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ABSTRACT BOOK

Just-A-Minute Papers

Date: 2019-12-05
Session: Just-A-Minute Session 1
Time: 10:00 - 10:30
Room: Lounge

Abstract no.: 54765

THE OUTCOMES OF CLOSED FRACTURE SHAFT HUMERUS IN ADULT PATIENTS TREATED WITH A FUNCTIONAL BRACE

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Objective: Evaluate the clinical and radiographic outcomes of closed humeral shaft fractures treated with functional brace. Study design: Descriptive case series. Material and Methods: Twelve patients of mean age 36 years (range 16-70) with closed humeral shaft fractures meeting the inclusion criteria were initially stabilized by U-slab followed by a functional brace. Clinical and radiographic evaluations were performed weekly then every two weeks until bone union. Clinical evaluation was performed according to Hunter Criteria, Constant Shoulder Score, and Mayo Elbow Performance Score as well as measuring the range of movement at the end of the study. Coronal and sagittal angulations were measured during the final follow-up. Results: All patients (100%) achieved union after a mean of 10 weeks (range 7-12). Functional evaluation using Hunter Criteria showed 8 patients (66.7%) as excellent (GV), while three patients (25%) as very good (GIV). Mean Murley Score was 91.8 with 9 patients (75%) scoring above 90. Mean Mayo Score was 96.2. The mean final varus-valgus angulation was 5.6o degree, and for sagittal angulation was 1.5o. The initial angulation deformities were considerably corrected spontaneously without manipulating the fractures. There wasn't a statistical relationship between the final angulation and the functional outcomes ($p>0.05$). Conclusion: Closed humeral shaft fractures treated with a functional brace achieved high union rate with excellent clinical and radiographic outcomes. Therefore, the conservative treatment by functional brace is one of the most effective and safe methods to treat humeral shaft fractures. Key words: Humeral shaft fractures, Conservative treatment, Functional brace.

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Abstract no.: 54780

COMPARISON OF FUNCTIONAL OUTCOME IN INTERTROCHANTERIC FRACTURE OPERATED WITH PROXIMAL FEMORAL NAIL AND CALCAR REPLACEMENT BIPOLAR HEMIARTHROPLASTY IN ELDERLY PATIENTS

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Introduction: Despite availability of various implant options for internal fixation of Intertrochanteric fracture, none of the implant proves to be gold standard in its management. In this study, we compare the functional outcome in intertrochanteric fractures treated with PFN and Calcar replacement bipolar hemiarthroplasty (CRBH). Material and Methods: A prospective randomised study was conducted at tertiary care hospital between 2014-2016 including 50 patients with 25 patients in each group. Group 1 patients operated with PFN and Group 2 patients with CRBH. Functional Outcome was assessed using Harris Hip score and Parkar Mobility score at 1 year and 2 year post operatively. Results: The mean surgical time for Group 1 was 71.4 ± 22.48 minutes with mean blood loss of 79.8 ± 20.94 ml. For Group 2, the mean surgical time was 110.8 ± 24.18 minutes with mean blood loss was 197.2 ± 45.37 ml. CRBH allowed early weight bearing with mean partial weight bearing was 1.76 ± 0.88 days and mean full weight bearing was 6.44 ± 1.45 days as compared to Group 1 where mean partial weight bearing was 6.40 ± 1.55 days and mean full weight bearing was 13.48 ± 2.95 days. There was a significant difference in Internal rotation of hip between two groups with mean Internal rotation of $11.6 \pm 4.94^\circ$ for Group 1 and $16.6 \pm 5.35^\circ$ for Group 2. The Mean Harris Hip score and Parkar mobility score was statically significantly high for CRBH group at 1 year and 2 year post operative follow up. Conclusion: Bipolar hemiarthroplasty with calcar replacement serve as an effective tool for management of unstable intertrochanteric fracture in elderly patients

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LOWER LIMB MALROTATION FOLLOWING MINIMALLY INVASIVE PLATING IN DISTAL TIBIA FRACTURES

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Introduction: Minimally invasive percutaneous osteosynthesis (MIPO) plating techniques for distal tibia fractures have demonstrated good outcomes in published literature. The primary aim of this study is to determine the severity of tibia malrotation following MIPO plating. The secondary aim is to determine the degree of functional impairment if there is significant malrotation present. This is determined using the AOFAS Ankle-hindfoot score. Methodology: This was a level 2 prospective cohort study. A total of 24 patients were recruited in this study, with 16 patients completing follow up at 1 year. All patients underwent surgery with MIPO plating techniques done by a fellowship trained consultant orthopaedic surgeon. Post operatively, all patients underwent a CT scan of bilateral lower limbs using a standard CT scanogram protocol. The CT scans were reviewed and degree of malrotation recorded. AOFAS ankle-hindfoot score was recorded at 6 months and 1 year follow up. Results: 9 of the 16 patients (56%) had tibia malrotation (defined as malrotation angle >10 degrees). The mean tibia malrotation angle measured on CT was 10.6 degrees. The average AOFAS scores at 6 month follow up was 82.4 and the average AOFAS scores at 1 year follow up was 84.3. The CT malrotation scores were not significantly associated with the AOFAS 6 month (spearman rho -0.386) and 1 year scores (spearman rho -0.343). Conclusion: Tibia malrotation following MIPO plating of distal tibia fractures had an average malrotation angle of 10.6 degrees. This degree of malrotation does not appear to have significant midterm functional impact.

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Abstract no.: 54796

TREATMENT OF HALLUX VALGUS USING THE ISHAM REVERDIN PERCUTANEOUS TECHNIC: ABOUT A PERSONAL SERIES OF 468 MOROCCAN CASES

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INTRODUCTION: The aim of this study is to report the results of percutaneous osteotomy of M1 for the treatment of mild and moderate Hallux valgus using the Isham Reverdin technique and Akin osteotomy of P1 **OBJECTIVES:** Objectives are the same as those of open surgery: - Reorientation of distal articular surface of M1 - Reducing of volume of the exostosis - lateral arthrolysis of metatarsophalangeal joint - Reduction of the HAV of P1 **METHODS:** This is a prospective monocentre study. The same orthopaedic surgeon. The technique was indicated for treatment of hallux valgus in 468 feet and 414 patients between June 2009 and March 2019 with an average of follow up of 65 months (10-130 months) Hallux valgus was included with an IMA between 15° and 20°. Exostosectomy was performed in all cases and also percutaneous adductor tenotomy AKIN osteotomy was associated in all cases Results were evaluated clinically and radiographic controls used AOFAS score **RESULTS:** Very good 55,4%, Good 37,2%, Medium 5,8%, Bad 1,6%, 92,6% were satisfied, AOFAS: 52 to 92 **CONCLUSION:** S.ISHAM-REVERDIN osteotomy doesn't need internal fixation. There is no instability if the lateral cortical is preserved. Post op bandaging is important and made by the surgeon himself (50% of success of operation). Self-rehabilitation decreases the loss of mobility of MP joint. MIS surgery is less aggressive, practicable in ambulatory. Perfect codifications of the indications. Very long learning curve. Courses on cadaver lab is very important. Mentoring is desirable.

