in case of subsequent reoperation. However, it requires undergoing a steeper learning curve; therefore, surgeons should be comfortable with open techniques before starting to practice tubular discectomy.*

Keywords: disc herniation, tubular microdiscectomy, hospital stay.

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Endoscopic Percutaneous Transforaminal Discectomy Related to Lumbar Disc Herniation

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ABSTRACT

Introduction: *Transforaminal percutaneous endoscopic discectomy (DEPT) is an innovative method in the treatment of lumbar disc herniations. It involves a lateral approach under local anesthesia, with a minimally invasive incision, and endoscopic visualization allows safe removal and early rehabilitation.*

Objective: *To analyse the efficiency of surgical treatment in patients with lumbar disc herniation using the transforaminal percutaneous endoscopic method.*

Materials and methods: *This was a prospective study of 55 patients (39 males, 16 females) with different localizations of lumbar disc herniation: level L5 was involved in 25 of them, level L4 in 28 subjects, level L3 in two patients; central, paracentral, intraforaminal extraforaminal herniations were found in nine (16.36%), 18 (32.72%), 26 (47.27%) and two (3.63%) cases, respectively, using the following exclusion criteria: spondylolisthesis, lumbar spine fracture, spinal stenosis; spinal tumor, active infection in the surgical area. Patients' age range was 20–62 years, with a mean age of 38 years. Follow-up at one month, 3, 6 and 12 months after DEPT was done according to VAS and MacNab scales.*

Results and discussion: *The findings of our study showed that the MacNab score was excellent in 47 (85.45%) cases, good in seven (12.72%) cases, and satisfactory in one (1.81%) case. The preoperative mean was VAS 6.71±1.52, postoperative mean VAS 3.1±1.3 and rebound 2.2±1.3 ($P < 0.0001$). Regarding complications, recurrence occurred in two (3.63%) patients, but there were no cases of conversion to open surgery, infection or discitis. The operating time of minimally invasive stages with removal of the hernia by endoscope under local anesthesia with intravenous sedation was 58±4.6 min, and the mean intraoperative hemorrhage 9±1.2 mL (soaked gauze pieces). After surgery, patients were transferred in ICU, with average verticalization in 2.2 ± 0.5 hours. Same-day or next-day discharge after surgery was allowed, with resuming*

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normal activity in 7-10 days postoperatively. Transforaminal percutaneous endoscopic discectomy can be used in various pathologies with stabilization instruments.

Conclusion: *Transforaminal percutaneous endoscopic discectomy is an alternative method to open surgery with multiple benefits. It allows a safe and complete removal of lumbar disc herniation by endoscopic visualization.*

Keywords: lumbar disc herniation, endoscopic surgery, percutaneous, transforaminal endoscopy.

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SECTION I – ORAL PRESENTATION
I.1. ORTHOPAEDICS
I.1.8. SPINE

Scoliosis Surgery in Children with Spinal Muscular Atrophy – a Case Series Report

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ABSTRACT

Objectives: *To present our first experience with the surgical treatment of scoliosis in children with spinal muscular atrophy.*

Materials and methods: *Between 2019 and 2022, six children with spinal muscular atrophy (SMA) were operated for scoliosis in our hospital. One patient is independent walker, one patient is independent seater, four patients are chair bonded. Spinal motor evoked potential was used in all cases.*

Results: *Posterior spinal fusion was performed in all cases, accompanied by lumbopelvic fixation in four patients. Four girls and two boys with SMA type II or III, aged between 10 and 15 years, underwent spinal surgery for scoliosis. The preoperative Cobb angle was between 50 and 110 degrees. The postoperative Cobb angle ranged from 5 to 80 degrees. The follow-up period ranged between 2 and 12 months. None of our patients lost the preoperative motor skills.*

Discussion and conclusions: *The administration of Nursineren changed the prognostic of SMA patients, the role of surgery being to better posture the patient or to stop the scoliosis progression in most cases. Scoliosis surgery is challenging due to the cardiorespiratory fragility of those patients. The results in our series are most influenced by the late presentation of patients. Most of these patients should be operated before the Cobb angle reaches the limit of 35 degrees.*

Keywords: spinal muscular atrophy, scoliosis, lumbopelvic fixation.

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SECTION I – ORAL PRESENTATION

I.1. ORTHOPAEDICS

I.1.9. VARIA

Automated Knee MR Images Segmentation of Menisci: Data from the District Hospital of Alba Iulia, Romania

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ABSTRACT

Objectives: *Meniscus lesions are one of the most frequent pathologies in all age groups of the population. Rapid detection and diagnosis are a must, and state-of-the-art artificial intelligence techniques are promising tools to achieve such goals. In this paper, we evaluated an automated meniscus semantic segmentation deep learning model on MR image data gathered between 2016–2020 from the District Hospital of Alba Iulia, Romania.*

Methods: *We used a free interactive software tool, ITK-SNAP [1], to view and manipulate image volumes of MRIs, namely sagittal-fat-suppressed proton-density fast-spin-echo (FS PD-FSE) images of the knee, and to label anatomical structures of menisci using a combination of manual and user-guided automatic segmentation. The initial dataset of 104 images of menisci and the corresponding 104 labels of menisci masks have been used to train a 2D U-Net [2] type convolutional neural network. The dataset has been divided into subsets for training (84 images), testing (10 images) and validation (10 images). Before training, the dataset has been augmented with various image processing techniques such as image rotation, filtering, flipping, and shifting, so the final dataset used for training was 3 655 images. Model generalization properties were determined by performing multiple iterations of stratified 10-fold cross-validation whilst observing the area under the curve (AUC) score. Automatic segmentations and estimated parameters were evaluated for accuracy using manual delineations of the menisci.*

Results: *Sagittal plane knee joint MR data were retrospectively gathered at the District Hospital of Alba Iulia, Romania, between 2016 and 2020. After preprocessing all data, the resulting dataset consisted of 3 655 usable labeled sequences of menisci. The 85% accuracy of the training was a promising result for*

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further investigation of the automated detection and classification of menisci within the entire MR image of the knee.

Discussion and conclusions: *We have presented a fast automated model for the semantic segmentation of menisci in knee MRIs. Our approach has the potential to accelerate the diagnosis of meniscus pathology. Experimental results suggest a high potential for clinical application of computer-aided decision-making for detecting both meniscus injuries and complete ruptures. In this respect, our automated method has successfully segmented the menisci and detected meaningful morphological differences in the structure of the menisci. Our approach will facilitate further analyses of the menisci for the development of automated recommendation systems for diagnosis and treatment.*

Keywords: knee joint MRI, computer-aided diagnosis, deep learning, semantic segmentation, menisci.

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I.1. ORTHOPAEDICS

I.1.9. VARIA

Bone Lengthening with Magnetic Nails – The Experience on First Cases in "Dr. Victor Gomoiu" Children's Hospital

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ABSTRACT

Objectives: *We aimed to present our first experience with the long bone elongation using the expandable nail operated non-invasively by the magnetic field generated close to the elongated segment.*

Materials and methods: *During the last year two patients were treated using the magnetic nail at "Dr. Victor Gomoiu" Children's Hospital. The first case is a 14 years old girl with a congenital hypotrophy of the left pelvic limb of 4.5 cm mostly on the femoral segment. In January 2022, the lengthening procedure was performed at the level of the proximal left femur. Complete healing of the elongated bone was observed at nine months after the elongation procedure started; the patient is ambulating independently with the leg length restored. The second case is a 17-year-old girl with 5 cm shortening of the right femur. The shortening was acquired after a diaphyseal fracture complications. The lengthening process has begun in august 2022 and it is running without complications at the moment of writing this paper.*

Results: *The elongation of bones with magnetic nails is easier tolerated and accepted by patients because, despite being more invasive, it has lower risk of septic complications. To the best of our knowledge, the two patients are the first cases operated in Romania using a magnetic nail.*

Conclusions: *Despite the high costs of the implants, the magnetic nail is an excellent device which provides comfort to the patient and precision to the lengthening process.*

Keywords: magnetic nail, bone lengthening, non-invasive, intramedullary.

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SECTION I – ORAL PRESENTATION

I.1. ORTHOPAEDICS

I.1.9. VARIA

Bone Marrow Edema Syndrome

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ABSTRACT

Objectives: *Bone marrow edema (BME) is incidentally discovered by IRM, T1, T2 and STIR. It is an associated sign, with a low frequency. The literature tries to offer solid data concerning this pathology. As practitioners, we have to explain our patients the etiology of the BME and to set an effective treatment.*

Materials and methods: *We analysed the magnetic resonance imaging (MRI) results of 126 patients who had been referred for traumatic and orthopaedic pathology, among which we identified 25 cases of BME.*

Results: *We found BME idiopathic (bone marrow edema syndrome – BMES) or secondary to a traumatic condition (bone marrow microfractures with preservation of the cortical integrity, postoperative status, insertional tendinopathies), septic arthritis, autoimmune rheumatoid arthritis, osteoarthritis, neoplasms, ischemic and metabolic disorders. In patients with BME, the treatment targets the basic condition; in those with BMES we opted for an anti-inflammatory treatment and temporary joint rest. We associated bisphosphonates, physical therapy and kinesitherapy in difficult cases.*

Discussion and conclusions: *Bone marrow edema syndrome is a diagnosis of exclusion and its treatment is still unsystematized. It is a pathology that should not be overlooked, because although its severity is not comparable to that of traumatic and degenerative osteoarticular diseases, it has an impact on patients' quality of life.*

Keywords: bone marrow edema, bone marrow edema syndrome.

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SECTION I – ORAL PRESENTATION

I.1. ORTHOPAEDICS

I.1.9. VARIA

Orthobiologics: Current Concepts and Clinical Interventions for Tendon and Cartilage Lesions

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ABSTRACT

Introduction: *The usage of orthobiologics in modern medicine for musculoskeletal therapies has faced a lot of interest in the past years. According to present results, orthobiologics promoted healing and regeneration of tissues, having a high potential to reduce pain and improve functionality in specific musculoskeletal injuries. Healing and regeneration processes are different for each specific tissue such as bone, cartilage, tendons and ligaments, and this differentiation requires different treatment strategies. However, there is still a lack of clinical evidence of the available products.*

Objectives: *The main objective was to assess the currently available literature and compare the obtained data with our clinical experience with orthobiologics.*

Materials and methods: *We reviewed the current literature regarding the clinical evidence behind common orthobiologic treatments such as platelet-rich plasma (PRP) and adipose-derived stem cells (AdSC) in the treatment of tendon injuries and cartilage lesions. Also, we compared and analyzed the reviewed data with our own experience using these therapies.*

Results and discussion: *Evidence from the current literature is limited for orthobiological treatments and is predominantly relevant to PRP injection and less for AdSC therapy. Platelet-rich plasma injections are predominantly used in the treatment of tendon regeneration. Adipose-derived stem cells is used also for the treatment of tendon and cartilage lesions. The results of our clinical practice are in agreement with those derived from the literature review, showing that both PRP and AdSC enhance the repairing effect on tendon and cartilage lesions.*

Conclusion: *Platelet-rich plasma and AsCS can represent an ideal method for the treatment of cartilage and tendon injuries. Future evidence-based treatment studies are needed in order to identify the optimal orthobiologic formulations for specific tissues and injuries.*

Keywords: orthobiologics, platelet-rich plasma (PRP), adipose-derived stem cells (AdS).

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SECTION I – ORAL PRESENTATION

I.2. TRAUMATOLOGY

I.2.1. FOOT & ANKLE TRAUMA

„Stable" Percutaneous Achilles Tendon Repair – Preliminary Report

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ABSTRACT

Objectives: *Incidence of Achilles tendon rupture is increased, especially among active people, but can occur in the elderly population too. If left untreated, it can lead to important functional impairment affecting patients' quality of life. The aim of the present study is to highlight the benefit of our percutaneous Achilles tendon suture technique and its increased strength compared to classic Bunnel suture.*

Materials and methods: *We are presenting a percutaneous modified Bunnel suture technique for the treatment of Achilles tendon rupture. Our proposed technique combines the advantages of the stable Krakow suture and the advantages of minimally invasive percutaneous techniques. We have experimentally demonstrated the superior strength and mechanical resistance of our suture compared with the classic Bunnel suture.*

Results: *Eleven patients with acute Achilles tendon rupture were treated with the above-described surgical technique and further followed up for one year. No major complications were encountered and functional outcome was very good.*

Discussion and conclusion: *Our results suggest that the suture placing manner can lead to a smaller rate of failure reducing the pulling and slipping tendency along the tendinous fibers in an early postoperative phase. Our technique is mainly recommended in elderly patients.*

Keywords: Achilles tendon rupture, modified Bunnel suture, elderly, percutaneous, stable.

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SECTION I – ORAL PRESENTATION

I.2. TRAUMATOLOGY

I.2.1. FOOT & ANKLE TRAUMA

Do Not Ignore the Posterior Malleolar Fracture!

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ABSTRACT

Introduction: *The posterior malleolus (PM) is the posterior lip of the tibial plafond which contributes to its concave shape, giving congruency and stability to the ankle joint. The PM originates from the posterior inferior tibiofibular ligament (PITFL), a major component of the syndesmotic complex giving 42% of the overall stability of the syndesmosis. Fracture of the PM may contribute to posterior talus subluxation and ankle instability, leading to future development of arthritis and disability. The development of osteoarthritis is one of the factors contributing to the long-term outcome of posterior ankle fractures. The PM component of an ankle fracture is important but often overlooked. Preoperative computed tomography (CT) scans for identifying and classifying the fracture pattern are underused and should be seriously taken in consideration. Posterior ankle fractures are not difficult to repair. The integrity of the posterior malleolus and its ligamentous attachment is essential for tibiotalar load transfer, posterior talar stability, and rotatory ankle stability. Therefore, fixation of posterior malleolus in ankle fractures has significant benefits.*

Objectives: *We aimed to evaluate the treatment effect of ankle joint fracture surgery involving the posterior malleolus and to discuss relevant factors influencing the occurrence of traumatic arthritis of the ankle joint.*

Materials and methods: *A systematic literature search of PubMed, Embase and Cochrane digital databases has been carried out. Title and abstracts were screened and information from eligible research was extracted.*

Results and discussion: *Undiagnosed and undertreated PM fractures lead to early ankle instability and osteoarthritis. A preoperative CT could improve the outcome of those fractures. A large proportion of bimalleolar fractures are associated with PM fractures which are missed with standard X-rays. A systematic preoperative CT scan was advocated in the management of bimalleolar fractures. There was no clear link between posterior fragment size and functional outcome or development of arthritis. The non-anatomical reduction of the fragment influences the outcome. Radiological and functional outcome was superior after ORIF* via *the posterolateral approach than after percutaneous anteroposterior screw fixation. It is not clearly established whether the posterior fragment size is an indication for its fixation. However, a step-off seems to be an important indicator for developing posttraumatic arthritis and with a low functional outcome. Posterior malleolus fragments involving the intra-articular surface need to be anatomically reduced and fixated to prevent postoperative persisting step-off.*

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Conclusions: *The morphology of PM fractures varies. Computed tomography is vital for the assessment of fragment size, comminution, articular impaction, and syndesmotic disruption. Although, historically, the fragment size (25%–33% of the articular surface) becomes taken into consideration as a threshold for fixation, it is obvious that fragment size must now no longer be the most effective thing to dictate fixation. Surgeons must be aware of restoring the structural integrity of ankle joint, that is restoring articular congruity, correcting posterior talar translation, addressing articular impaction, clearing out osteochondral debris, and restoring syndesmotic stability. Surgeons must become familiarized with posterolateral and posteromedial surgical approaches and fixation of the fragment under direct vision to obtain the best outcomes.*

Keywords: posterior malleolus, ankle fracture, outcome, trimalleolar fracture, ankle osteoarthritis.

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SECTION I – ORAL PRESENTATION

I.2. TRAUMATOLOGY

I.2.1. FOOT & ANKLE TRAUMA

Mid-term Results of 110 Cases of Intra-articular Calcaneal Fractures Treated with C-Nail

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ABSTRACT

Objectives: *To assess the outcome of the sinus tarsi approach and C-Nail fixation of displaced intra-articular calcaneal fractures (DIACFs).*

Materials and methods: *Ninety patients (61 men and 29 women, mean age of 44.38 years) with 110 DIACFs were treated between October 1, 2016 and December 31, 2020. First, the posterior facet was reduced through the sinus tarsi approach and fixed with one or two screws, followed by reduction of all fragments to the articular block; the final fixation was performed percutaneously with C-Nail, locked with six screws. Patients were assessed for restoration of the Böhler angle, complications and overall fracture reduction. To assess the functional outcome, we used the Mean American Orthopaedic Foot & Ankle Society Ankle-Hindfoot score and Maryland foot score after 12 months.*

Results: *The Böhler angle improved from 20.5 degrees preoperatively to 28.6 degrees postoperatively. The articular step-off was reduced from 5.4 mm preoperatively to 0.6 mm postoperatively. Superficial wound edge necrosis was seen in three patients (2.8%) and superficial infection was observed in one (0.9%). After a one-year follow-up, we recorded a mean American Orthopaedic Foot & Ankle Society Ankle-Hindfoot Score of 90.2 and a mean Maryland Foot Score of 91.2.*

Conclusions: *The C-Nail represented a viable alternative to plate stabilization in the treatment of DIACFs, combining primary stability with low soft tissue complications.*

Keywords: calcaneal fracture, sinus tarsi, calcaneal nail, C-nail system.

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SECTION I – ORAL PRESENTATION
I.2. TRAUMATOLOGY
I.2.2. HAND & WRIST TRAUMA

How We Manage Distal Radioulnar Joint Instability

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ABSTRACT

Objectives: *To make a comprehensive presentation of Distal Radioulnar Joint (DRUJ) instability and how it can lead to chronic pain as it is a common clinical condition but a frequently missed diagnosis.*

Materials and methods: *The purpose of this presentation is to provide a review on DRUJ anatomy and biomechanics and to identify common injuries associated with DRUJ instability, the common triangular fibrocartilage complex (TFCC) tear diagnostic. Some current therapeutic methods are covered through case presentations. Distal Radioulnar Joint injury and chronic instability can be a significant source of morbidity in patients' lives. Although often linked with distal radius fractures, DRUJ injury may occur in a variety of other upper extremity injuries as well as an isolated pathology. Diagnosis of this injury requires the clinician to have a high index of suspicion and a low threshold for clinical testing and further imaging of the DRUJ.*

Results: *Clinical and radiological evaluation lead to a DRUJ instability diagnosis and is mandatory for a good management of the patient, as to maximize the outcome.*

Conclusions: *Chronic instability can be a source of morbidity in patients, leading to pain, dysfunction and arthritis, as DRUJ injury can often be undetected on initial presentation of an upper extremity injury.*

Keywords: DRUJ, chronic pain, instability, TFCC.

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SECTION I – ORAL PRESENTATION

I.2. TRAUMATOLOGY

I.2.2. HAND & WRIST TRAUMA

Surgical *Versus* Conservative Treatment in Displaced Distal Radius Fractures

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ABSTRACT

Introduction: *Distal radius fractures (DRFs) have a bimodal distribution that occur in younger patients due to high energy trauma and in elderly due to osteoporosis.*

Objectives: *The purpose of this study is to assess the radiological and functional outcomes of surgical and conservative treatment in DRFs.*

Methods: *Selected patients (n=412) were retrospectively analyzed for five years. The surgery group included 187 patients treated by open or closed reduction and internal fixation, and the cast group 225 patients who underwent conservative treatment by closed reduction and cast immobilization. The preoperative and follow-up results (radiological – volar tilt, radial inclination, radial height, and QuickDASH functional score) obtained postoperatively and at three months after surgery (n=50/group) were registered.*

Results: *Patients' mean age was 68±9 years in the cast group and 52±11 years in the surgery group. The average volar tilt measured at three months was 3.8±3.6 in the cast group compared to 7.8±2.8 in the surgery group, p<0.01. Radial inclination had normal values over 15° in 65% of patients from the cast group (16°±4.6) compared to 93% of patients from the surgery group (2°±3.8), p<0.001. Radial height was restored in 63% of patients from the cast group* versus *89% of those from the surgery group, p<0.001. The QuickDASH score of patients aged over 60 was 20.4 for the cast group* versus *19.3 for the surgery group, without statistical significance. Regarding patients aged under 60, the QuickDASH score was 26.3 for the cast group compared to 16.2 for the surgery group, p<0.05.*

Conclusion: *Radiographic outcomes and functional outcomes after DRFs are significantly better for patients treated surgically but clinical outcomes did not show better results in those aged over 60.*

Keywords: cistal radius fracture, surgical treatment, cast immobilization, functional score, radiographic outcome.

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SECTION I – ORAL PRESENTATION
I.2. TRAUMATOLOGY
I.2.3. HIP & FEMUR TRAUMA

A Rare Case of Periprosthetic Femoral Fracture in Megaprosthesis of the Knee

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ABSTRACT

Introduction: *Primary malignant bone tutors accounts for less than 1% of all cancers. The knee joint is the most common site for primary malignant bone tutors. With the development of new operative techniques, endoprosthetic reconstruction (EPR) has become the primary treatment and the most commonly used approach following the excision of the knee joint tutors or surgery for other nontumorous conditions. Even though the potential advantages of EPR in terms of mobilisation with full weigh bearing, great concerns remain over the long-term reliability. Periprosthetic femoral fractures occur in 10% to 24% of patients.*

Materials and methods: *We present a rare case of a 53-year-old patient who presents to the emergency department following a fall from the same level with the diagnosis of periprosthetic fracture of the right femur.*

Results: *Lateral approach to the right thigh, reduction of the periprosthetic fracture in an open focus and osteosynthesis with a dedicated plate and five cerclage wires. At one year follow-up, the patient had a complete recovery.*

Conclusions: *Periprosthetic fractures have an increasing incidence and the surgeon will have more new challenges.*

Keywords: periprosthetic fracture, megaprothesis.

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SECTION I – ORAL PRESENTATION

I.2. TRAUMATOLOGY

I.2.3. HIP & FEMUR TRAUMA

Distal Femur Fractures – Surgical Reconstruction Treatment

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ABSTRACT

Introduction: *Distal femur fractures are traumatic injuries involving the region extending from the distal metaphyseal-diaphyseal junction to the articular surface of the femoral condyles. Diagnosis is made radiographically, with computed tomography (CT) studies being often required to assess intra-articular extension. Treatment, which is generally operative, consists of operative open reduction internal fixation (ORIF), intramedullary nail, or distal femur replacement, depending on the available bone stock, age of patient and patient activity demands. Mechanism: young patients – high energy with significant displacement, older patients – low energy, often fall from standing, in osteoporotic bone, usually with lesser degree of displacement. We will present several current classifications for theses fractures.*

Results and conclusions: *Treatment – Nonoperative indications (rare) in general for stable, nondisplaced fractures, hinged knee brace are used. Treatment – Operative External Fixation technique avoids pin placement in the area of planned plate placement, if possible. Treatment – ORIF, suitable for all fracture types, approach lateral – arthrotomy for direct reduction of articular components, minimally invasive lateral modified anterior (swashbuckler), best when used for extraarticular fractures, midline anterior incision that angles slightly lateral, lateral parapatellar arthrotomy, facilitates articular and lateral distal femur exposure, lateral parapatellar arthrotomy fractures with complex articular extension, extend incision into quadriceps tendon to evert patella, can be used for Hoffa fracture. Treatment – ORIF, suitable for all fracture types, approach medial parapatellar used for complex medial femoral condyle fractures medial, most often used for type B2 and B3 patterns, can be used to augment fixation with medial plate in type C3 patterns, and also medial/lateral posterior used for very posterior Hoffa fragment fixation. Treatment – Operative retrograde intramedullary nail for extraarticular fractures, simple intraarticular fractures, periprosthetic fractures with implants with an "open-box" design, distal femoral replacements do not allow retrograde nail fixation, traditionally, 4 cm of intact distal femur needed but newer implants with very distal interlocking options may decrease this number, independent screw stabilization of intraarticular components placed around the nail. Treatment – Operative arthroplasty and distal femoral replacement Indications arthroplasty preexisting osteoarthritis with amenable fracture pattern, low demand patients, un-reconstructable fracture, fracture around prior total knee arthroplasty with loose component. Complications: knee pain/stiffness symptomatic hardware risk factors lateral plate, pain with knee flexion/extension due to IT band contact with the plate. Treatment hardware removal. Malunions risk factors common deformities after plating include rotation, hyperextension (recurvatum), and coronal malalignment, malalignment is more common with IM nails. Treatment revision internal fixation with osteotomy, functional results satisfactory if malalignment*

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is within five degrees in any plane. Nonunions have an incidence of up to 19%, most commonly in the metaphyseal area with articular portion healed, risk factors associated with soft tissue stripping in the metaphyseal region. Treatment revision ORIF and autograft indicated, consider changing fixation technique to improve biomechanics. Infection risk factors diabetics with foot ulcers. Treatment debridement, culture-specific antibiotics, hardware removal if fracture stability permits it. Loss of fixation, varus collapse, plate fixation associated with toggling of distal non-fixed-angle screws used for comminuted metaphyseal fractures, IM nail fixation, proximal (diaphyseal) screw failure, associated with short plates and non-locked diaphyseal fixation.

Keywords: femoral fractures, reconstruction, arthroplasty.

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SECTION I – ORAL PRESENTATION

I.2. TRAUMATOLOGY

I.2.3. HIP & FEMUR TRAUMA

The Predictive Role of Inflammatory Markers in Patients Undergoing Surgery for Extracapsular Proximal Femur Fracture

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ABSTRACT

Objectives: *The objective of this study was to determine if there is any link between the systemic inflammatory response (SIR), the time of surgery and the immediate postoperative evolution in patients with extracapsular proximal femur fracture (EPFF).*

Materials and methods: *Twenty-two patients admitted for EPFF were part of this prospective study. Subjects had a mean age of 78.77±12.61 years. They were all treated surgically with proximal femoral nailing. For analyzing SIR, blood samples were obtained one hour preoperatively in order to determine Interleukin (IL)-6, IL-10, C-reactive protein (CRP) and fibrinogen levels. Eventually, we grouped the patients depending on the moment of surgery (less than or 48 hours after admission). Our study assessed patients' evolution and clinical status until their discharge. Student's t-test and chi-square test were used for the statistical analysis of the group.*

Results and discussion: *The mean time to surgery was 52.45±48.29 hours; 11 patients underwent surgery within less than 48 hours. Only one patient did not survive before discharge. At least one complication was found in 86.36% of patients, with anemia being the most frequently encountered problem (59.09%). IL-6 was abnormal in 86.36% of patients; the early group had lower levels of IL-6 than the delayed group (p=0.005). IL-6 had a medium positive correlation with the time of surgery, but without statistical relevance (p=0.067). On the other hand, only one patient (4.54%) had an abnormal level of IL-10 and there was no correlation with any other variable. Regarding the immediate postoperative complications, the correlation between them and IL-6 level was statistically significant (p=0.02). Descriptive statistics showed that the delayed group had more elevated values for CRP and fibrinogen, but these findings were not statistically significant.*

Conclusion: *Patients operated within less than 48 hours after admission had a lower SIR, resulting in a lower rate of in-hospital complications. IL-6 has the potential for being a prognostic factor for the immediate postoperative evolution. The other inflammatory markers studied by us brought information that was not scientifically relevant.*

Keywords: extracapsular proximal femur fracture, time to surgery, inflammatory markers, interleukins.

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SECTION I – ORAL PRESENTATION
I.2. TRAUMATOLOGY
I.2.4. PAEDIATRIC TRAUMA

Correlation between the Dominant Hand and Occurrence of Supracondylar Humerus Fracture

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ABSTRACT

Objectives: *It is a known fact that, during a fall, a child would rather protect the dominant hand by using the non-dominant one, although the role of handedness in upper limb fractures has not been studied in-depth. Our study aims to highlight a link between the dominant hand and the side of a supracondylar humerus fracture in the pediatric population. The hypothesis is that children tend to guard their dominant hand in the event of a fall, thus exposing their non-dominant one to trauma because the dominant one might be involved in an activity. Although there are many studies that address the management of such fractures and the efficacy of different treatments, only a few of them analyze the link between a child's handedness and the side they are more likely to sustain a fracture.*

Materials and methods: *We carried out a retrospective cross-sectional cohort study, including pediatric patients who presented to the emergency room with a supracondylar humerus fracture following an injury by falling from the same height.*

Results: *In total, 245 patients were selected and grouped according to age. In the 1–3 years group, no statistical significance was found between hand dominance and the side of fracture ($p = 0.7315$). During preschool years (4–6 years old), the non-dominant hand is more often involved ($p = 0.03$, odds ratio 3.5). In the 7–14 years group this trend was maintained and actually increased ($p = 0.052$, odds ratio 3.8).*

Conclusions: *The relationship between handedness and laterality of supracondylar humerus fractures is relevant only among children aged over three years, because hand dominance starts to be relevant after this cut-off. Before the age of three, this type of fracture occurs as a random event as no statistical correlation has been found.*

Keywords: dominant hand, supracondylar humerus fracture, pediatric trauma.

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SECTION I – ORAL PRESENTATION

I.2. TRAUMATOLOGY

I.2.4. PAEDIATRIC TRAUMA

Traumatic Hip Dislocation Associated with Proximal Femoral Physeal Fractures in Children: a Systematic Review

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ABSTRACT

Introduction: *Traumatic hip dislocation might lead to serious complications and a poor outcome. Fortunately, it is a rare condition in pediatric patients.*

Objective: *The purpose of this study is to establish and describe the complications caused by hip dislocations associated with transphyseal femoral neck fractures.*

Results and discussion: *We conducted a literature review that resulted in 11 articles, including a total number of 32 patients aged over 10 years who were suffering from traumatic hip dislocation associated with a transphyseal femoral neck fracture. We presented a case series of three patients with hip fracture-dislocation treated in our clinic that were also evaluated and included in the study. For the 35 patients included in the study group, the percentage of avascular osteonecrosis after hip fracture-dislocation was 88.57%. Traumatic hip dislocation associated with transphyseal femoral neck fracture is a rare condition and has a poor prognosis because of the high incidence of femoral head avascular necrosis (AVN). Reduction should be attempted within six hours the from injury, but this may not minimize the risk of AVN if transphyseal separation occurs.*

Conclusions: *The approach may influence the development of AVN; lateral approach of the hip with great trochanter osteotomy seems to have the lowest number of cases of AVN.*

Keywords: traumatic hip dislocation, transphyseal fracture, avascular necrosis, open reduction, child.