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Abstract no.: 54802

ROLE OF CONSERVATIVE TREATMENT OF RACHITIC KNEE DEFORMITIES: OUR EXPERIENCE IN 198 KNEES

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Introduction: Defective mineralization of osteoid matrix prior to physal closure causes rickets. Recent increase in the incidence has been reported from both developed and developing nations. Coronal plane knee deformities are among the commonest presentation of rickets. Methods: A prospective study was conducted from January 2009 to December 2011 for clinical and radiological evaluation of knee deformities in nutritional rickets. A total of 117 patients with 198 coronal plane knee deformities between 2 years and 12 years age of rickets were enrolled in this study. Results: In our study, 65 genu varum and 133 genu valgum deformities were noted. Seven genu varum (10.7%) and 37 genu valgum (28%) deformities required surgery. other deformities corrected with time. 58 genu varum got corrected completely obtaining an average of 5 of valgum in an average of 6.3 months. The average rate of spontaneous correction was 1.9 a month. Ninety six valgum got corrected obtaining an average of 4.7 valgum in an average of 13.3 months. The average rate of spontaneous correction was 0.92 a month. Conclusion: Most of the rachitic deformities get corrected with age. Genu varum is having better chances and a faster rate of correction as compared with genu valgum. We believe varum above 4 years and 18 of valgum above 9 years usually do not correct and may require surgical intervention.

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Abstract no.: 54832

DEVELOPMENT AND VALIDATION OF A RISK SEVERITY SCORE IDENTIFYING PATIENTS WITH CEREBRAL PALSY AT HIGH-RISK FOR DEVELOPING SURGICAL SITE INFECTION AFTER SPINAL SURGERY

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Background: Surgical site infection (SSI) following paediatric spinal surgery is a well-recognized complication especially in patients with cerebral palsy (CP). The purpose of this study is to develop and validate a risk severity score (RSS) system based on known preoperative information to predict SSI. Methods: Consecutive paediatric patients with CP undergoing posterior spinal instrumentation and spinal fusion at four hospitals between 2006- 2011 were included in the development phase. In the validation phase, paediatric patients with CP who underwent the same procedures at 13 hospitals between 2008-2017 enrolled in a registry were included. Patient characteristics, preoperative lab values, clinical data and status of SSIs within 90 postoperative days (Center for Disease Control's definition) were recorded. Results: Among the 255 patients in the development stage, the risk of SSI was 11%. A final prediction model included non-ambulatory status (OR 4.0), diaper dependent (OR 2.5), age < 12 years (OR 2.5), major coronal curve magnitude >90° (OR 1.3), behavioural disorder/delay (OR 1.3), and revision surgery (OR 1.3) with a good predictive ability (73.4%). This model was then validated on 390 patients with 8.2% SSI. The prediction model again demonstrated excellent predictive ability (74.3%) and calibration of the model was p=0.435 indicating no difference between predicted and observed values. Conclusions: The RSS system has demonstrated excellent predictive ability. Risk of SSI in individual patients calculated by the model will allow shared decision making, better informed consent, guide perioperative optimization and standardize comparisons of surgical outcomes among medical centres.

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Abstract no.: 54841

EFFECT OF EXTRACORPOREAL SHOCK WAVE THERAPY IN SICKLE CELL DISEASE RELATED-HIP OSTEONECROSIS

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Background and Purpose: Sickle cell disease related-hip osteonecrosis is a progressive disease with significant morbidity and long term disability. Different modalities of treatment including both surgical and nonsurgical options have been used with varying levels of success. Extracorporeal shock wave therapy (ESWT) is a non-operative treatment option described for early-stage disease, however; exact indications have not been established yet. To the best of our knowledge, the use of ESWT for the management of sickle cell related-hip osteonecrosis has not been described. The aim of this study was to assess the effectiveness of ESWT in the treatment of osteonecrosis of the femoral head (ONFH) in sickle cell disease patients. Patients and Methods: Eighteen hips were included in this study. Pre- and post-operative clinical assessment utilizing VAS pain score and Harris hip scores were performed. Radiological evaluation using plain radiographs and MRI were performed pre- and post-operatively. Results: The overall clinical outcomes were improved in 60.6%, unchanged in 12.1% and worsened in 27.3%. Plain radiographs showed only 6.06% improvement, 78.78% remain unchanged while 15.1% were worsened. On MRI, the lesions showed progression in 4.7%, regression in 42.9% and were unchanged in 52.4%. Conclusion: Functional outcomes of sicker patients treated with ESWT for early ONFH appear to be effective although long-term results are needed to validate the efficacy of ESWT in sickle cell related-hip necrosis.