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SECTION I – ORAL PRESENTATION
I.2. TRAUMATOLOGY
I.2.5. SHOULDER & UPPER ARM TRAUMA

Management of Postoperative Complications of Humeral Fractures: a Single Center Experience

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ABSTRACT

Introduction: *The humerus is one of the most commonly fractured bones, with a variable incidence according to its location – proximal humerus, humeral shaft and distal humerus fractures represent 8.2%, 1.2% and 0.9%, respectively, of all types of fractures. The reported prevalence of postoperative complications ranges between 35-56%, which considerably increases hospitalization stay and costs.*

Objective: *In this study we aimed to provide a comprehensive overview of our hospital experience with these complications, describing the patient profile and the management of complications.*

Methods: *We analyzed 1,131 patients admitted to our hospital between 2015 and 2022 with humeral fractures. We included 120 patients aged over 18 who needed surgery and presented a post-intervention complication.*

Results and discussion: *Sociodemographic data showed a mean age of 54.16 years and a female to male ratio of 1 to 1.03. Of the 120 fractures, 35.8% affected the proximal humerus, 46.66% the humeral shaft and 17.5% the distal humerus. The implant used to fix the fracture in patients who developed complications was plate and screws (n=59), centromedullary nail (n=29), screws or tension band (n=19), and combinations of different implants (n=13). The complications observed in our study included a reaction to osteosynthesis material (pain, stiffness, n=35), pseudoarthrosis (n=25), migration of osteosynthesis material (n=25), radial nerve lesions (n=10), osteitis (n=5), malunion (n=4), failure of osteosynthesis material, aseptic necrosis and pathologic fracture (each n=3), delayed union (n=2), surgical wound infection, ulnar nerve lesion, elbow joint stiffness (each n=1). For the treatment of complications, in 89 of all cases, the initial implants had to*

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be removed and 41 patients needed a new implant. Of these cases, plate and screws were used in 26 cases, centromedullary nail in eight cases, shoulder arthroplasty in five cases, cerclage wire for two patients and autologous bone graft was used in 17 cases. After treatment of complications, most of the patients healed without any further surgery being needed, but two cases of sepsis were reported.

Conclusion: *Reaction to osteosynthesis material (persistent pain, join stiffness), pseudoarthrosis, and migration of osteosynthesis material were the most commonly encountered complications. In our experience, prompt intervention, in line with current guidelines, lead to a favorable outcome in the majority of cases.*

Keywords: humeral fracture, complications of humeral fracture, pseudoarthrosis, joint stiffness.

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SECTION I – ORAL PRESENTATION
I.2. TRAUMATOLOGY
I.2.5. SHOULDER & UPPER ARM TRAUMA

Surgical and Non-surgical Treatment Options for Humeral Diaphyseal Fractures: Case Series

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ABSTRACT

Objective: *The purpose of our study is to present non-surgical and surgical options used in diaphyseal humerus fracture treatment using bracing, intra-medullary nailing or plating in a series of patients in order to achieve minimal functional deficit given the fracture pattern and predictable case outcome.*

Method: *Patients referred between 2018 and 2022 with humerus fractures of the diaphysis amenable for conservative treatment were pursued between three and eight weeks. If no callus formation of persistent pain at the fracture site, the patient was proposed for surgery. If surgery was undertaken before and the patient presented with a non-consolidation or failure of the construct, he/she was proposed for revision with either intra-medullary or plate constructs. Fracture pattern was evaluated using either digital radiology or computed tomography (CT). Patients underwent either closed reduction intra-medullary nailing or open delto-pectoral or anterolateral approaches distally extended, as needed, with dynamic compression plate osteosynthesis with iliac crest bone graft as individual case mandated. After fracture fixation, all patients benefited from sling immobilization for three weeks, followed by passive range of motion exercises for three weeks and further active range of motion for three weeks.*

Results: *At 12-week follow-up, all patients presented with minimal pain, progressive gain of range of motion below the shoulder and radiologically stable implants.*

Conclusion: *Although conservative treatment remains a viable option in patients unwilling to undergo surgery, minimally invasive or open reduction and internal fixation of diaphyseal humerus fractures prove to be viable treatment alternatives, with acceptable functional and radiological outcomes at 12-week follow-up.*

Keywords: diaphyseal humeral fracture, osteosynthesis.

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SECTION I – ORAL PRESENTATION

I.3. RESIDENTS

A Clinical Case of Combined Posterior Cruciate Ligament, Medial Collateral Ligament and Posterolateral Corner Reconstruction Following Traumatic Knee Dislocation

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ABSTRACT

Objectives: *The purpose of the current study was to present a clinical case of combined posterior cruciate ligament (PCL), posterolateral corner (PLC) and medial collateral ligament (MCL) reconstruction following traumatic knee dislocation and the long term clinical outcomes.*

Methods: *A 51-year-old overweight male patient presented with left knee instability and pain after an injury he sustained three weeks prior to the examination. Initial clinical examination revealed a positive posterior drawer test (+++), positive valgus stress test (++), positive varus stress test (+++) and positive dial test. The patient's objective IKDC was grade C and he scored 38/100 in the subjective IKDC form and 39/100 in the Lysholm questionnaire. The stress X-rays showed a differential posterior drawer stress test of 12.5 mm, medial compartment gapping of 7.7 mm in the valgus stress radiographs and 5 mm gapping in varus stress. Magnetic resonance imaging (MRI) examination demonstrated non-visualization of the PCL fibers, indicative of a complete tear and an intact anterior cruciate ligament (ACL), deinsertion of the femoral end of the medial collateral ligament (MCL) and PLC complex complete injury, normal menisci. Ligament reconstruction was carried out when full ROM and normal gait pattern were recovered. Posterior cruciate ligament reconstruction was performed using ipsilateral quadriceps autograft with bone plug. For MCL, the ipsilateral semitendinous graft was used and for PLC the contralateral hamstrings were harvested. The PLC was reconstructed using the Arciero technique, while MCL was reconstructed using the LaPrade technique. Supine quadriceps isometric contraction and prone range of motion were started early postoperatively. A Jack PCL Brace was recommended during the first six weeks postoperative with a range of motion (ROM) of 45 degrees in the first week and progressively thereafter. Touch-down weight bearing was allowed during*

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the first two postoperative weeks and progressive weight bearing was permitted consequently. The patient was evaluated at 2, 6, 12, 36 months postoperatively using the same clinical protocol as preoperatively.

Results: *Following ligament reconstruction, posterior drawer test, valgus stress and varus stress were negative at all follow-up intervals. The patient's IKDC objective score increased to grade A, the subjective IKDC was 85/100 and the Lysholm score was 89/100 at 12-month follow-up.*

Conclusions: *Although PCL, PLC and MCL combined reconstruction following knee dislocation was a technically difficult procedure, it showed good short term clinical outcomes, allowing progressive return to the pre-traumatic physical activities.*

Keywords: PCL reconstruction, MCL reconstruction, multiligament.

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SECTION I – ORAL PRESENTATION

I.3. RESIDENTS

A Clinical Case of Trochleoplasty for Recurrent Patellofemoral Instability

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ABSTRACT

Objectives: *Recurrent patellofemoral instability represents up less than 0.03% of the total orthopedic injuries. The purpose of the current study was to present a clinical case of recurrent patelo-femoral instability.*

Methods: *A 16-year-old female patient with personal history presented with right knee patellofemoral instability. The first episode dated five years ago, while playing handball. Initial clinical examination revealed a complete range of motion (ROM), normoalignment of the lower limbs, no hydrarthrosis, positive apprehension test, positive patellar tilt test, positive „J sign" and no associated frontal/sagittal instabilities. The patient's objective IKDC was grade C and she scored 51/100 in the Kujala questionnaire. The X-rays showed a Dejour Type B trochlear dysplasia bilaterally and the presence of a lose body at the level of the right knee. The magnetic resonance imaging (MRI) examination demonstrated a medial patellofemoral ligament (MPFL) tear and lateral patellar tilt and trochlear dysplasia. The computed tomography (CT) scan revealed a TT-TG 22 mm on the right side and 20 mm on the left side, patellar tilt with relaxed/contracted cvadriceps 30/40 on the right side and 25/30 on the left side. Deepening trochleoplasty was performed keeping an osteochondral flap of 3-4 mm, and a Herberts screw and a 3 mm resorbable tape were used for fixation. The MPFL was reconstructed using gracilis autograft, with the femoral tunnel positioned at the Schottle point under C-arm control and the lateral retinaculum elongation was performed. Supine quadriceps isometric contraction and ROM were started early postoperatively. A hinged knee brace was recommended continuously during the first four weeks, with progressive ROM increase. The patient was evaluated at six and 12 months after surgery.*

Results: *Following the surgical procedure, both the apprehension test and J-sign were negative. The patient's IKDC objective score increased to grade A and the Kujala score from 51 to 89.*

Conclusions: *Combined trochleoplasty, MPFL reconstruction and lateral retinaculum elongation showed good short term clinical outcomes.*

Keywords: trochleoplasty, MPFL, retinaculum, patellofemoral instability.

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ACL Reconstruction Head-to-Head: Bone–Patellar Tendon–Bone *Versus* Hamstring Tendon in Terms of Knee Stability, Postoperative Complications and Graft Failure

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ABSTRACT

Background: *The anterior cruciate ligament (ACL) is one of the most vulnerable ligaments of the knee; therefore, its reconstruction is one of the most common orthopedic procedures performed annually. Anterior cruciate ligament tear results in episodic instability, chondral and meniscal injury, and early osteoarthritis. Despite extensive research, graft choice for ACL reconstruction (ACLR) remains controversial. The optimal graft selection between bone-patellar tendon-bone (BPTB) and hamstring tendon (HT) is still a topic of debate. The quadriceps tendon (QT) autograft is another type of autograft used in ACLR, but in our clinic BPTB and HT autografts remain the most common types of grafts.*

Objectives: *There is a shortage of in-depth studies comparing the clinical outcome of ACLR using either a bone-patellar tendon-bone (BPTB) or hamstring tendon (HT) autografts. This review aims to synthesize the relevant biological, biomechanical and clinical data concerning different types of grafts and to provide a better understanding of graft selection in ACLR.*

Materials and methods: *A systematic literature search in the PubMed and Cochrane Library databases has been conducted to identify published articles on clinical studies relevant to ACLR with HT autograft* versus *BPTB. The results of eligible studies were assessed in terms of knee stability, postoperative complications (such as anterior knee pain and kneeling pain) and graft failure.*

Results: *The best current data suggest that ACLR offers superior static knee stability when BPTB autografts are used and involves fewer postsurgical complications when HT autografts are used. Hamstring autografts had a higher failure rate than bone-tendon-bone autografts. Even so, failure rates were low. Both graft types continue to be suitable options for primary ACLR, and the difference in failure rate should be part of a broader discussion with every patient about graft selection, which should also include potential differences in donor site morbidity, complication rates, and patient-reported outcome measures.*

Conclusions: *The characteristics of the graft need to be taken into account and individualized for each patient who is receiving treatment for an ACL injury. As graft choice is frequently influenced by surgeon's*

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preference, surgeons must understand the existing literature along with their patients' objectives. Overall, both graft types yielded positive long-term subjective and objective results.

Keywords: ACL, allograft, anterior cruciate ligament, autograft, graft selection, bone–patellar tendon-bone, BPTB, hamstring tendon, HT, quadriceps tendon, graft failure, knee stability.

MÆDICA - a Journal of Clinical Medicine
SECTION I – ORAL PRESENTATION
I.3. RESIDENTS

Bone Grafting Options in Spinal Revision Surgery from Massive Iliac Crest Autograft to Morcellated Allograft Bone – Our Experience

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ABSTRACT

Objectives: *The aim of our study was to demonstrate the effectiveness of different types of bone grafting techniques used in the revision of failed spinal fusion surgery. We compared the clinical results and effectiveness of using morcellated allograft bone graft* versus *massive iliac crest autograft in revision surgery of the spine.*

Materials and methods: *We analyzed a group of 28 patients operated in "Foisor" Clinical Hospital of Orthopaedics, Traumatology and Osteoarticular TB, Bucharest, Romania, between January 2010 and January 2021. The group comprised 24 females and four males with a mean age of 60 (36-64) years. The mean follow-up duration was 48 (12-1132) months. All patients had undergone posterior spinal fusion surgery and the number of performed surgeries varied from one to four, with a mean value of 2.2 surgeries/patient before our index surgery. Eight patients had been subjected to long fusions (thoraco-lumbar fusions), while the other 20 underwent strictly lumbar fusions. Revision surgery was performed in all cases for failed fusion associating instrumentation failure (rod breakage, screw breakage/pull-out). We split the patients into two groups: eight patients received massive iliac crest autograft and the remaining 20 ones, morcellated allograft bone. We obtained preoperative pain and disability scores which were also used for evaluation at periodic checkups, using ODI (Oswestry disability index) and VAS (visual analogue scale) scores.*

Results: *The mean preoperative ODI score was 32.4 (16-45) for both groups. The mean postoperative ODI score was 9.8 (4-25) for the morcellated allograft bone group and 15 (10-35) for the iliac crest group (probably due to donor site pain). The mean correction rate for ODI and VAS scores was constantly better for the morcellated graft group in the first year and they become similar after about two years. The radiologic evaluation for the morcellated graft group showed first images of bony fusion at three months postoperatively in most cases; all patients achieved fusion at 12 months and there were no cases of hardware failure; for the massive iliac crest autograft we observed a longer fusion time, donor site pain and some patients needed more surgery.*

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Discussion and conclusions: *Addition of bone graft in failed spinal fusion is a necessity, especially in patients with multiple surgeries. Our experience showed that using proper aseptic measures, infection rate can be reduced to a minimum. Following our small study, we can say that morcellated allograft bone addition in the revision of posterior spine fusion is a necessary, safe and effective technique.*

Keywords: spinal fusion revision, bone graft in revision surgery, failed spinal fusion.

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SECTION I – ORAL PRESENTATION
I.3. RESIDENTS

Comparison between Functional Results of Circumferential 360-Degree and Posterior Fusion for Degenerative Discal Pathology in the Lumbar Spine

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ABSTRACT

Objectives: *The purpose of our study was to compare short-term functional results and effectiveness of lumbar fusion performed in a posterior manner with those obtained by 360-degree fusion.*

Materials and methods: *A prospective randomized study was conducted from January 2010 to March 2022. Forty patients with degenerative discal pathology were assigned to two equal sized groups, A and B, with group A (20 patients) receiving posterior fusion and group B (20 patients) 360-degree fusion. In the study group, male to female ratio was 3:1 and the median age value 47.4 +/- 3. Posterior lumbar interbody fusion (PLIF) consists of a single-level dorsal fusion, while 360-degrees fusion combines PLIF with an anterior fusion. Surgery times were noted. Data used to determine the functional status, visual analogue scale (VAS) and Oswestry disability index (ODI) scores were recorded preoperatively as well as at the three-, six- and 12-month follow-ups. Furthermore, the presence of spinal fusion was determined using plain radiographic control.*

Results: *The mean surgery time was significantly shorter for PLIF compared to the 360-degree group. The average time was 30 minutes per fusion level in group A and 55 minutes for group B. Both groups registered significant improvement in the postoperative VAS scores. For group A, the median value decreased from 7.8 +/- 0.3 to 2.5+/-0.73 at the 12-month follow-up. In group B we registered a higher improvement from 7.6 +/- 0.63 preoperatively to 2.2 +/- 0.13. There was no statistical significance (p value 0.6). Oswestry disability index showed a significant improvement in both groups, with a mean value of 17+/-2.5% in group A and 15+/-1.2% in group B. Spinal fusion prevalence was 78% in group A, with almost 8% less than in group B.*

Conclusions: *Both techniques had good clinical results at mid-term follow-up. However, the advantage of using the 360-degree fusion procedure is that it provides better pain scores and a faster return to normal life than strictly posterior fusion options.*

Keywords: spinal fusion, interbody fusion, PLIF.