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Abstract no.: 54846

**SUPRACONDYLAR PERIPROSTHETIC FEMORAL FRACTURES
OUTCOMES FOLLOWING RETROGRADE INTRAMEDULLARY NAILING
VERSUS DISTAL FEMORAL PLATING: A SYSTEMATIC REVIEW.**

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Background: Predicting the effectiveness of intra-medullary nailing versus plating remains a crucial question in the management of supracondylar periprosthetic fractures above a total knee arthroplasty. Using the PRISMA guidelines a systematic review comparing the two interventions was conducted. Methods: A systematic search was performed using PubMed, EBSCOhost (EMBASE, CINAHL), and the Cochrane Database. Studies, which reported comparative outcome data following the two interventions, were included. Pooled estimates were calculated when quantifiable outcomes for each group were reported in a minimum of three studies at final follow-up. Results: A total of 151 records were generated from the search. Eight studies met the eligibility criteria and were included in the final analysis. The final studies consisted of case series and parallel comparative studies (Level III&IV). All studies were mitigated by heterogeneity and methodological limitations. Nevertheless, clinical outcomes showed a tendency that favours intramedullary nailing in relation to: time to union standardised mean difference (SMD)=0.28 (95% Confidence Interval (CI) -0.02, 0.58), non-union rate odds ratio (OR)= 1.12 (95% CI 0.55, 2.27), re-operations OR=0.74 (95% CI 0.39, 1.41), and deep wound infection OR=1.41 (95% CI 0.40, 5.00). Conclusions: Despite recurring limitations in the conduct and presentation of the studies, results tended to favour intra-medullary nailing. It is essential that treatment choice allow early mobilisation while minimising the risk of postoperative complications. Therefore, future priority must be awarded to higher quality research to either confirm or refute earlier results.

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Abstract no.: 54858

SCARF OSTEOTOMY WITHOUT INTERNAL FIXATION FOR CORRECTION OF HALLUX VALGUS

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Introduction: Hallux valgus is a common condition with in excess of 120 procedures described in the literature for its correction. Traditionally, distal metatarsal osteotomies have been employed in the treatment of mild deformities, with proximal osteotomies being reserved for more severe presentations. The Scarf osteotomy without internal fixation allows large translations which can successfully correct severe hallux valgus deformities, without limitations related to screw placement. Methods: This is a retrospective series performed over a five year period. Nineteen cases were identified, with an average follow up time of 18,6 months. Visual analogue scales were used to obtain preoperative and postoperative pain and cosmetic scores. The hallux valgus angle (HVA) and intermetatarsal angle (IMA) were assessed on preoperative and postoperative AP weightbearing foot X-rays. Results: The mean pain score improved from 6,98/10 preoperatively to 1,02/10 postoperatively. The mean preoperative HVA and IMA were 35.04 and 15.04 degrees, respectively. The mean postoperative HVA and IMA were 11.54 and 4.83 degrees, respectively. Discussion: We report a series of cases of the modified Scarf osteotomy as described by Maestro—a versatile, cost-effective, safe and reliable technique with the potential for three dimensional correction. Whilst this is a technically demanding procedure, we recommend the use of the modified Scarf osteotomy in the treatment of a wide range of hallux valgus deformities. Conclusion: We report excellent short-term outcomes in our cohort—this variant of the Scarf osteotomy permits a large amount of lateral translation, without limitations traditionally related to screw placement.

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ELLIPSE METHOD FOR MEASURING LIAW'S ANTEVERSION OF THE ACETABULAR COMPONENT AFTER TOTAL HIP ARTHROPLASTY

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Introduction: Of all radiological methods for measuring anteversion of acetabular component, for post- total hip arthroplasty (THA) surgery, Liaw's anteversion (standardized anteversion), measured by ellipse method provided a new era of precise measurement of cup's anteversion. Methods: We collected pelvic x-rays from patients with operation history of THA in one institution in the last 1 years. Repeated standard deviation (RSD), and two-tailed t-test were manipulated for each data of Liaw's anteversion and Radiographic anteversion. Results: Of all the included 105 patients, there were 434 radiographic images. We measured radiographic anteversion, and Liaw's anteversion by Ellipse method with Elliversion Software. The respective RSD of radiographic anteversion, and Liaw's anteversion were 1.802, and 0.795. The two-tailed t-test with 95% confidential intervals of radiographic anteversion, and Liaw's anteversion reported 3.542, and 1.563 individually. Discussion and Conclusion: The Ellipse method for measuring Liaw's anteversion was a more precise method to evaluate the anteversion of the cup than any other methods. The significant variance of acetabular Liaw's anteversion was 1.563. Besides, it was also a cheaper method to predict the movement of implanted cup than CT-assisted method. It could be applied for predicting the rate of cup movement.

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Abstract no.: 54906

DOES FEMORAL NERVE BLOCK FOR HIP FRACTURE PATIENTS REDUCE POSTOPERATIVE DELIRIUM?

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Purpose: We investigated whether the femoral nerve block before hip surgery in elderly patients could reduce the incidence of delirium. Materials & Methods: From January 2015 to October 2017, 486 patients who underwent surgical treatment for hip fracture in our orthopaedic department were retrospectively studied. To assess the association between delirium and femoral nerve block, only 15 or more points were included in the MMSE test. Patients with dementia and Parkinson's disease were excluded. We divided the patients who underwent femoral nerve block in group A and those who did not perform in group B, and compared the two groups. Delirium was diagnosed by confusion assessment method (CAM) and the patient's medical records were analysed. Univariate analysis and multivariate analysis were performed statistically. Result: A total of 241 patients were included in the study. 165 patients underwent femoral nerve block and 76 patients did not. 18 patients (10.9%) and 21 patients (27.6%) had delirium, respectively. The postoperative VAS score was higher in patients without femoral nerve block and the amount of opioid used in PCA was also higher. However, intraoperative opioid use after surgery did not show any significant difference between the two groups. Conclusion: Our study showed that femoral nerve block was associated with a lower incidence of postoperative delirium compared to the PCA only treatment. These results suggest pain management strategy should be considered in future trials of postoperative delirium.

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Abstract no.: 54980

EFFECT OF FASCIAL SURGERY ON SPASTICITY, DYSKINESIA AND FUNCTIONS OF UPPER EXTREMITY IN CEREBRAL PALSY

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The upper extremity of persons with cerebral palsy is characterised by spasticity, dyskinetic movements and contractures that limit functioning. Orthopaedic Selective Spasticity Surgery (OSSCS) was developed in Japan for reduction of spasticity and dyskinesia. This retrospective study was performed to evaluate the effect of upper extremity OSSCS on muscle tone and functional outcome in 240 children and young persons (aged 5 to 24 years, 60% females) with spastic and/or dystonic quadriplegia and hemiplegia. OSSCS involves intramuscular tendon lengthening and controlled sliding tendon lengthening. Release of deep fascia, myofascia and inter-tendinous fascia were added by the author. The surgery of shoulder flexors and extensors, elbow flexors, forearm flexors, pronators and hand intrinsic muscles were followed by protocol-based rehabilitation post the removal of above elbow plaster slab after 2 weeks. The rehabilitation was provided for 6 days per week for 6 months. Manual Ability Classification System (MACS) was used to characterise the upper extremity function. Tardieu scale, Functional Spasticity Scale (FSS), Dystonia Movement and Disability Scale (DMDS), Range of motion measurement with Goniometer, Strength measurement with Jamar Dynamometer and Melbourne Assessment of Unilateral Upper Limb Function (MAUULF) were measured before surgery and after 6 months and 2 years. A significant improvement of MACS ($p < 0.001$), Tardieu ($P < 0.05$), FSS ($p < 0.05$) and Goniometer – wrist extension ($p < 0.05$) and elbow extension ($p < 0.05$), Strength measured by Dynamometer ($p < 0.05$), DMDS ($p < 0.001$) and MAUULF ($P < 0.001$) was recorded. The follow-up data were obtained for 72% of the subjects, in which the progress was maintained in 90% of the subjects.

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Abstract no.: 54992

TREATMENT RESULTS WITH THE SPINO-PELVIC FIXATION FOR THE UNSTABLE PELVIC RING FRACTURES.

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Introduction: It is difficult to treat for the unstable pelvic ring fracture. Because it has the vertical and rotational instability. It is need to firmly fix. We treated with the spinal instrumentation for them. Purpose : To analyse the results of surgical treatment for unstable pelvic ring fractures with the spino-pelvic fixation. Materials and Methods : Nine patients with the unstable pelvic ring fractures included sacral fractures were treated using spinal instrumentation in 2010 ~ 2018. The patients comprised 4 males and 5 females. The mean age was 37.3years old. The mean postoperative follow-up duration was 23months. Fracture classification type were AO61 C1.3: 3cases, C2.3: 1case, C3.1: 1case, C3.3: 4cases. Type of fixation, operative time, blood loss, perioperative complications, postoperative correction loss, postoperative time to get out of the bed, ambulatory ability were considered. Results : The mean operative time was 240 minutes. The mean blood loss was 478ml. Perioperative complications were Deep vein thrombosis: 1case, surgical site infection: 1case, Nerve root injury: 1case, Bladder and Rectal disturbance: 1case. Postoperative correction loss was 1.6mm. Postoperative mean days to get out of the bed was 6.3days. All cases regain walking ability.

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Abstract no.: 55119

DIRECT ANTERIOR MINIMALLY INVASIVE SURGERY (DAMIS) FOR TOTAL HIP ARTHROPLASTY. EVALUATION OF COMPLICATIONS IN 617 PATIENTS, WITH A 3-YEAR FOLLOW UP.

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Introduction: Total hip arthroplasty is a successful procedure for treatment of painful hip arthritis. The aim of this prospective study is to describe intra-operative and post-operative complications using the direct anterior minimally invasive surgery (DAMIS) for total hip arthroplasty. Methods: We investigated all cases of patients that were treated with DAMIS total hip arthroplasty in our department during years 2012 - 2017. A traction table and an image intensifier were used. The technique includes an 8 - 10 cm incision, centred over the tensor fasciae latae and directed laterally toward the lateral aspect of the distal femur. The approach utilizes anterior internervous and intermuscular plane, and has been described as a modified Hueter approach. Patients were allowed for full weight bearing at the 1st postoperative day. Results: The study included 617 patients (391 women - 226 men) with a mean age of 68.3 years (range 33-91 years). The mean duration of hospitalization was 4.2 days (range 1-15 days) and the mean follow up was 36 months. The mean duration of surgery was 52 minutes. Complications included: Intraoperative greater trochanter fractures (2.76%), intraoperative periprosthetic fractures (2.11%), intraoperative acetabular perforation (0.16%), intraoperative femoral perforation (0.16%), dislocations (0.65%), aseptic loosening (0.65%), heterotopic ossification (0.97%), superficial infections (0.65%), deep infections (0.16%), sciatic nerve injuries (0.16%) and lateral femoral cutaneous nerve injuries (1.13%). There were no major thromboembolic events. Conclusions: The DAMIS technique is a safe method for total hip arthroplasty. The decision on the choice of method should be individualized for each patient.

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Abstract no.: 55083

**MANUAL LABOUR AS A RISK FACTOR FOR CLINICALLY RELEVANT
BASE OF THUMB OSTEOARTHRITIS**

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The impact of occupation on the development of thumb carpometacarpal (CMC1) osteoarthritis (OA) has not been studied in depth. Our aim was to evaluate the relationship between doctor-diagnosed CMC1 OA and occupation in a large well-defined population. Using a healthcare register from southern Sweden (population 1.3 million), we identified all residents between the ages of 30-65 years in 2013 with doctor-diagnosed CMC1 OA (ICD-10 code M18) during 1998 through 2013. For each CMC1 OA subject, we matched 4 controls by age, sex, level of education, and residential area. The Swedish occupational database was used to retrieve each person's occupation in 2013. The occupations were categorized into light, light-moderate, moderate, and heavy manual labour. We used conditional logistic regression to estimate odds ratios (OR) with 95% confidence intervals (CI). We identified 3462 individuals with doctor-diagnosed CMC1 OA and matched a control group of 13,211 individuals. The mean age of the CMC1 OA cohort was 63 (SD 7) years, and 81% were women. The OR (95% CI) for CMC1 OA in men were 1.31 (0.96-1.79) for light-moderate work, 1.76 (1.29-2.40) for moderate workload, and 2.00 (1.59-2.51) for heavy occupational load as compared to light work. Women performing light-moderate occupational work had nearly 1.5 times the odds of receiving doctor-diagnosed CMC1 OA compared to controls. We conclude that moderate occupation load is associated with 70% higher odds of CMC1 OA in men, with higher estimates for greater load. In women, the association is weaker.