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SECTION I – ORAL PRESENTATION

I.3. RESIDENTS

Correlation between Acromiohumeral Distance on Anteroposterior View and Rotator Cuff Tears

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ABSTRACT

Objectives: *In this study, we aimed to evaluate the correlation between the acromiohumeral distance (AHD) measured on the anteroposterior (AP) view and the existence of an rotator cuff (RC) tear to ease the selection of patients who need additional imagery.*

Materials and methods: *The present cross-sectional cohort retrospective study was conducted in our clinic, from January 1, 2017 until December 31, 2021, on 115 patients of both genders, aged between 18 and 83 years, with shoulder pain and motion range deficit. The inclusion criteria were age over 18 and painful shoulder. The exclusion criteria were AHD<5, severe osteoarthritis, history of surgery, septic or inflammatory arthritis or fracture around the shoulder. All patients underwent a radiological exam and either magnetic resonance imaging (MRI) or ultrasonography of the affected side for confirmation of the diagnosis. The AHD was measured in millimetres on true AP (Grashey) radiographs. Patients were classified into two groups, having (1) no tear and (2) partial or complete supraspinatus tear. The data was analysed using IBM SPSS Statistics 28.0.*

Results: *A point-biserial correlation was conducted between the AHD and the presence of supraspinatus tear. Data are mean ± standard deviation. Analyses showed there were (a) no significant outliers, as assessed by boxplot; (b) AHD value was normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$); and (c) variances were homogeneous, as assessed by Levene's test for equality of variances. There was no statistically significant correlation between measured AHD and the presence of supraspinatus tear, $rpb(113) = .077$, $p = .411$, with free-tear patients having a higher AHD mean value than patients with partial or complete tear (10.06 ± .38* versus *9.63 ± .23).*

Conclusions: *The measurement of acromiohumeral distance on AP views returned no statistically significant correlation between the measured AHD and the presence of RC tears, according to point-biserial correlation analysis.*

Keywords: acromiohumeral distance, rotator cuff, shoulder imaging.

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SECTION I – ORAL PRESENTATION
I.3. RESIDENTS

Correlation between Rotator Cuff Tears and Radiological Measurements of the Lateral Acromion Angle and Critical Shoulder Angle

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ABSTRACT

Objectives: *The aim of the present study was to find clinical and radiological correlations between patients with rotator cuff tears and the lateral acromial angle (LAA) and critical shoulder angle (CSA).*

Materials and methods: *A total of 208 patients with shoulder pain were retrospectively reviewed between January 2018 and July 2022. Both CSA and LAA were measured on anteroposterior radiographs for each patient. Ninety nine patients who met the inclusion criteria were included in the study. They were divided into two groups: a group of 60 patients with full thickness rotator cuff tears (RCTs) and a mean age of 61.2 years (± 9.41), and a group of 39 subjects with intact rotator cuff (IRC) and a mean age 51.9 years (± 12.5). A Spearmen`s rank-order correlation was run to assess the relationship between the critical shoulder angle and the lateral acromial angle in all 99 patients. Preliminary analysis showed the relationship to be monotonic.*

Results: *There was a statistically significant strong negative correlation between the CSA and LAA (rs= -.597, p < .001). Shoulders with full thickness rotator cuff tears demonstrated an increased CSA and a decreased LAA compared with shoulders with intact rotator cuff. When measured on anteroposterior radiographs, the mean CSA was 38.448 (±3.50) in the RCTs group and 32.5 (±4.12) in the IRC group (p<.001). The mean LAA was 74.51 (±6.29) in the full thickness rotator cuff group and 83.77 (±5.64) in the intact rotator cuff group (p<.001).*

Conclusions: *The values of CSA and LAA measured on anteroposterior radiographs were determined to be significantly related to full thickness rotator cuff ruptures.*

Keywords: lateral acromial angle, critical shoulder angle, full thickness, rotator cuff.

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SECTION I – ORAL PRESENTATION

I.3. RESIDENTS

Difficulties and Complications in the Treatment of Femoral Fractures

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ABSTRACT

Objectives: *Distal femoral fractures account for 3-6% of adult femoral fractures and 0.4% of all fractures and are associated with significant morbidity and mortality rates. Fractures of the femur present with varied patterns in anatomy, treatment modality and outcome. Treatment of femoral fractures should be prompt and appropriate; otherwise, such fractures can cause prolonged morbidity and extensive disability: prolonged hospitalization, infections, inappropriate fracture unions such as delayed union, malunion, non-union and implant failure.*

Materials and methods: *We performed a retrospective evaluation over a period of 10 years and identified 264 patients with femur fracture treated in our clinic, of whom we selected the most relevant cases in terms of complications that occurred during the evolution. We identified 91 patients with fractures resulting from car accidents, 12 with falls from a height, eight with pathologic bone, six with crush injuries, and two with gunshot wounds. Fractures were classified based on AO and Gustilo-Anderson grading systems. A total of 65 patients had open fractures according to Gustilo-Anderson classification, including type I (12 patients), type II (26 patients), type III A (16 patients), type III B (10 patients) and type III C (one patient). The criteria used in the selection of patients included complex bone-soft tissue lesions, open or multifocal fractures, polytrauma, duration of treatment, number of reinterventions, complexity of therapeutic methods used. Patients were initially treated with internal or external osteosynthesis methods, depending on open/closed fracture, the degree of soft tissue injuries, associated injuries, injury severity score, associated vascular or nerve injuries.*

Results: *We have observed that both early and late complications such as septic evolution, pseudarthrosis or malunion, loss of fixation, amputation (one patient requiring above knee amputation) were more frequent in patients with major trauma who had open fracture, complex soft tissue injuries or polytrauma. All complications were treated using sequential local debridement techniques, negative wound pressure therapy, skin grafting, treatment of bone defects with autologous grafting and bone substitutes or reconstructive microsurgery techniques – free vascularized transfer, arthrodesis.*

Conclusions: *Complex femoral fracture represents a medical emergency, with the initial grading foreseeing the medium- and long-term results of the treatment. The right therapeutic indication and choosing the correct time and method of treatment individualized for each patient are important to avoid early and late complications.*

Keywords: femoral fractures, fracture complications.

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MÆDICA - a Journal of Clinical Medicine
SECTION I – ORAL PRESENTATION
I.3. RESIDENTS

Extrapleural Solitary Fibrous Tumor of the Arm. A Case Report

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ABSTRACT

Objectives: *Extrapleural solitary fibrous tumor is a very rare category of soft tissue derived neoplasm that can occur anywhere in the body. It is most frequently benign, although malignant cases represent 10-15% of the total. This type of tumor has no predilection for patients' gender or age. Similarly to pleural solitary fibrous tumors, the microscopical characteristics of extrapleural solitary fibrous tumors consist in a collagenous stroma and spindled-shaped cells disposed around dilated vasculatures that stain positive for CD34 and STAT6 in the immunohistochemistry analysis.*

Materials and methods: *A 68-year-old woman with a history of diabetes mellitus, blood hypertension and chronic kidney disease presented with dull pain and discomfort on the posterior aspect of the right arm. Clinically a large, mobile, nodular mass could be palpated superficially to the distal part of the right triceps brachii. The patient underwent X-ray and ultrasound examinations, which were not specific; consequently, a right arm magnetic resonance imaging (MRI) with contrast was performed, which showed a 9x5 cm tumoral mass adjacent to the long and lateral heads of the triceps brachii. It exhibited low signal intensity on native T1 and T2 weighted images and high intensity on gadolinium enhanced T1 images. The tumoral mass displayed heterogeneous structure and clear margins of delineation, while showing no signs of invasion in the neighbouring tissues. The differential diagnosis taken into account included fibromatosis, haemangioma, angyomixoma. The patient underwent excisional biopsy of the tumour, followed by surgical pathology examination coupled with immunohistochemistry of the sample. The results revealed abundant bundles of perivascular spindle-shaped cells, fibrosclerotic stroma, hypervascularity, few mitoses and no necrosis. At the immunohistochemical analysis tumoral cells stained CD3 and STAT3 positive, which pointed out a benign extrapleural solitary fibrous tumor with an intermediate risk of further proliferation.*

Results: *The postoperative evolution was uneventful. At the six-month postoperative check-up, the patient remained asymptomatic and no tumoral recurrence was signaled on the follow-up MRI.*

Conclusions: *In this case, the patient presented a large benign extrapleural solitary fibrous tumor of the arm, with an intermediate risk of malignization, which was immunohistochemically diagnosed and treated definitively using complete surgical excision. The rarity of this type of tumor and its peculiar location make this case one of the very few ever reported cases.*

Keywords: extrapleural solitary fibrous tumor, immunohistochemistry, CD34, STAT6.

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SECTION I – ORAL PRESENTATION

I.3. RESIDENTS

Non-union Risk Factors in Diaphyseal Fractures Treated by Surgery

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ABSTRACT

Objectives: *Non-union represents a devastating complication after fracture fixation and a burden for the patient, surgeon and healthcare system. Risks of non-union can be patient dependent and independent, as well as local and systemic, some of which can be modified to enhance fracture healing. The purpose of the present study is to analyze the risk factors of non-union in diaphyseal fractures treated by surgery in order to improve non-union prevention and early detection. The most commonly involved risk factors for non-union are represented by an open method of fracture reduction, open fracture, presence of post-surgical fracture gap, smoking, infection, wedge or comminuted types of fracture, high degree of initial fracture displacement, lack of adequate mechanical stability provided by the implant used, and fracture location in the poor zone of vascularity of the affected bone.*

Materials and methods: *Our study included three groups of patients. Group A comprised patients with non-union after surgery and Group B patients with successful union rates – we compared the medical records of these patients regarding age, body mass index, sex, smoking, hypertension, osteoporosis, alcohol use, diabetes, fracture type, non-steroidal anti-inflammatory drugs (NSAIDs) use, delayed weight bearing, internal fixation failure, and infection data in order to identify the risk factors implication in our patients and to improve the union successful rate. We also studied the success rate of the non-union surgical treatment in Group A (additional plates and screws, exchanging the nail, external fixation, bone grafting) and the burden it represented for both the patient and healthcare system. Group C comprised patients in whom we actively searched for the presence of modifiable risk factors, which we addressed in time.*

Results: *Subjects included in Group A (non-union after first surgery) had the longest trauma to union time, biggest financial and social implications; also, every patient in this group had an association of 2-4 of the above-mentioned risk factors. Group B had the least social and financial implications, shortest trauma to union time interval; patients in this group had one of the risk factors for non-union, but we did not find any association between them. Group C had a slight longer trauma to heal interval than group B but similar financial and social implication, even though the patients in Group C had an association of 2-4 risk factors, similarly to those in Group A, because we actively found at least 1-3 modifiable factors upon which we were able to successfully intervene in various proportions.*

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Discussion and conclusion: *Osteoporosis, NSAIDs use, delayed weight bearing, open fracture type, failed internal fixation, and infection were found to be the main causes of bone non-union. Smoking, alcohol use, osteoporosis, NSAIDs use, hypertension, presence of diabetes and its poor control, weight bearing protocol and the association of these factors were some of the modifiable risk factors on which we were able to intervene and thus, to obtain satisfactory results. Therefore, surgeons should pay attention to early identifying the modifiable factors and could intervene to enhance fracture healing in high risk patients.*

Keywords: non-union, risk factors.

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SECTION I – ORAL PRESENTATION

I.3. RESIDENTS

Primary Leiomyosarcoma of the Bone: a Case Report

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ABSTRACT

Objectives: *The aim pf this paper is to present clinicopathologic features and immunohistochemical findings of a primary leiomyosarcoma in the right proximal tibia of a 29-year-old male patient.*

Methods: *A 29-year-old man with pain in his right knee and difficulty walking, for which he requested medical assistance, was admitted to our department. His medical history showed dyslipidemia, hemorrhoidal disease and anxiety-depressive disorder. A local examination of the knee revealed a painful to touch solid mass – about 9 cm diameter – in the proximal extremity of the right tibia. Clinical and paraclinical data used in this study was collected from the patient's anamnesis and clinical examination, chart and results from the paraclinical examinations. The magnetic resonance imaging (MRI) scan revealed a solid mass localized in the proximal extremity of the right tibia at 7 mm below the joint surface, with 50/30/40 mm dimensions. The tumor was non-homogeneous with necrotic cystic elements. A subsequence full body computed tomography (CT) scan revealed osteolytic lesions of approximately 3,4/3,1 cm with irregular, fractured edges and minimal damage of the tibial plateau. The rest of the CT scan provided no evidence of metastatic disease or other primary tumors.*

Results: *The histological examination revealed a 3/4/2 cm gray, crumbly, fleshy tumor with infiltrative edges in the bone and extraosseous extension. Microscopically, a tumor proliferation was identified containing spindle-shaped cells, arranged in wide intersecting bundles and accentuated cell pleomorphism. Numerous atypical mitoses were detected. Immunohistochemical analyzes showed intensely positive tumor cells for desmin and alpha smooth muscle actin (SMA), epithelial membrane antigen (EMA) diffusely positive – low intensity, Ki-67 (a protein found in cells that increases as they prepare to divide into new cells) positive in 60% of the tumoral cells.*

Discussion and conclusions: *Leiomyosarcoma is a rare aggressive sarcoma with many sites including the bone. Despite of an unknown aetiology, it typically develops in middle-aged or older persons. Leiomyosarcoma of the bone is reported to occur predominately in large bones – most commonly in the distal femur (45% of cases), which is in fact the reason that makes this case so particular – the younger onset and the less frequent localization of the tumour in our case.*

Keywords: primary leiomyosarcoma, immunohistochemical, proximal tibia, tumor.