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Abstract no.: 55084

A SINGLE STAGE DISTAL FEMORAL OSTEOTOMY WITH LATERAL PLATING FOR CORRECTION OF GENU VALGUM – A CASE SERIES

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Introduction: Valgus deformity of the knee often originates in the distal femur leading to abnormal gait patterns. Multiple osteotomy techniques are described for the angulation and rotational correction. Here we implemented a medial closing wedge osteotomy at or near the deformity apex in distal femur with lateral plating in a single stage to correct the deformity. Materials and method: 7 patients were operated for valgus knee at our centre between 2015 and 2019. 5 cases had bilateral deformity and 2 cases had unilateral deformity. Average age was 16 years +/- 2 years. All patients underwent a single stage osteotomy with rotational and angulation correction and stabilized with a lateral column plate. Bilateral femur osteotomies were also done in a single sitting. Follow-up of 1 year with Clinical and radiological parameters and gait patterns were done. Results: The mean valgus deformity was 25-30 degrees and corrected to 2-7 degrees of valgus. Post operatively all patients went for union of the osteotomy site in 8-12 weeks and full range of knee motion with proper patellar tracking was observed in 3-4 months. Gait pattern improvements were noted at 6 months. Conclusion: Single stage distal femur osteotomy with lateral plating through lateral approach is a very effective option for correcting distal femur valgus deformities with reduced complications. Further all cases recovered full range motion of the knee with proper patellar tracking.

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Abstract no.: 55102

**TOTAL KNEE PROSTHESES WITHOUT RESURFACING THE PATELLA
(ABOUT 60 CASES)**

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Hospital, Casablanca (MOROCCO)

Introduction and methods: This single-centre retrospective study was conducted in osteoarticular Aile4 surgery department in UHC Ibn Rochd in Casablanca between January 2011 and December 2017, 57 patients (60 knees) who underwent total knee arthroplasty without patellar resurfacing. Our goal through this series is to analyse the clinical and radiological results of patients treated with TKA without resurfacing, discuss the indication of not resurfacing the patella, assess complications following the establishment of a PTG without resurfacing and to compare these results with literature.

Results: The average age of our patients was 58 years, ranging from 20 years to 80 years. The predominance of women is marked with 41 women either (72%) and 16 men either (28%). Clinically, our patients complained of mechanical pain in the majority of cases and all patients underwent clinical and radiological examination. The IKS score was used to assess the condition of the knee before and after surgery. The surgical procedure consisted of a total knee arthroplasty without patellar resurfacing. Postoperative complications were labelled with 7 cases of anterior knee pain, 2 cases of superficial skin infections treated with an appropriate antibiotic and 3 cases of stiffness. No cases of hematoma or phlebitis or sepsis were reported. Clinical outcomes after a decline of 18 months were satisfactory. In light of these results the conservation of the patella has achieved very satisfactory results in the medium term for pain and function. In addition, potential complications patellar prostheses have been avoided.

Date: 2019-12-05

Session: Just-A-Minute Session 1

Time: 10:00 - 10:30

Room: Lounge

Abstract no.: 55118

CONGENITAL FEMORAL DEFICIENCY - TREATMENT WITH RECONSTRUCTION TYPE SUPERHIP

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Introduction: After SUPERHIP reconstruction described by Paley, the understanding and results of reconstruction in congenital deficiency are more effective. Objective is to describe the preliminary results of 13 patients after this comprehensive limb reconstruction. Methods: the technique included a large incision, flexors and abductors release, special design hip valgus osteotomy and pelvic osteotomy Dega type. Results: 13 consecutive patients with type 1B of congenital femoral deficiency were operated by two surgeons in two different centres, from 2005 to 2018. Average age: 8 years old, and average follow up was 4 years. Cervicodiaphyseal angle went from 119 pre op to 142 post op; CE angle (Wiberg) went from 15 to 43, and acetabular index from 31 to 19. Clinical abduction went from 19 to 30 degrees; internal rotation went from 7 to 45 degrees, and external rotation went from 77 to 40 degrees. All flexion contractures were treated with the procedure. As complications, there were 2 pseudoarthrosis, treated with reoperation, 1 plate breakage, and 2 dehiscences. Conclusion: the results reflect the reproduction of Paley results in the initial treatment of CFD type 1B, and this technique was effective to treat our children.

Date: 2019-12-05

Session: Just-A-Minute Session 1

Time: 10:00 - 10:30

Room: Lounge

Abstract no.: 55123

INCIDENCE OF HIP HETEROTOPIC OSSIFICATION IN PATIENTS TREATED WITH OPEN REDUCTION AND INTERNAL FIXATION OF ACETABULAR FRACTURES.

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Background Hip heterotopic ossification is a known complication of acetabular fractures. **Objectives** The aim of this study is to evaluate the incidence of heterotopic ossification of the hip after open reduction and internal fixation of acetabular fractures, in a tertiary referral centre. **Study Design & Methods** This retrospective study included all patients who underwent open reduction and internal fixation of acetabular fractures in our department from September 1983 to May 2018. In all patients, gluteus minimus was surgically removed while post-operatively indomethacin per os was administered for 4 weeks. The incidence of hip heterotopic ossification was assessed by simple pelvic and hip X-rays. **Results** A total of 525 patients were recorded, while 114 were lost from follow-up. The final follow-up included 411 patients. In 239 patients, Kocher-Langenbeck approach was used, while in 172 patients the ilioinguinal approach was used. The incidence of hip heterotopic ossification was 17.5% (n = 72). 3.9% of the cases (n = 16) were severe, classified as Brooker Stage III and IV. In all cases except one (n = 1), hip heterotopic ossification was observed after Kocher-Langenbeck approach. In 28 patients, where Kocher-Langenbeck approach was combined with flip osteotomy, only 1 case of heterotopic ossification (Stage II) was observed. **Conclusions** Heterotopic ossification of the hip is a frequent complication after open reduction and internal fixation of acetabular fractures. Clarification of risk factors for heterotopic ossification will stimulate research into the diagnosis, prevention and treatment of the disease.

Date: 2019-12-05
Session: Just-A-Minute Session 1
Time: 10:00 - 10:30
Room: Lounge

Abstract no.: 55133

IMPACT OF AVASCULAR NECROSIS IN HIP RECONSTRUCTION IN CEREBRAL PALSY

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Introduction: Hip dislocation in cerebral palsy patients may cause pain, perineal hygiene difficulty, sitting imbalance, pelvic obliquity and other disabilities. Surgical hip reconstruction is the choice of treatment and avascular necrosis (AVN) is responsible for pain and limitation of function. AVN impact is analysed in CP patients who underwent hip reconstruction (femur + pelvic osteotomy + soft tissue release) with a minimum of 2 years follow up. Methods: Complete data from 104 patients (127 hips) were analysed respectively. Reimers migration index, Tönnis classification, age at surgery, amount of abduction, GMFCS, acetabular index and neck-shaft angle were pre-op data gathered. Hips were classified as Bucholz and Ogden and investigated clinically with CPChild – Brazilian quality-life questionnaire. Results: Mean age at surgery was 120 months and it was not related with AVN ($p = 0.946$). AVN signs were seen in 61 hips (48%). The mean Reimers value pre-op was 68.7% in normal hips and 83.1% for hips with AVN ($p = 0.003^*$). All hips that were graduated as Tönnis IV in pre-op developed AVN ($p = 0.006^*$). There was no difference in abduction between hips that developed AVN and those without ($p = 0.313$). AVN's hips tend to be more painful ($p = 0.052$). Patients who developed AVN have got worse score in quality of life ($p = 0.023^*$) and comfort ($p = 0.025^*$) (CPChild). Conclusion More severe deformities (Tönnis and Reimers pre-op) have greater probability to develop AVN. Negative impact in quality of life and comfort was found in patients who developed AVN.

Date: 2019-12-05

Session: Just-A-Minute Session 1

Time: 10:00 - 10:30

Room: Lounge

Abstract no.: 55218

CT BASED MORPHOMETRIC STUDY OF SCAPHOID AND ITS IMPLICATIONS FOR SAFE PASSAGE OF SCREWS FOR FIXATION

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Surgeons fixing scaphoid fractures need to be familiar with its morphological variations and their implications on safe screw placement during fixation of these fractures. Literature has limited data in this regard. The purpose of this CT-based study was to investigate scaphoid morphometry and analyse the safe trajectories of screw placement in scaphoid. We measured the coronal and sagittal widths of scaphoid in CT-scans of 60 patients using CT based data from 50 live subjects with intact scaphoid. Safe placements for screws with diameters of 1.7mm, 2.4mm, 3.5mm and 4mm were studied using trajectories with additional 2mm safety corridor. The mean width of proximal segment in coronal and sagittal plane were 6.39mm (4.5-8.7) and 11.44mm (8.4-14.1) respectively. For the waist region, the mean coronal, sagittal width were 8.03mm (6.3-10.2mm) and 9.02mm (7-11.4mm) respectively. For distal segment, the mean coronal and sagittal width were 10.58mm (8.2-14.6mm) and the 9.59mm (7.3-11.9mm) respectively. The coronal and sagittal widths were significantly different from each other in all three zones. All scaphoid were capable of safely containing single 4mm screw and two parallel 1.7mm screws. Our study shows that there is considerable variation in scaphoid morphometry. Among the parameters, the waist region measurements show the least variation. The screw lengths do not always correlate to the overall longitudinal extent of scaphoid and can be planned preoperatively using CT-scans. Surgeons treating these fractures should opt for a CT-based analysis regarding the screw direction and length and need to be familiar with the variations in scaphoid morphometry.

Date: 2019-12-05

Session: Just-A-Minute Session 1

Time: 10:00 - 10:30

Room: Lounge

Abstract no.: 55264

LOCATION OF ATYPICAL FEMORAL FRACTURES CAN BE DETERMINED BY THE MECHANICAL AXIS OF LOWER LIMB: CT-BASED FINITE ELEMENT ANALYSIS

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We aimed to identify the association between the mechanical axis of the lower limb and the location of atypical femur fracture (AFF). We retrospectively reviewed 18 patients with AFFs and gathered their CT image of the intact femur. We performed FEA analysis to find the maximal stress point (MSP) and matched the location of AFF. We manipulated the mechanical axis as neutral, varus (5-35mm) and valgus (5-35mm), and analysed the change of MSP according to lower limb alignment. Femoral lateral bowing was classified from 0(neutral)-3(varus). There were 5 subtrochanteric and 13 diaphyseal AFFs. The average mechanical axis was 24.5mm (range, 0 – 70mm) of varus knee. The grade of femoral bowing was following: grade 0 7 cases; 2 cases of grade 1; 3 cases of grade 2; and 6 cases of grade 3. In the grade 0, the MSP was the proximal femur, while the point was midshaft or distal 1/3 in grade 1, 2 and 3. Seven patients with neutral axis had the same location of MSP and the location of AFF, but 6 among 11 patients with varus did not show consistency. After the adjustment of varus axis of each patients with patient's whole lower bone x-ray, the MSP was exactly consistent with the fracture site. The MSP was increased with varus and the location changed to distally. CT/FEA demonstrated that maximal stress location was consistent with the location of AFF, and the MSP was determined by the lower limb axis, not only by the femoral bowing.

Date: 2019-12-05

Session: Just-A-Minute Session 1

Time: 10:00 - 10:30

Room: Lounge

Abstract no.: 55011

'SCAPULO-HUMERAL MANOEUVRE' FOR SHOULDER DISLOCATIONS

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A prospective study was done to analyse the results of 'Scapulohumeral manoeuvre' (SHM) to reduce the shoulder dislocations. 'Scapulo-Humeral Manoeuvre': Patient's affected right shoulder was stabilised by assistant holding the patient's right elbow and forearm maintaining the elbow in 90° flexion in sagittal plane with mild traction. The surgeon's right hand held the proximal humerus between his fingers and the thumb; and the surgeon's left palm was kept over the superior lateral surface of the acromion. A lateral pull was applied by the surgeon's right hand at the proximal humerus and at the same time surgeon's left palm pushed the acromion medially and downwards until the shoulder relocated. The patients were immobilised in collar and cuff for 3 weeks and then mobilised and were followed up for 6 to 8 weeks. 32 patients (14 males, 18 females) with shoulder dislocations were treated by 'SHM' under sedation (28) and under GA (4). 30 patients had anterior dislocations and 1 patient had an inferior dislocation and another one posterior. SHM was attempted primarily in 28 patients, 4 patients had previous other methods failed for reduction. One Pregnant lady (38 weeks) with recurrent dislocation had to be reduced under local anaesthesia. There were no complications, but the method failed in one muscular patient under sedation which reduced spontaneously on its own. Average time required for the manoeuvre was 37.5 seconds (range 30 to 45). We conclude that the SHM was technically easy, atraumatic and reliable in the cases we studied.