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SECTION I – ORAL PRESENTATION
I.3. RESIDENTS

The Characteristics of Patients Presenting with Tibial Plateau Fracture: a Single-Center Experience

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ABSTRACT

Introduction: *Improper treatment or rehabilitation of a tibial plateau fracture can cause lifetime pain, knee stiffness and osteoarthritis, resulting in a poorer quality of life.*

Objective: *The aim of this study is to create a profile of the typical patient who presents with a tibial plateau fracture in order to improve hospital resources management.*

Methods: *We searched our hospital electronic database for patients admitted between 2017 and 2021, who were diagnosed with tibial plateau fracture. In our study, we included 240 adults with a tibial plateau fracture who were admitted for treatment in our clinic. We excluded those who were hospitalized for a second intervention or osteosynthesis material ablation.*

Results: *Sociodemographic data showed a mean age of 57.2 years, a female to male ratio of 1.14 to 1, and a bimodal distribution: patients aged under 50 years among which 70% were men (n=49/70), and patients aged over 50 among which 63% were women (n = 107/170). The fracture etiology was classified as follows: 67% due to a fall from height, 31% road accidents related and 2% hit/attacked by an animal. Most fractures were classified as Schatzker II (31%), followed by Schatzker I (19%), VI (17%), III and IV (12%), V (9%). Surgical treatment was necessary for 96% (n=231) of patients. The most commonly used intervention was open reduction and internal fixation with plate or plates and screws (n=197.85%) or independent screws 15% (n=34) needed only screws. Postoperative complications occurred in 15 (6.25%) of all patients. At follow-up, 49 (21%) patients developed joint stiffness with decreased range of motion (ROM) with an extension deficit more than 5° and a possible flexion less than 110°. Twenty three patients with decreased*

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ROM had a Schatzker VI fracture, four cases were associated with Schatzker V fracture, six cases with Schatzker II and two cases with Schatzker III.

Conclusion: *Our study showed that the typical patient is a woman in her late 50s, who felt from height and presented with a Schatzker II depression-separation type fracture, needed surgical treatment, which require around seven days of hospitalization.*

Keywords: tibial plateau fracture, joint stiffness, rehabilitation.

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SECTION I – ORAL PRESENTATION

I.3. RESIDENTS

The Opportunity of Knee Arthroscopy in the Shadow of Knee Osteoarthritis – a Narrative Literature Review

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ABSTRACT

Introduction and objectives: *Knee osteoarthritis (KO) is one of the most common orthopedic afflictions in ages 50 and older and a front-runner as a cause of disability with a reported global incidence of radiographically confirmed symptomatic KO of 3.8%. Knee arthroscopy (KA) is commonly performed in patients suffering from knee pain caused by different stages of KO, either diagnosticated or not. The opportunity of KA in the setting of KO has been debated and even now guidelines and practice still differ.*

Materials and methods: *We searched the relevant literature indexed on PubMed from 2000 until present using the following keywords: knee arthroscopy, knee osteoarthritis, degenerative meniscus, partial meniscectomy, arthroscopic debridement, arthroscopic lavage.*

Results: *Following the 2002 Moseley et al's randomized controlled trial (RTC) comparing KA for KO and placebo surgery that found similar outcomes, the practice of arthroscopic procedures associated with KO was put under question. Several similar design studies came up with similar conclusions such as the 2012 FIDELITY trial. Further follow-up studies of the same cohort reported an increased risk of developing KO after partial meniscectomy for a degenerative meniscus tear. Growing evidence as such was one of the reasons why NICE guidelines in UK have been now recommending that KA was not to be used in the vast majority of patients with KO. Different arthroscopic procedures have reported different progression rates towards total knee arthroplasty (TKA). Abrasion arthroplasty and microfracture had greater short-term benefits comparing to lavage, but 54% of patients who underwent abrasion arthroplasty had a TKA at four years. Lavage quantity was not important as a RTC comparing 250 mL and 3000 mL lavages found no differences in outcomes. A mechanical blockage of the knee as an indication for KA in KO was one of the few points where the majority agrees. One study reported significant improvements just in the first year after KA for KO if the patient underwent physical therapy both before and after the procedure. Obesity, depressive disorder, rheumatoid arthritis, diabetes, age 70+ and female sex were cited as risk factors for progression towards TKA in the setting of KA in KO. Despite growing big-data evidence and guidelines against KA in KO, the procedure is still very popular and sought after in both patients and surgeons alike. Invoking*

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patients' expectations, healthcare policies, past experience and training, financial and professional status incentives, KA in KO is an entrenched procedure that has a lot of support from the medical community.

Discussion and conclusion: *With the growing population aged 50 and above, KO will gain prevalence as well. If knee arthroscopy in the early stages of OA is not the answer, medicine will have to find some other treatment to fill the period before TKA is performed.*

Keywords: knee arthroscopy, knee osteoarthritis, degenerative meniscus, partial meniscectomy, arthroscopic debridement, arthroscopic lavage.

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MÆDICA - a Journal of Clinical Medicine
SECTION I – ORAL PRESENTATION
I.3. RESIDENTS

The Time from NPWT to Reconstructive Surgical Treatment

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ABSTRACT

Introduction: *Negative pressure wound therapy (NPTW) is a method in which a vacuum (subatmospheric pressure) is applied to a wound and is then sealed off by special dressing and a tub that suctions and pumps the fluid into a collection system. It has many beneficial effects, including an increase in blood flow thus stimulating angiogenesis, fluid drainage, reducing a surface area of the wound and also protecting it from further infections. Open wounds are common in orthopaedics, especially in Gustillo type III open fractures.*

Objective: *The purpose of this paper is to assess the time it takes for granulation tissue to form and make the wound suitable for reconstructive surgery usually by means of a graft.*

Materials and methods: *The patients/cases in this study (n=15) were admitted in our hospital with open wounds that could not be healed by primary intention. The inclusion criteria were patient with open wounds with a high risk of infection that otherwise could not be healed by means of primary intention, wounds with a substantial loss of tissue, wounds that involve a fracture and an average age of 40 (range 20–60) years. The exclusion criteria were patients with coronary artery disease, peripheral vascular disease, cancer, and diabetes mellitus and other chronic illness that affect wound healing time. In each case, VAC (vacuum assisted closure) was applied after cultures were collected and an initial surgical intervention that involved debridement and cleaning of the wound. Patients were admitted between 01.01.2022 and 01.08.2022 and each of them stayed in the hospital for a minimum of five days. Those who were well enough to be discharged were called for a follow-up exam after three, seven and 14 days, respectively, depending on the aspect of the wound. Wounds were assessed by the formation of granulation tissue, angiogenesis, surface area and the amount of liquid that was drained in the collection tank.*

Results: *Out of the total number of patients included in the present study, six were eligible for a graft after three days (40%), five for a graft within seven days (33.3%), two were healed via primary intention (13.3%) and the other two patients had to undergo additional surgery due to recurring infections (13.3%).*

Discussion and conclusions: *Treatment of wounds with NPWT is a very versatile and unpredictable problem and the time it takes from applying the device to the healing of the wound depends on many factors, including the location of the wound, rate of infection and amount of soft tissue involved. The results heavily depend on patients' responsiveness to the device and their own genetic healing factors. All patients with such lesions must be monitored and be carefully kept under observation to assure treatment effectiveness.*

Keywords: NPWT, VAC, surgical reconstruction, graft, open fractures, primary intention.

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SECTION I – ORAL PRESENTATION

I.3. RESIDENTS

To Resurface or Not to Resurface? Patellar Management in Primary Knee Arthroplasty, the Ongoing Debate – a Narrative Literature Review

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ABSTRACT

Introduction and objectives: *Total knee arthroplasty (TKA) is the most commonly used joint replacement procedure that achieves a high rate of patient satisfaction in treating knee osteoarthritis, with a well-established cost-effectiveness for the healthcare system. While the benefits of TKA are not debatable, the decision to resurface the patella has been left to the surgeon's preference because of an ongoing lack of consensus regarding patellar management.*

Materials and methods: *We searched the relevant literature by inquiring PubMed database for articles published from 2000 to the present, using the following keywords: patellar resurfacing, primary knee arthroplasty, patellar implant, patellar management and combinations.*

Results: *Among the general lack of strong evidence or consensus regarding patellar management, the employed strategies fall under three categories: routine resurfacing, selective resurfacing and rare resurfacing. Treating anterior knee pain (AKP) is one of the primary arguments for patellar resurfacing which has a reported incidence of 5-47% in patients with patellar retention. However, AKP is multifactorial and cannot be attributed solely to patellar osteoarthritis. Although patellar retention is associated with an increase in reoperation, a study points out that one must resurface 33 patellae in order to prevent a single case of reoperation. Patellar cartilage loss is not an indication for resurfacing as patients with patellar retention and cartilage loss do no worse than those with intact cartilage in functional scores and satisfaction. Patellar denervation after retention seems to improve clinical outcomes and range of motion but does not improve AKP and other outcomes after resurfacing. The benefits of resurfacing on AKP, while significant postoperatively and in the short-term, are not statistically significant on the long-term without affecting outcomes and survivorship compared to patellar retention. Other registry studies point to prosthesis designs as posterior stabilized designs have a odds ratio of 2.7 in predicting secondary patellar resurfacing compared to a cruciate retaining design.*

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Discussion and conclusion: *The debate regarding patellar management, spanned on four decades is still ongoing, in spite of multiple randomized controlled trials and meta-analysis of hundreds of thousands of patients. This is due to the lack of conclusive evidence and guidelines. Perhaps technological advancements will provide a definitive better solution, but until then we recommend to leave the judgment on the surgical team's experience.*

Keywords: patellar resurfacing, patellar management, patellar retention, primary total knee arthroplasty.

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SECTION I – ORAL PRESENTATION

I.3. RESIDENTS

What to Do in Vancouver B2 Periprosthetic Fractures?

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ABSTRACT

Objectives: *This study aims to compare stem revision* versus *internal fixation in Vancouver B2 periprosthetic fractures. Although revision arthroplasty with a longer stemmed femoral component is the current recommended treatment, in some cases open reduction with internal fixation (ORIF) might be a viable option as it is a shorter less complex procedure.*

Materials and methods: *This was a retrospective study including 30 patients treated in the clinic. Admission criteria for the study comprised the diagnosis of Vancouver B2 periprosthetic fracture treated either by open reduction with internal fixation, stem revision or both open reduction with internal fixation and stem revision. Patients had an average age of 75.5 years. All subjects had more than three comorbidities and 83.3% of them had an ASA 3 score, 11 were treated by open reduction with internal fixation only, 10 with stem revision only and nine of them underwent both open reduction with internal fixation and stem revision.*

Results: *Periprosthetic fractures have always been difficult to approach in orthopedics, with many variables to take into account regarding their treatment. The Vancouver classification takes into account both the stability of the femoral component and the available bone stock. The B2 fracture is an unstable proximal diaphyseal fracture with sufficient bone stock. Although femoral component revision with a longer femoral component is the recommended approach, the length and the complexity of the procedure as well as the general higher rate of dislocation due to muscle detachment and arthrotomy leading to an unstable joint, the cost and availability of the implant are all reasons to consider open reduction and internal fixation; its main disadvantages include the aseptic loosening of the stem and higher risk of failure of the procedure. The six-month radiological consolidation rate was 90.9% for the osteosynthesis (ORIF) group, 90% for the revision arthroplasty (RA) group and 88.9% for the mixed method (ORIF+RA). The mean Parker mobility score before admission was 7 before admission and 5, 6 and 7 for the ORIF, RA and ORIF + RA methods, respectively.*

Conclusion: *In the case of older people with Vancouver B2 fractures, the consolidation of periprosthetic fractures is similar whether it is treated by ORIF, RA or ORIF and RA, while patient mobility scores are higher in RA than either ORIF or ORIF+RA.*

Keywords: Vancouver B2, revision *vs.* ORIF.

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SECTION I – ORAL PRESENTATION
I.4. CROSS-SPECIALTY

Culture-Negative and Fungal Prosthetic Joint Infections

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ABSTRACT

*Culture-negative periprosthetic joint infections (CN-PJI) are difficult to diagnose and manage. There is no gold standard for diagnosing CN-PJI. It is important to make the difference between true negative PJI and false negative results, due to inappropriate sampling or diagnostic tests. The incidence of CN-PJI is reported to be between 7% and 15%, with the majority (98%) relating to total hip and knee replacements. Common causes of culture-negative PJI can be classified into factors related to patient (increased age, smoker status, referral from other institutions, comorbidities, administration of antibiotics prior to sampling and the presence of postoperative wound drainage), microorganism (biofilm formation) and laboratory (inappropriate sampling technique, specimen transportation, culture media, incubation time and resuscitation methods). There are two types of presentation for CN-PJI: PJI, which is clearly infected but microbiological cultures remain negative and a potential PJI, with negative cultures and no obvious clinical evidence of infection such as a sinus or purulent discharge. The latter situation may represent a low-grade infection caused by fungi (*Candida albicans *and* Candida parapsilosis*, rarely* Aspergillus fumigatus *or other endemic fungi) or difficult to grow pathogens such as* Coxiella burnetti, Propionibacterim cutis *or* Mycobacterium tuberculosis*. More than 85% of all CN-PJI are related to fungal and mycobacterial infections.*

Sonication, use of chemical methods of biofilm dislodgement along with current molecular techniques used in clinical practice such as multiplex PCR, next-generation sequencing (NGS) technologies (16S rRNA amplicon sequencing, shotgun metagenomics, and meta-transcriptomics) improve culture sensitivity for etiological diagnosis.

Two-stage revision arthroplasty, followed by six weeks of antibiotic/antifungal therapy has been shown to be the most effective treatment strategy with success rates of 70–100%. Current recommendations are to initiate antibiotics with a broad spectrum against both gram-positive and gram-negative microorganisms after the first procedure and continue after the second stage reimplantation for at least six weeks. Vancomycin and cephalosporins are the most commonly used antibiotics for CN-PJI, while azoles and amphotericin B are most recommended between antifungals. Use of antibiotic/antifungal-loaded spacer is controversial.

Keywords: PJI, culture-negative, diagnostic tests.

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SECTION II – POSTER PRESENTATION

3D Volumetric Simulation of Percutaneous Fixation of Subcapital Fractures

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ABSTRACT

Introduction: *Percutaneous fixation of subcapital fractures is deceivingly easy to the untrained eye. While reduction and fixation principles are straightforward, practicing the reduction* per se *will yield a high rate of screw misalignment, which will in turn dramatically increase the rate of cut-out, non-union and avascular necrosis of the femoral head.*

Objective: *The purpose of this study is to identify the narrow therapeutic volume within which percutaneous screw fixation is effective.*

Materials and methods: *Prior to conducting the study a research protocol (U.M.02482/CR-2951/2022.04.13) has been submitted to the ethics committee for approval. The current study is based on data acquired from one patient who underwent percutaneous screw fixation following a subcapital fracture. Both computed tomography (CT) scans and radiographic images were acquired in order to fully assess comminution and to guarantee proper indication of percutaneous screw fixation. Computed tomography images were segmented in 3D Slicer, pre-processing and error correction was done in MeshMixer and final volumetric analysis and planning in SolidEdge. The viable volume for screw passage was selected between the lateral femur edge and 1cm from the articular surface of femoral head.*

Results: *In the selected experimental report the viable volume was for screw passage was 49.40 cm^3, the simulated screws had a volume of 5.03 cm^3 and the distance between the screws placed in an optimal configuration was 13.33 mm, 14.39 mm and 15.04 mm, respectively.*

Discussion and conclusions: *The present experimental report emphasizes the narrow therapeutic landmarks that need to be met in order to achieve reduction and compression of subcapital fracture sites. Thus, the current study concludes that there is a real need for new surgical guides that direct screw placement within the narrow volume of the femoral neck in order to achieve consistent placement and compression. Level of evidence: IV – in-silico*

Keywords: subcapital fracture, 3D reconstruction, percutaneous fixation, volumetric appraisal.