Date: 2019-12-05

Session: Just-A-Minute Session 2

Time: 15:30 - 16:00

Room: Lounge

Abstract no.: 54539

ADVANTAGES OF TREATING HUMERAL SHAFT FRACTURES WITH MEDIAL PLATING IN A POLYTRAUMA SETTING

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Humeral shaft fractures occur in a bimodal age distribution. The pattern of fracture is mainly determined by the age, bone strength, velocity of injury, and the impact forces. These fractures are known to be concurrent with nerve injuries, and the radial being the commonest. 8-15% has been reported. In a poly-trauma setting the time required for surgical management may be less, based on the patient status. Hence the methods resorted to, and the implant of choice should be able to provide the best possible result, with the least time consumption. We have been using this approach since 1999 at our centre and the observations made from these are the basis of this paper. The observations were as follows (To quantify the observations we chose 65 cases from 2015-2018) 1, The medial surface was flat over a longer area (exposing up to the lower section of neck and distally up to the supracondylar ridge) 2, Lesser requirement to contour the plate, since it fits right on the surface, and does not come in the way of deltoid insertion. 3, Lesser chance of causing iatrogenic Radial nerve injury, since identification and isolation of the radial nerve is not required. 4, Easier to hold the reduction. 5, Hassle free placement of plate medially in both antero-lateral and extended-deltopectoral approach, since the deltoid insertion does not come in the way. 6, Effectively reducing the surgical time. **CONCLUSION:** The most commonly used antero-lateral, anterior, and posterior surface plating required identification of radial nerve, and neutralising the forces of deloid insertion while placing the plate, which could be avoided in medial plating, thus reducing the surgical time.

Date: 2019-12-05

Session: Just-A-Minute Session 2

Time: 15:30 - 16:00

Room: Lounge

Abstract no.: 54535

FACTORS AFFECTING LENGTH OF STAY POST TOTAL HIP AND KNEE ARTHROPLASTY

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Background: Post operative hospital stay following hip and knee arthroplasty is determined by multiple factors including medical comorbidities, early post-operative complications and social factors. Our study assesses the length of stay post primary hip and knee arthroplasty. Methods: This was a retrospective study and the requisite data were collected from patient notes and discharge records, via the hospital database. Patients who underwent THR and TKR procedures over a 2 months period were included in the study. The data from our study was co-related with national guidelines which states an average length of stay of 4.2 – 15 days for THR and 4-12 days for TKR patient (Lapworth, 2015). Results: The study comprised of 108 primary TKR and 55 primary THR patients. The average length of stay (LOS) post THR was 5.76 days and for TKR patients was 5 days. 14 patients (25%) in the THR group, stayed longer than the average LOS. Physiotherapy and social issues were the major causes resulting in 8 out of 14 patients exceeding the mean LOS. Among TKR patients, a total of 34 out of 108 patients exceeded the mean LOS. A significant proportion of these patients (35%) stayed back due to medical comorbidities. A further 24% were held back due to slow progress with the physiotherapy. Also, the incidence of DVT or cellulitis was significantly high post TKR procedure. Age was a significant factor in determining LOS among both the groups, with older patients having relatively prolonged stay.

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Session: Just-A-Minute Session 2

Time: 15:30 - 16:00

Room: Lounge

Abstract no.: 54078

IS C7 A CLINICALLY FEASIBLE DISTAL FIXATION ANCHOR IN MULTILEVEL POSTERIOR CERVICAL FUSION SURGERY? A RETROSPECTIVE RADIOLOGICAL FOLLOW-UP OF C7 LATERAL MASS AND PEDICLE SCREW CONSTRUCTS

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Introduction: C7 as distal fixation point in posterior instrumented multi-level cervical fusion remains a challenge due to the unique anatomy at cervicothoracic junction and possibility of cervical sagittal malalignment. We aim to analyse the clinical feasibility and effect of C7 as distal instrumentation anchor on cervical sagittal alignment. Material and Methods: In a retrospective review, patients operated at a single centre from 2014 to 2016 for posterior cervical fusion surgery for spondylotic myelopathy or myeloradicuopathy, ossified posterior longitudinal ligament(OPLL) with C7 as distal fixation point were included and > 2 years' post-operative follow-up was done on plain radiographs. Pre and post-operative C2-7 lordosis, T1 slope, C2-7 sagittal vertical axis (SVA), type of fixation and any screw failure were recorded and statistically analysed. Patients with cervical trauma, follow-up less than 2 years and previous cervical instrumentation were excluded. Results: 44 patients (39 males, 5 females) with mean age 58.06±14.4 years met the inclusion criteria. In 16 patients, lateral mass screws were fixed whereas 28 had pedicle screws as fixation construct and all patients achieved fusion. C2-7 lordosis improved significantly from mean 12.2±4.9 degrees to 20.1±3.2 degrees ($p < 0.05$ for pedicle screw). C2-7 SVA change (pre-operative value of 21.9±5.2 degrees to 20.1±3.8 degrees) was not significant statistically ($p = 0.07$) whereas mean T1 slope (pre-operative 22.4±4.5 degrees) was comparable to post-operative value (23.3±5.7 degrees) and statistically significant ($p < 0.01$). There was no screw pullout except one pedicle screw breakage. Results: C7 as distal instrumentation level in multilevel posterior cervical fusion achieves good radiological outcome and pedicle screw constructs have a comparatively higher improvement in C2-7 lordosis as compared to lateral mass screws as the distal fixation anchor.