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Advantages of Telescopic Screw in Slipped Capital Femoral Epiphysis Treatment: a Retrospective Study and Review of the Literature

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ABSTRACT

Background: *Slipped capital femoral epiphysis is due to proximal femur physis failure in adolescent patients. Early iatrogenic closure of proximal growth cartilage in children with significant residual growth potential causes complications such as coxa breva, coxa vara, and lower limb length inequalities. The free-gliding SCFE screw system is a self-extending cannulated screw used in slipped capital femoral epiphysis (SCFE) fixation and femoral neck fractures.*

Materials and method: *We conducted a retrospective study on 16 patients aged under 11 years. All patients were treated by telescopic cannulated screws fixation. The youngest patient was seven-year-old.*

Results: *Out of the 22 operated hips, two screws have failed, thus resulting in a lack of telescoping of the screw. We discovered an average lengthening of approximately 10 mm at 24 months postoperative check-up in 20 hips in which lengthening took place. According to the Notzli method, none of the operated patients had an alpha angle value greater than 48 degrees.*

Discussion and conclusion: *Fixation with telescopic screw for SCFE in patients aged under 11 with mild to moderate slippage allows not only the continuous growth and remodeling of the proximal femur, thus avoiding deformities such as coxa breva, coxa vara, FAI, AVN, limb length discrepancies, but also a good range of motion.*

Keywords: slipped capital femoral epiphysis, SCFE, free-gliding screw system, children.

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SECTION II – POSTER PRESENTATION

Carpal Tunnel Syndrome: Open Release or Endoscopic Release?

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ABSTRACT

Objectives: *Carpal tunnel syndrome is the most commonly encountered upper extremity compression neuropathy. It is caused by median nerve compression within the carpal tunnel between the carpal bone arches and flexor retinaculum. Compression to this structure causes tingling, numbness and pain in the typical median nerve distribution. Currently, open carpal tunnel release (OCTR) represents the gold standard treatment, even though endoscopic release has gained popularity in recent years.*

Materials and methods: *When OCTR is used, the incision should begin just distal to the distal wrist flexion crease and slightly ulnar (in order to avoid the median nerve palmar to the midline of the wrist), extending it distally 3 cm in line with the third web space. After the incision is made, the skin and subcutaneous tissue is reflected, the forearm antebrachial fascia and palmar fascia should be exposed. After splitting these two structures, the transverse carpal ligament (TCL) should be identified and carefully divided, avoiding damage to the median nerve and its recurrent branch. All three structures of the flexor retinaculum should be divided in order to obtain a successful release. When two-portal endoscopic carpal tunnel release (Chow technique) (ECTR) is used, after correctly identifying the entry portal, an incision through the skin is made and the forearm fascia identified by blunt dissection. Once identified, the fascia is lifted and incised (only fascia) for about 2 cm until the proximal edge of the TCL is seen. Using a curved dissector obturator or a slotted canula assembly, the bursal tissues is freed from the deep surface of the TCL. By palpating the palm and endoscopic visualization, the distal border of the TCL is marked. Once the border is identified, a second incision is made in the palm for the exit portal. After no tissue between slotted cannula and TCL is confirmed, using a probe knife, the TCL is transected, initially from distal to proximal. Afterwards, the remaining of TCL is transected in a proximal to distal manner using the exit portal.*

Results: *Both OCTR and ECTR are effective in restoring function to the affected hand, with similar clinical results. Among ECTR treated patients, faster hand function recovery has been observed with earlier return to work, improved strength during early postoperative period and less postoperative discomfort. These advantages come at the cost of a higher risk of nerve injury. Meanwhile, OCTR still provides the advantage of direct visualization of important structures, thus reducing the risk of iatrogenic injuries but wound infection, hypertrophic scar and scar tenderness still represent challenges to this technique.*

Discussion and conclusions: *Endoscopic carpal tunnel release might seem a better option but it still has its limitations such as a longer learning curve or a higher cost of endoscopic equipment. These limitations should be taken into consideration by every surgeon. Patient's option must be also taken into consideration and respected if possible, but overall the surgeon should choose the technique with which he/she is most familiar.*

Keywords: carpal tunnel syndrome, TCL, advantages, OCTR, ECTR.

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SECTION II – POSTER PRESENTATION

Case Report of a Young Adult with Hip Osteoarthritis and Secondary Osteoporosis Treated Surgically with Cemented Total Hip Arthroplasty Using the Direct Anterior Approach

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ABSTRACT

Introduction: *The association between hip osteoarthritis (OA) and osteoporosis is rare and there is usually an inverse relationship between these two pathologies. Evidence of an association with osteoporosis is stronger for osteoarthritis in large joints. Young male adults are not at risk of developing osteoporosis due to their greater muscle mass, higher activity level and the anabolic effect of testosterone. Severe osteoarthritis of the hip is treated with an uncemented total hip arthroplasty but when the association is made with severe osteoporosis, and the Dorr index ratio is above 0.75, the suggested femoral component fixation is that of a cemented one.*

Objective: *The purpose of this case report is to underline the importance of the multidisciplinary approach for the patient's wellbeing.*

Materials and methods: *We presented the case of a 47-year-old male patient known with surgical ablation of one kidney, asymptomatic hyperuricemia, chronic tabaco use and stage II chronic kidney disease, who came to our clinic accusing hip pain and partial functional impairment. Clinically, the patient presents pain in the right groin area that radiates in the right knee, diminished mobility in the right hip, length discrepancy of about 1 cm between the right and left legs and inability to walk and bear weight. Lab results revealed elevated calcium and uric acid levels. Radiology exams showed osteoarthritis of the hip and a Dorr index ratio of > 0.75 with radiolucency of the femur. He underwent surgical treatment with cemented total hip arthroplasty using the direct anterior approach and was discharged four days after surgery. Intraoperatively, we observed a mushy brittle bone. Pre- and postoperative satisfaction was evaluated using a satisfaction questionnaire (WOMAC score). Afterwards, the patient was referred, diagnosed and treated*

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for secondary osteoporosis and primary hyperparathyroidism and evaluated periodically for calcium and PTH levels and DXA (initial T score of the left hip -2.6) in an Endocrinology clinic.

Results: *The patient was admitted with OA of the hip and received surgical treatment, with a hospital stay of four days and postoperative evaluation at six weeks, three and six months, and one year. He was also referred to an Endocrinology clinic and was treated specifically for primary hyperparathyroidism and secondary osteoporosis. The WOMAC score of satisfaction was 87 at presentation and 23 one year after surgery. Results revealed a favorable postoperative evolution with better T-score (-2.3) and near normal lab results.*

Discussion and conclusion: *Surgery alone is not enough in the treatment and evolution of a young adult male patient with OA and secondary osteoporosis. When clinical, radiological and intraoperative features are present, a multidisciplinary team and specific treatment give better results than just an orthopedic approach in the long run, considering the patient's wellbeing.*

Keywords: cemented total hip arthroplasty, direct anterior approach, secondary osteoporosis, primary hyperthyroidism.

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MÆDICA - a Journal of Clinical Medicine
SECTION II – POSTER PRESENTATION

Comparative Results of Endoscopic and Minimally Invasive Surgical Treatment in Carpal Tunnel Syndrome

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ABSTRACT

Introduction: *Carpal tunnel syndrome is a compressive neuropathy caused by the compression of the median nerve as it travels through the carpal tunnel of the wrist, which hand and upper extremity surgeons encounter the most frequently. Early symptoms of carpal tunnel syndrome include pain, numbness, and paresthesias (3).*

Materials and methods: *This is a retrospective study on 13 patients diagnosed and treated between 2019 and 2022. Eight of them were treated using the endoscopic method and the remaining five underwent open surgery. All patients had clinical signs or symptoms and electro-diagnostic findings consistent with carpal tunnel syndrome. Various parameters were evaluated for each patient, including symptom amelioration, complications, operation time and time needed to resume normal lifestyle.*

Results: *During the first three months after surgery, patients treated with the endoscopic method were better symptomatically and functionally. Local wound problems in terms of scarring or scar tenderness were significantly more pronounced in patients undergoing open carpal tunnel release compared to those undergoing endoscopic carpal tunnel release. The average delay to return to normal activity was appreciably lower in the group undergoing endoscopic surgery, as objectified by electromyographic testing at the end of six months postoperatively (1, 6).*

Discussion and conclusion: *Usually, endoscopic surgery and open surgery have similar results. The endoscopic method allows a faster recovery time and has no scar tenderness, while open surgery has fewer recurrences and a lower cost. It is necessary to take into consideration the surgeon's experience, given that many surgeons do not use the endoscopic method because they either do not have enough experience or lack the necessary equipment (5-7).*

Keywords: carpal tunnel syndrome, endoscopic carpal tunnel release, carpal tunnel release.

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SECTION II – POSTER PRESENTATION

Direct Anterior Approach for Total Hip Arthroplasty Using a "Bikini" Incision – a Case Presentation

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ABSTRACT

Objectives: *The purpose of this review was to evaluate a patient's evolution after total hip replacement using a direct anterior approach through a "bikini" incision. Our aim was to use an uncemented prosthesis for a young patient with hip avascular necrosis using a direct anterior approach, in order to provide the best possible functional and cosmetic outcomes, while reducing wound complications.*

Materials and methods: *With the patient in dorsal decubitus, we performed the skin incision, 6 cm in length, located three finger-widths distal to the anterior superior iliac spine, parallel to the groin crease. We went in between tensor fascia lata and rectus femoris, exposing the fascia lata. We performed an incision in it, as lateral as possible, in order to avoid harming the femoral cutaneous nerve. This type of approach offers a 360° view of the acetabulum, the downside being that the exposure of the femur is rather difficult. After implanting the prosthesis, we closed the wound layer by layer, finishing up with an intradermic suture.*

Results: *The patient was able to mobilize day one after surgery with a walking aid. He was discharged two days postoperatively. Subjectively, the wound looked very good and cosmetic, the patient being satisfied with the result. No wound-related complications occurred.*

Discussion and conclusions: *The direct anterior approach for total hip arthroplasty using a "bikini" incision should be taken into consideration in all young patients, mostly for the cosmetic advantages, even though it presents a series of challenges, with the most notable one being the difficulty of implantation. The learning curve may be long but patients' psychological advantages and comfort are crucial for a good quality of life.*

Keywords: bikini incision, total hip arthroplasty, cosmetic outcomes, wound complications, learning curve.

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MÆDICA - a Journal of Clinical Medicine
SECTION II – POSTER PRESENTATION

Early Infection with *Acinetobacter baumannii* of a Hip Replacement – Treatment with Implant Retention and Antibiotic Beads

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ABSTRACT

Introduction: *Prosthetic joint infection (PJI) complicates about 1% of arthroplasties but accounts for considerable morbidity and mortality. Early infections (< three months) are likely to have been acquired intra- or peri-operatively. Risk factors for PJI have been identified to include rheumatologic disease, preoperative anemia, coagulopathy, diabetes, depression, and low socioeconomic status. Prosthetic joint infections with* Acinetobacter baumannii *are very rare and usually occur in very frail patients with prolonged stay in ICU.*

Results: *A 83-year-old female with a history of HBP, ischemic cardiomyopathy, type II diabetes, chronic anemia and obesity with a BMI of 40 came to the ER after a fall and was diagnosed with right femoral neck fracture Garden IV and right distal radius fracture AO/OTA 2R3A3.3. The patient underwent partial hip replacement with cemented bipolar arthroplasty and the wrist fracture was reduced and placed in a cast. Postoperatively, she was admitted to ICU, where a central venous catheter (CVC) was mounted. After four days in ICU, the patient developed fever 38°C and elevated leukocytes (WBC 12 10*9/L). For this reason, the CVC was removed and sent for cultures, which were positive for* Acinetobacter baumannii, *and therefore she received treatment with Meropenem 500 mg/eight hours for seven days. Two weeks after the joint replacement, the patient developed right hip pain, sinus tract with drainage, erythema and warmth around the surgical wound. Laboratory findings: WBC 16.77 10*9/L, fibrinogen 508.59 mg/dL, CRP 84.259 mg/L, ESR 58 mm/h. Cultures were positive for* Acinetobacter baumannii *with sensitivity to Colistin and Tobramycin. The patient was treated with debridement, irrigation and antibiotic treatment was initiated with Colistin 9 mL UI bolus. After the initial dose, she developed AUR with 400 mL diuresis, creatinine level of 2.63 mg/dL and urea 70 mg/dL. For this reason, decision was made to stop the antibiotic treatment and to initiate nephrological therapy. Decision was made to retain the cemented stem, change the cup, the head and the linear. The wound was debrided, irrigated and cement beads containing Tobramycin 1 g were added. Postoperatively, laboratory values normalized, surgical wound healed and the patient was discharged pain free.*

Discussion: *The described case was considered a postoperative hematogenic dissemination of* Acinetobacter baumannii *from the CVC to the newly implanted hip prosthesis, so initial management*

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comprised debridement, irrigation and implant retention. Following the renal failure due to Colistin administration and the strong recommendation to stop the treatment, alternative solutions were considered. The use of cement beads impregnated with antibiotic being a widely used solution in trauma surgery, it was considered as an alternative to systemic antibiotic delivery. Due to the frail state of the patient, ETO was considered of high risk. The cemented stem was stable and microbial biofilm forms usually after six weeks, therefore only the modular components were changed. This solution proved to be fitted for our patient, with good outcome. After six months, she returned for bead extraction, no pain, full range of motion (ROM).

Conclusion: *Exact treatment for early infection, especially those under six weeks remains controversial.* Acinetobacter baumannii *PJIs are very rare, but difficult to treat.*

Keywords: hip replacement, PJI, antibiotic.

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MÆDICA - a Journal of Clinical Medicine
SECTION II – POSTER PRESENTATION

Intraoperative Periprosthetic Fracture of Femur in Total Hip Arthroplasty

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ABSTRACT

Introduction: *A critical problem during a primary total hip arthroplasty (THA) is represented by intraoperative fractures which have a rate between 2.9-27.8%. The most well-known classification for periprosthetic fractures is the Vancouver system, which includes the following indexes: bone quality, fracture site and femoral implant condition. Certainly, the most important measure is the intraoperative recognition of the fracture and choice of the optimal method of stabilization.*

Objectives: *The main objective of our study was to demonstrate that we have chosen the best fracture stabilization technique for the presented case.*

Materials and methods: *We present a case of a 73-year-old female patient who arrived at the emergency room with a Garden IV femoral neck fracture resulting from trauma by falling from the same level. Preoperative evaluation identified the most important risk factors of a possible periprosthetic fracture: osteoporosis, advanced age, body mass index (BMI) > 40 kg/m2, female gender and low metaphyseal-diaphyseal index. Intraoperatively, a classic lateral exposure was decided, followed by the mounting of a cemented total prosthesis. After cementing the femoral component, the operating team noticed a non-comminuted spiroid proximal femur fracture of approximately 10 cm with a diaphyseal trajectory. After the periprosthetic fracture was reduced under direct vision, we made sure that the cement did not enter the fracture path (risk of nonunion) and decided to fix it with a 4 mm thick side plate with eight holes. However, an instability of the fracture was evident and it was decided to add another plate on the anterior part of the femur with a thickness of 4 mm and 8 screws, following by the mounting of cerclage wire. We used cerclage wires for trochanteric fracture.*

Results: *Full weight bearing on the operated limb started gradually from 2.5 months postoperatively. The postoperative radiological examination according to the Barrak and Harris classification is attributed to grade A – complete filling of the cement-bone interface. The montage proved to be stable and permitted the orthopedic reduction of the eventual hip dislocation. X-ray examination one year after surgery: the femur fracture consolidated and the orthopedic implants were not degraded. Full recovery of the right limb was obtained one year after surgery; the gait and amplitude of movements were also recovered.*

Discussion and conclusions: *Fracture of the operated segment is a rather rare complication during the prosthetic intervention. Intraoperative fracture represents a major emergency that requires intervention at the same time surgery. A combination of ORIF and cerclages offers sufficient structural stability for the insertion of the prosthesis stem. Osteoporosis is a risk factor in orthopedic interventions. Full recovery of such cases should be expected if proper reduction and fixation of the intraoperatory fractures was achieved.*

Keywords: periprosthetic fracture, arthroplasty, femoral.

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MÆDICA - a Journal of Clinical Medicine
SECTION II – POSTER PRESENTATION

Knee Osteochondritis Dissecans

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ABSTRACT

Introduction: *Osteochondritis dissecans (OCD) is an idiopathic arthropathy in which subchondral bone necrosis and separation occurs. The resulting osteochondral fragment breaks loose, causing pain and decreased joint motion, alongside swelling, tenderness and popping sounds. Children and adolescents are frequently affected by OCD. Knees, elbows and ankles are especially prone to this disease. Trigger factors are local injuries and high impact sports. Doctors diagnose and stage OCD both clinically and by using X-rays, taking into account if the fragment is partially or completely detached. Magnetic resonance imaging (MRI) is performed to exclude meniscus and soft-tissue tears. Younger patients do not require surgery, unlike adults, in which surgical reconstruction of the condyle defect is the norm.*

Results: *We hereby present 18 cases of patients (eight males and 10 females, age range 37 to 40 years) with knee OCD who have been diagnosed and treated in our clinic. Clinically, all of them presented knee pain, with 75% of males and 50% of females accusing joint stiffness and loss of mobility, and 25% of males and 10% of females reporting knee popping sounds. After knee X-ray and MRI scan, all patients were diagnosed with knee OCD at different severity stages: three males and five females (44% of total) were classified as early stage OCD (i.e., partial delineation of the osteochondral fragment on the femoral condylar surface), two males and three females (28%) as third stage OCD (bone fragments with clear boundaries around the entire circumference, but still attached to the condyle) and the remaining five patients – three males and two females (28%) – as fourth stage OCD (free-floating bony fragments and corresponding "holes" on the condylar surface). Regarding the treatment selected for each group, early stage OCD patients underwent conservative treatment such as limitation of activity, protected weight bearing and knee immobilizers for 12 weeks. Afterwards, follow-up clinical and imaging investigation revealed that, in 7/8 (88%) of patients, symptoms were considerably reduced and no further treatment was necessary. In the third stage OCD cohort, arthroscopic excision and curettage was performed, followed by the same treatment principles as in the first patient group. At the three-month evaluation, all patients (100%) in this group had no pain and presented increased mobility. The fourth stage pool of patients underwent open removal of intra-articular bodies and autologous mosaicplasty using matchstick-like osteochondral grafts from the non-bearing portion of the condyles, while 4/5 (80%) of patients experienced a reduction in pain and tenderness, no popping sounds and improved motion in the affected knee.*

Discussion and conclusion: *Osteocondritis dissecans is a serious condition, which has significant effects on patients' quality of life. The main goal in treating knee OCD is reducing the risk of gonarthrosis and reestablishing the normal motion of the knee. Early referral to an orthopaedist, coupled with appropriate clinical and imaging exams, lead to good outcomes. In the last stages of the disease, both arthroscopic and open surgery have satisfactory results when followed by specialized recovery.*

Keywords: osteocondritis dissecans, mosaicplasty, arthroscopy.

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SECTION II – POSTER PRESENTATION

Management of Medial Collateral Ligament Injuries. Orthopaedic *Versus* Surgical Treatment

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ABSTRACT

Introduction and objectives: *The medial-sided soft tissue structures offer support and help stabilize the medial aspect of the knee. The medial collateral ligament (MCL) and lateral collateral ligament (LCL) are the primary restraints of the knee to varus and valgus forces. Due to the combined stabilizing properties of the collateral ligaments and anterior cruciate ligament (ACL), this may lead to injuries of two structures in course of a trauma. MCL injuries are usually common in orthopedic practice and may occur either isolated or combined with other soft structures lesions such as the menisci, articular cartilage, fractures or ligaments.*

In the literature, good outcomes were highlighted after non-surgical treatment in isolated MCL lesions. A subset of MCL lesions require surgical treatment and it is important to identify the patients with medial instability of the knee. Complete medial collateral ligament injuries associated with other ligamentous structures lesions are more often and may result in a complex mutiplanar instability of the knee. MCL lesion combined with an ACL disruption is the most commonly studied injury pattern in our clinic. Reconstruction/ reinsertion of the MCL is primary, with delayed reconstruction of the ACL.

There are three grades of injury based on medial opening when a valgus stress is applied on the knee at 0 and 30 degrees of flexion, compared with the normal knee. An opening of < 5 mm indicates a grade I injury, 5 to 10 mm a grade II and more then > 10 mm a grade III injury.

Materials and methods: *Most of the young patients who arrived at our clinic had combined injuries of MCL and ACL. We preferred a two-stage surgical intervention, including the reinsertion of the MCL proximal with a corkscrew (mostly 6.5 mm, Arthrex), followed by reconstruction of the ACL if needed. Intraoperative valgus stress is applied to test the new MCL. A knee brace is recommended for almost 3-4 weeks. Later stress tests are used to determine if an ACL reconstruction is needed. It is important to preserve the semitendinosus and gracilis muscles for later grafting if needed.*

Results: *Medial collateral ligament reconstruction is primary for medial knee stability and lower risk of ACL revision. Anterior cruciate ligament reconstruction with MCL non-surgical treatment had a bigger risk of ACL revision. The Swedish Knee Ligament Registry studied 19,457 patients with concomitant MCL*

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and ACL injury and the findings revealed the risk of ACL revision in patients with MCL orthopaedic treated. When combined, ACL reconstruction is delayed after the MCL has healed and the knee motion is normal.

Conclusions: *Recognizing the MCL lesions that require a surgical approach is important in restoring normal knee function. Combined injury of MCL with ACL/PCL is the most common indication for surgical treatment.*

Keywords: medial collateral ligament, anterior cruciate ligament, corkscrew, valgus stress.

MÆDICA - a Journal of Clinical Medicine
SECTION II – POSTER PRESENTATION

Periprosthetic Hip Fractures Prevention – Reporting on Relevant Radiological and Orthopaedic Dependent Variables

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ABSTRACT

Introduction: *Periprosthetic hip fractures are associated with high morbidity and financial costs. With the number of primary total hip arthroplasties on the rise, there is an expected increasing risk of periprosthetic hip fractures.*

Objective: *The current report is based on a case-control study performed at our institution with the aim of describing relevant dependent variables that are associated with diagnosed periprosthetic hip fractures.*

Materials and methods: *Prior to conducting the present study, a research protocol (P.V. 521/05.05.2022) has been submitted to the ethics committee's approval. Radiographic and, when available, computed tomography (CT) images were retrospectively collected for each patient identified in the available database of the 2nd Radiology and Medical Imaging Laboratory from our hospital. The case arm was composed of patients aged over 60 with periprosthetic hip fractures. Patients with such fractures who had an underlying pathology influencing their incidence were excluded from the study. The control arm comprised patients with surviving total hip arthroplasty at the time of the study. Sex, femoral Dorr type, cortical index, varus/valgus placement of the stem, canal fill ratio and the level of preoperative osteoarthritis were investigated. Sample size estimation and power analysis was done post-hoc. Patients were split into two groups after being matched for age and sex. Due to the scarcity of available data selection bias, omitted variable bias, observer bias and rehabilitation adherence could not be accurately assessed.*

Results: *In the presented case-control study, variables including a higher degree of osteoarthritis at the time of primary total hip arthroplasty intervention, Dorr type C femoral canal and stem malalignment were found to be surgery related variables influencing the prevention of periprosthetic hip fracture.*

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Conclusions: *The present study reports on relevant variables influencing periprosthetic hip fracture prevention. Our findings suggest that better patient follow-up assessment, especially rehabilitation adherence, will offer more insight on preventing periprosthetic hip fractures.*

Level of evidence: *III – case-control study.*

Keywords: periprosthetic hip fracture, case-control, radiological assessment.

MÆDICA - a Journal of Clinical Medicine
SECTION II – POSTER PRESENTATION

Personal Experience Report to Bibliographic Review in the Study of Arthroplastic Reconstruction of Acetabular Defects after Hip Arthroplasty

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ABSTRACT

Introduction: *The rate of acetabular cup revision arthroplasty is gradually rising along with an increased risk of osteolysis and prosthesis loosening over time and an increase in life expectancy. Most studies have shown that the acetabular component is affected to a greater extent than the femoral stem.*

Materials and methods: *Precise planification of the chirurgical procedure is indispensable. The bone structure needs to be analyzed and classified in order to take into account the bone defect. Preoperative anteroposterior radiograph of the pelvis is not sufficient for the 3D quantification of the bone defect. An additional important information of the anterior and posterior acetabulum columns can be obtained with the help of special radiographic incidence. Estimation of bone defect is most frequently based on the remaining anatomic marks, the aspect of the contralateral acetabular and/or the surgeon's experience. However, it is often difficult to evaluate severe or bilateral bone defects without the native pelvic anatomy for comparison. A promising option to estimate the native anatomy is the application of a statistical shape model (SSM), which is a parametric model of a given training set of morphometric healthy pelvises.*

Results: *The mean Harris hip score improved from 32.4 preoperatively to 80.7 at the last follow-up. Preoperatively, five patients had severe pain and one moderate pain. At the final follow-up, four patients had no pain and two, slight pain. Following the latest results, four patients reported no pain and two patients described mild pain. Preoperatively, three patients needed a cane for long walks and three, full-time support with crutches. At the last follow-up, all six patients could walk unaided and there was no evidence of component migration compared to the initial postoperative views. A radiolucent line was noted in one of the six hips, but even in that case, the radiolucent line was smaller than 1 mm.*

Discussion and conclusion: *Nowadays, 3D imaging techniques and virtual anatomical reconstruction using a SSM allow novel views on acetabular bone defect analysis. The reported information is potentially useful for implant development, pre-clinical testing, preoperative planning (especially after 3D printing of the pelvic segment requiring arthroplasty reconstructive revision) and the amount of bone graft. The goals of revision total hip arthroplasty include implant stability through reconstruction of large bone defects, restoration of range of motion and biomechanics of the hip joint, and normalization of uneven limb lengths.*

Keywords: acetabular revision, bone graft, acetabular bone defect.

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MÆDICA - a Journal of Clinical Medicine
SECTION II – POSTER PRESENTATION

A Rare Case of Patellar Pseudoarthrosis

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ABSTRACT

Introduction: *Patellar fractures represent approximately 1% of all types of fractures. Patella has an important role in the extensor mechanism of the knee, increasing the lever arm and improving the quadriceps efficiency. Non-union of patella is a rare and uncommon condition in most of the cases. In the literature there is limited evidence on the management of this complication. Surgery is the gold standard treatment involving a wide gap and failed extensor mechanism. Decision-making in the surgical treatment of this complication is based on the factors that have led to the development of the pseudarthrosis, the potential impact of the biomechanical effects of a total patellectomy and the presence of an intact extensor mechanism for later reconstructive surgery if needed. Tension band wiring is the surgical procedure of choice for patients in the majority of cases.*

Materials and methods: *Patella non-union is a rare pathology in our clinic, with only few cases being reported overall. The surgical treatment includes either a single stage operation – a V-Y plasty/Z plasty, followed by osteosynthesis or patellectomy (partial or total) – or a two-stage operation, consisting of preoperative patellar traction to lower the proximal fragment and achieve lengthening of the quadriceps. In the literature, the two-stage intervention had better results than the single stage one. The biggest challenge in non-union patellar fractures is not the osteosynthesis, but rather the quadriceps contracture that leads to a wide gap of the fractured fragments. We prefer a single stage operation, with a quadriceps-plasty through a Z incision and stabilization of the fragments with tension band wiring +/- cerclage. Postoperative evolution depends on many factors, but knee range with no extensor lag is an extremely rare phenomenon in patellar pseudarthrosis.*

Results: *The surgical intervention involves a resection of the scar tissue, which was preventing the formation of new bone, quadriceps-plasty to facilitate the open reduction and fixation with a tension band wiring + two K-wires. Immediate after surgery, an X-ray examination is recommended to highlight the reduction of the articular surface. A relative malreduction can be caused by the retraction of the soft tissue and poor quality of the bone. Postoperative immobilization of the knee in extension for 4-6 weeks is necessary.*

Discussions and conclusions: *The patella is an integral part of the extensor mechanism. Surgical treatment has an important role in restoring the function of the knee, with normal flexion and extension in our patients with patella non-union fractures for which pseudoarthrosis cure, quadriceps Z plasty and*

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ORIF with tension band wiring was the surgical option. The postoperative evolution was acceptable with limited flexion of 100⁰-115⁰. Patellectomy is a surgical option, which has also the major disadvantage of prolonged rehabilitation. Patellectomy leads to a significant loss of the extensor strength postoperatively in the majority of cases. It is contraindicated in younger patients due to the importance of the patella in the knee articulation. The advantage of tension band wiring is represented by the immediate postoperative rehabilitation.

Keywords: patellar pseudarthrosis, tension band wiring, quadriceps-plasty.

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SECTION II – POSTER PRESENTATION

Reflections on the Advancements, Trends and Future Prospects of Lower Limb Prosthesis

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ABSTRACT

Objective: *The purpose of this systematic review was to update the information about the prosthesis of the amputated lower limb and to create a bridge between the results obtained in the past and the new objectives of technology involving the most sophisticated and updated gadgets. This review aims to explore how human–prosthesis interfaces have changed over the last decades, how research has contributed to an understanding of interface mechanics, how clinical practice has been informed as a result and which might be the potential future directions.*

Methods: *We performed an electronic search using 18 different databases supplemented with manual searches* via *the PubMed, EMBASE and ISI Web of Knowledge databases from 2000 to 2022. A combination of the following keywords and their synonyms was used: lower-limb prosthesis, lower-limb amputation, prosthetic foot, prosthetic suspension, socket, and physiological and biomechanical parameters. Based on their abstracts, studies were further considered when: 1) papers were written in English or French; and 2) the study design was either a randomized controlled trial, a cohort study, or a case-controlled study, allowing at least some control of confounding factors. The study investigated patients with a transfemoral, through-knee, or transtibial amputation.*

Results and discussions: *Prosthetic feet have seen the incorporation of new designs and materials to improve the dynamic performance in a variety of areas. Examples of these improvements include the ability to control the dynamic load and the memory return of the material once that load is removed. These new materials have allowed for prosthetic feet to become increasingly lighter and more cosmetic. In the 1980s, in an attempt to develop more true to life and energy efficient modular components, a new generation of feet was developed, including stationary ankle flexible endoskeletal (SAFE) foot and dynamic elastic response or energy storing feet. These designs were highly successful and allowed prosthetic users increased freedom with respect to the activities one could participate in. This review demonstrated that, over the last years, clinical research has improved our understanding of lower limb prosthesis designs and their effects; however, high quality research is still needed. In particular, there have been advances in the development of volume and thermal control mechanisms with a few designs having the potential for clinical application. Similarly, advances in sensing technology, soft tissue quantification techniques, computing technology, and additive manufacturing are moving towards enabling automated, data-driven manufacturing of sockets. In people who are unable to use a prosthetic socket, osseointegration has the potential to facilitate neuromuscular integration.*

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Conclusion: *Identification of advances and innovations should bring to light current trends in lower limb prosthetics and aid in education. There are currently no prosthetics capable of replicating anatomic function, there have been radical advancements in prosthetic technology, medical science, and rehabilitation in the past years, vastly improving functional mobility and quality of life for individuals with lower-limb amputations. What once seemed impossible is rapidly becoming reality. The future seems limitless, and the replication of anatomic function now seems possible.*

Keywords: prosthetics, prosthetic interface mechanics, prosthetic design, lower limb prosthesis, lower limb amputee.

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SECTION II – POSTER PRESENTATION

Seasonal Variation of Orthopaedic Trauma Admissions in a Hospital from Central Transylvania

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ABSTRACT

Introduction: *Trauma represents a major reason for morbidity in the general population. Environment and weather conditions can influence the rate of trauma cases.*

Aim: *This study aims to determine if there is a real seasonal variation in trauma pathology in patients admitted to our hospital in order to optimize our resources. This ensures providing proper care and correct economical management.*

Materials and methods: *A retrospective review analyzing 7129 trauma patients admitted to our hospital between 01/2018 and 08/2022 was performed. We divided the year into halves and considered the cold season from October to March and the hot season from April to September. Basic demographics including age, gender, and area of provenance (rural vs urban) were collected.*

Results: *Socio-demographic data showed that subjects had a mean age of 66.23 years, a female to male ratio of 1.42 to 1, and 60% of them came from urban areas and 40% from rural areas. Of the 7129 cases, 3396 occurred during the cold season and 3733 during the hot season, thus obtaining a hot season to cold season ratio of 1 to 1.1. Of all pathologies, the most frequently observed ones included trochanteric fractures (24.17%), femoral neck fractures (16.20%), ankle fractures (including bimalleolar and trimalleolar fractures) (15.86%), tibial shaft fractures (6.31%), proximal humeral fractures (4.84%), femoral shaft fractures (4.12%), tibial plateau fractures (3.87%), humeral shaft fractures (3.09%), distal radial fractures (2.65%) and patellar fractures 2.03%). Comparing all obtained data, we observed that the pattern of frequency in pathology was preserved in both seasons. We also encountered a higher rate of fractures in younger patients (aged between 18 and 59 years) during the hot season (54.36%), whereas the number of cases in older patients (> 60-year-old) remained similar throughout both seasons ($p<0.017$).*

Discussions and conclusions: *Trauma place a major social and economic burden on our healthcare system; therefore, cost-effectiveness should be a primary concern. Trauma cases in our hospital vary with the weather, with the number of admissions being higher in the hot season, especially in a younger population. Daylight and level of activity seems to be a contributing factor to this variation. Studies like this one could allow us to perform a better financial planning.*

Keywords: trauma, admissions, weather, season, adult, emergency.

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SECTION II – POSTER PRESENTATION

The Importance of Knee Biomechanical Axes in Chronic Anterolateral Instability and Prevention of Osteoarthritis – Case Review

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ABSTRACT

Background: *This review will discuss the possible consequences of chronic knee anterolateral instability associated with genu varum in young active patients. The natural evolution of chronic anterior cruciate ligament (ACL) lesion is an increase cartilage wear of the medial compartment, risk of menisci lesions and progression to osteoarthritis. We will review a case with chronic instability, varus deformity, menisci lesions and describe our indications, preoperative planning and technique for opening wedge HTO fixed with medial high tibial plate and anatomic ACL reconstruction with hamstring autograft.*

Materials and methods: *A 43-year-old male with chronic knee instability known for five years underwent a magnetic resonance (MRI) scan which showed a ACL rupture and a medial meniscus posterior horn lesion. Radiographs revealed a slightly narrowing of medial compartment of the knee and a varus deformity. At clinical exam he had joint pain, Lelli, Lachman and pivot test positive. A diagnostic arthroscopy was performed and the menisci lesions were assessed and addressed. Arthroscopic ACL reconstruction with hamstring autograft (SMT+G) was performed. For the varus deformity it has been decided to perform a opening wedge high tibial osteotomy (HTO). Postoperatively he was permitted partial weight bearing (10 kg) for the first four weeks and after, progressively increasing the weight each week until the eighth week, when full weight baring was permitted.*

Results: *At follow-up, full range of motion is obtained after 12 weeks postoperatively. The patient has resumed sports activities after six months and he was free of instability and free of pain.*

Discussion and conclusions: *Combined ACL reconstruction and opening wedge valgus HTO relieved pain and restored knee stability, enabling return to sport. A knee alignment and stability restoration treatment should be considered at the earliest stages in most cases of young patients with sustaining sport activities.*

Keywords: arthroscopic ACL reconstruction, opening wedge high tibial osteotomy, hamstring autografts.

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SECTION II – POSTER PRESENTATION

The Influence of Covid-19 Pandemic on University Educational Activity

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ABSTRACT

Objectives: *To analyze the influence of the Covid-19 pandemic on the lectures and practical activities and also the emotional and psychological impact on students.*

Materials and methods: *We conducted an observational cross-sectional study designed around an online Google Forms questionnaire that was distributed to the university students attending the Romanian, English and French sections. The evaluation time frame was June 2021–February 2022. The questionnaire had seven main parts, gathering data about demographics, PHQ-9 depressive disorder, GAD-7 anxiety screening, online education evaluation, pandemic lectures-practical activities-exams, and a last section consisting of questions coming from fellow students from the orthopedics department.*

Results: *Two hundred fifteen students completed the questionnaire. Of all the 215 respondents, 67% had not been infected with the Sars-Cov-2 and 200 had received an anti-Covid vaccine; 14 students had at least one case of death in their family that was attributed to Covid-19. The PHQ-9 questionnaire showed that 24.19% of respondents fitted the criteria for mild depression, 11.63% for moderate depression and 6.98% for severe to major depressive disorder. The anxiety screening showed a score suggestive of mild anxiety in 34.42% of students, moderate anxiety in 24.65% of students, and severe anxiety in 18.60% of students. An advantage of going online, as agreed by 78% of students, was the ability to contact academic staff more easily through Microsoft TEAMS online platform. It was also gratifying that 84% of students were satisfied with the platform. The majority of students (63%) expressed their wish that some courses should continue online even after the restrictions imposed by the Covid-19 pandemic were lifted. However, 62% of students said they would not have gained the same knowledge through online teaching as they could have if the courses had been held in a physical format; 79.53% of students believed that switching to online teaching was a good alternative for the pandemic period. At the same time, the decision of 68% of respondents in choosing the residency would be influenced by the lack of practice in some departments.*

Discussion and conclusions: *The pandemic has affected the entire world, and medical students were no exception. Technology provided a good solution for university education and prevented a complete shutdown of activity, which could have caused delays in the graduation process. Medical students had a high prevalence of depression and anxiety, compared to both the general population and the baseline level exhibited by medical students before the pandemic, which was a fact of particular concern. It is important to be aware of the negative effects of the pandemic in order to be able to mitigate them.*

Keywords: Covid-19, pandemic, university, academic, teaching, PHQ-9 depressive disorder, GAD-7 anxiety.

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SECTION II – POSTER PRESENTATION

The Role of Percutaneous Transpedicular Biopsy for the Confirmation of Spondylodiscitis Diagnosis: Case Series Comparison

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ABSTRACT

Introduction: *Spondylodiscitis is infrequently difficult to diagnose as infectious agents vary in virulence and the immune response they generate. An early and correct pathogen identification is crucial for an efficient disease treatment and maximizing chances of healing. The surgical technique demonstrated here is a reputable option for acquiring biological material around the vertebral bodies for microbiological and histological analysis. In addition, TB therapy poses its own regimen of biological adverse reactions and cannot be empirically administered to patients solely based on suspicion.*

Method: *A series of 10 patients, who were referred to the clinic for progressive installment of pain and limited function localized to the thoracic/lumbar spine (between January 2018 and December 2020) with suspected spondylodiscitic disease, benefited from percutaneous transpedicular biopsy of lesions visible on computed tomography (CT) / magnetic resonance imaging (MRI) that were clinically suspected as infectious discitis. Patients were included based upon imaging and laboratory suggestive criteria for disco-vertebral infection and were compared with a group of 10 patients who underwent open biopsy for infectious discitis suspicion during vertebral fusion.*

Results: *The laboratory analysis results are comparable in terms of sensitivity and specificity, with some results coming back positive for pyogenic bacteria or TB.*

Discussions and conclusions: *The addition of low surgical complication rates and the ease of specimen procurement makes the transpedicular biopsy a very useful procedure in the early stage of confirmation of spondylodiscitis diagnosis. Furthermore, in patients not fit for open surgery, empirical antibiotic regimens may lead to disease progression, which is to be avoided in order to ensure the highest chance of infection eradication.*

Keywords: spondylodiscitis, transpedicular biopsy.

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MÆDICA - a Journal of Clinical Medicine
SECTION II – POSTER PRESENTATION

The Use of Morselized Bone Allograft for Acetabular Reconstruction in Revision Hip Arthroplasty – Short-Term Results

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ABSTRACT

Introduction: *Loosening of the acetabular component after total hip arthroplasty is usually complicated with significant loss of bone stock. Bone grafting is sometimes needed in revision surgery to fill cavitary defects and restore bone stock.*

Objective: *The purpose of this study was to follow-up the short-term results regarding the integration rate of morselized bone graft used for repair of acetabular defects in revision hip arthroplasty and the complication rate.*

Materials and methods: *We included in the present study 25 patients who were operated in "Foișor" Orthopaedic Hospital between January 2017 and July 2020, with a total of 27 hips revised, two of the patients being operated bilaterally in the above-mentioned time frame. All included hips were classified using the Paprosky Classification. Morselized bone graft was used in all cases for managing the acetabular defects, in combination with trabecular metal revision cup, primary uncemented pressfit cup or an antiprotrusion cage. Bone graft integration was assessed based on radiological criteria regarding cup movement greater than 2 mm or a change in angulation greater than 5°, appearance of trabeculae and absence of graft resorption.*

Results: *Patients' mean age at the time of revision was 60 (range 28-81) years. According to Paprosky classification, from a total of 27 hips, eight (29.6%) had a type II acetabular defect (three with IIA, three with IIB and two with IIC) and 19 (70.4%) a type III defect (eight with IIIA and 11 with IIIB). The mean follow-up period was 2.5 (1-5) years and the graft integration rate at this time 85% (23/27 hips) with an average of 2 (1-5) femoral heads used. The main reason for revision surgery was aseptic loosening (23/27) and septic loosening with infection control needed before revision (4/27). Postoperative complications included infection (one case) and dislocation (three cases). Infection was controlled by antibiotic spacer implantation and dislocation was managed by closed reduction. There were no cases of aseptic loosening of the acetabular component requiring subsequent revision surgery.*

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Conclusions: *The use of morselized bone graft represents a safe and effective method for managing large bone defects in the acetabulum, with good integration rate, which provides restoration of bone stock that may be needed in future revisions, with no particular complications associated with its use.*

Keywords: revision arthroplasty, morselized bone allograft, acetabular defect.

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SECTION II – POSTER PRESENTATION

Valgus Deviation – Is Primary Cruciate-Substituting TKA a Viable Option? A Case Review

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ABSTRACT

Introduction: *Usually, patients with Grade III valgus knee (axial deformity greater than 20°) require a constrained total knee arthroplasty (TKA), mainly because of the peculiarities of soft tissues, the fact that lateral structures are tight and the medial stabilizers are not functional, and because of the bony defects which are usually found on the lateral tibial plateau.*

Objective: *Our aim was to use a primary TKA for a young patient with this kind of deformity in order to preserve as much bone as possible.*

Materials and methods: *We performed surgery, which was prepared with the unconstrained and constrained variants of the prosthesis. Intraoperatively, we decided that a primary prosthesis was viable for this patient. As such, we used an unconstrained, cruciate substituting medial-pivot knee system with minimal loss of bone. The patient underwent day one physical therapy in order to preserve and extend the range of motion.*

Results: *The result was very good in terms of flexion-extension balance, valgus–varus balance and also regarding the tension in the collateral ligaments. The patient was able to walk with a walking aid, to maintain balance, from day two postoperatively. Five days after surgery, he was comfortable enough to walk without any aids. At discharge the patient had moderate pain which was managed by oral medication.*

Conclusions: *Primary TKA may well be a viable option in selected patients with big knee deformities and must be considered in all patients, especially in younger ones, to whom may undergo a TKA revision in the future.*

Keywords: TKA, cruciate-substituting, medial-pivot, valgus knee, axial deformity, unconstrained.

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SECTION II – POSTER PRESENTATION

What to Do in Perilunate/Lunate Dislocations

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ABSTRACT

Objectives: *Perilunate dislocation is a rare commonly missed on initial presentation and severe disruption of the anatomy of the carpal bones. The usual mechanism of injury is represented by high energy trauma, which happens when the wrist is extended and ulnarly deviated. The Mayfield classification describes four stages of the lesion.*

Material and methods: *In perilunate/lunate dislocation, the sequence of events, depending on the severity of the lesion, starts from the scapholunate ligament, followed by disruption of capitolunate articulation, the lunotriquetral articulation, disruption of dorsal radiocarpal ligament and results in rotation and dislocation of the lunate into the carpal tunnel. The dislocation can affect the greater arc, which associates ligamentous lesions with fractures of the ulnar, radial or carpal bones, or the lesser arc, purely ligamentous. The lesion can be either a perilunate dislocation with the lunate in the normal position or a lunate dislocation, which can either be volar or dorsal. The Mayfield classification follows the pathoanatomy of the dislocation. On the ER presentation there is usually an acute wrist swelling and pain, median nerve symptoms most commonly occur in a stage IV Mayfield dislocation with the lunate in the carpal tunnel. Periarticular and lateral radiographic views are used for diagnosis. A computed tomography (CT) scan can be used for a better evaluation of the severity of the lesion. is. Depending on the severity of dislocation, there are different operative techniques and indications for definitive treatment, from open reduction internal fixation (ORIF) and ligamentous repair to proximal row carpectomy or total wrist arthrodes.*

Results: *The outcome of a perilunate/lunate dislocation depends on multiple factors, associated lesions (fractures of the carpal bones), chronic/acute injury, complications. The severity of lesion is caused by the complications, chronic carpal instability, median nerve compression, avascular necrosis of the lunate, rupture of tendons, malunion, nonunion. The nonoperative treatment (closed reduction and casting) has no indication as a definitive management due to poor functional outcomes and recurrent dislocation.*

Conclusions: *The lunate/perilunate dislocations are caused by high energy traumas of the hand. This type of lesion should be treated as an emergency. For the best outcome it should be treated in the acute phase (< eight weeks). The treatment requires urgent open/close reduction and stabilization.*

Keywords: perilunate dislocation, carpal trauma complications.

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