Date: 2019-12-05

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Abstract no.: 54104

MUSCULOTENDINOUS JUNCTION INJURIES OF THE PROXIMAL BICEPS FEMORIS: A PROSPECTIVE STUDY OF 64 PATIENTS TREATED SURGICALLY

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Background: Musculo-tendinous junction injuries of the long head of Biceps Femoris (MTJ-BF_{lh}) comprise nearly 70% of all injuries to the hamstring-complex. Non-operative management of these injuries is associated with high risk of recurrence. To our knowledge, the surgical management of MTJ-BF_{lh} injuries has not been previously reported. This study aimed to ascertain if surgical repair of acute MTJ-BF_{lh} injuries enables return to sporting activity with low risk of recurrence. Methods: A Prospective study of 64 patients (42 males and 22 females) undergoing surgical repair of acute MTJ-BF_{lh} injuries within 4 weeks of injury. 6 predefined outcomes were recorded at 3 months, 1-year and 2-years after surgery. Results: All study patients returned to pre-injury sporting. Mean time from surgery to return to sporting was 14.6 weeks. 3 patients (4.7%) suffered from reinjury at the operated site. At 3 months post-op, patients had improved mean passive straight leg raise ($72.0^{\circ} \pm 11.4^{\circ}$ vs $24.1^{\circ} \pm 6.8^{\circ}$, $p < 0.001$); increased mean isometric hamstring muscle strength at 0° ($p < 0.001$), 15° ($p < 0.001$) and 45° ($p < 0.001$) and higher median Lower Extremity Functional Scores (LEFS) (72, IQR; 70-74 vs 30, IQR; 25-34, $p < 0.001$) as compared to before surgery. Median Marx activity rating scores (MARS) improved to 12, IQR; 6-14 (at 1 year) from 6, IQR; 4-8, $p < 0.001$ (at 3 months). High patient satisfaction was maintained throughout following surgery. Conclusion: Surgical repair of acute MTJ-BF_{lh} injuries enables return to preinjury level of sporting with low risk of recurrence at short-term followup.

Date: 2019-12-05

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Time: 15:30 - 16:00

Room: Lounge

Abstract no.: 54108

SURGICAL MANAGEMENT OF ACUTE SEMIMEMBRANOSUS INJURIES IN PROFESSIONAL ATHLETES - A PROSPECTIVE STUDY

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Background: Semimembranosus (SM) non-avulsion tears are career-threatening injuries in professional athletes and are associated with slow healing and high recurrence with non-operative management. The aim of this study was to measure various outcomes of surgical repair in these injuries. Methods: This prospective single surgeon study included 20 patients undergoing surgical repair of acute SM non-avulsion tears operated within 6 weeks of injury. Following surgical repair, patients underwent a standardized postoperative rehabilitation. Predefined outcomes were recorded at regular intervals for at least two years after surgery. Results: Surgical repair of SM injuries was associated with return to play at 16.2 ± 4.5 weeks following surgery with 95% players returning to sport. At one year follow-up, patient satisfaction was 95%. Within same period, surgery was associated with improved mean hamstring strength at knee-flexion of 0 degrees ($48.4 \pm 8.3\%$ vs $92.3 \pm 3.7\%$, $p < 0.001$), 15 degrees ($52.3 \pm 14.7\%$ vs $91.9 \pm 4.9\%$, $p=0.007$) and 45 degrees ($66.7 \pm 13.1\%$ vs $92.3 \pm 5.9\%$, $p=0.013$); increased mean passive straight leg raise (31 ± 7.2 degrees to 91.5 ± 9.3 degrees, $p < 0.001$) and greater median Lower Extremity Functional Scores (LEFS) (from 34 to 75, $p < 0.001$) compared to preoperative values. Median Marx Activity Related Scores (MARS) improved significantly between 3-month and 1-year follow-ups (4, IQR 4-8 vs 11, IQR 10-12, $p=0.012$). No recurrences seen. Conclusion: Surgical repair of Semimembranosus injuries is associated with high patient satisfaction, increased muscle strength and flexibility, improved functional outcome scores and return to sporting with minimal recurrence.

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Session: Just-A-Minute Session 2

Time: 15:30 - 16:00

Room: Lounge

Abstract no.: 54620

ULTRASOUND GUIDED INJECTION OF MORTON'S NEUROMA VS OPERATIVE REMOVAL – IS THE OUTCOME COMPARABLE?

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Aims and objectives: The aim is to compare the outcome of ultrasound guided injection of the Morton neuroma of foot and the operative treatment. Material and methods: We retrospectively evaluated the outcome of 17 ultrasound guided injection of the Morton's neuroma in the foot over a three year period between June 2013 and June 2016 to 13 patients (14 feet) who were operated from February 2015 to March 2018 for excision of Morton neuroma of foot using a dorsal approach. Results: Our results show that 60% of the patients get pain relief after injection of Morton's neuroma and it is maintained at 1 year following the injection. 35% of the patients underwent surgical removal with good outcome and 17% of the patients needed further injection to help them with the symptoms. 11 out of 13 patients (84.6 %) operated were satisfied with their results of surgery after a mean follow up period of 34.42 ± 9.81 months. Biopsy supported the clinical diagnosis in 13/14 case (92.857%). Pre-operative diagnosis was confirmed by radiologist as Morton Neuroma on 12/14 cases (85.71%). Statistically significant difference was appreciated between pre-operative and post-operative MOXFQ score (41.92 ± 10.47 Verses 8 ± 15.11) respectively with p value < 0.0001 CI 95% SI 4.913. Conclusion: Operative management of Morton's Neuroma provided better results than injection treatment in the long term. The above study helps us in the consenting process for the patients to choose the treatment options for the management of their Morton's neuroma.

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Session: Just-A-Minute Session 2

Time: 15:30 - 16:00

Room: Lounge

Abstract no.: 54170

PREDICTORS OF NEEDING LAMINECTOMY AFTER INDIRECT DECOMPRESSION VIA INITIAL ANTERIOR (ALIF) OR LATERAL (LLIF) LUMBAR INTERBODY FUSION

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Introduction: To evaluate factors are associated with the need for additional posterior direct decompressive surgery after anterior (ALIF) or lateral (LLIF) lumbar interbody fusion. **Methods:** 86 adult patients who underwent ALIF or LLIF for degenerative spondylolisthesis and foraminal stenosis were enrolled. Patient factors (age, sex, number of surgery levels, visual analogue scale (VAS) of leg and back pain, duration of symptom), procedure related factors (cage height and lordosis) and radiographic measurements (disc height (DH), foraminal height (FH) and area (FA), central canal diameter (CCD), and facet joint degeneration (FD)) were analysed. **Results:** Out of 86 patients, 62 patients underwent posterior decompression, and 24 patients had no posterior decompression. There were no significant differences between groups with regards to age, sex, preoperative VAS of back pain, cage height, cage angulation, preoperative DH, FH, FA, CCD and FD ($p>0.05$). The group that underwent posterior decompression showed statistically different numbers of treated segments (1.92 versus 1.21, $p<0.01$), preoperative VAS leg (7.9 vs 6.3), symptom duration (14.2months vs 9.4months), postoperative DH improvement (61.3% vs 96.2%), postoperative FH improvement (21.5% vs 32.1%), postoperative FA improvement (24.1% vs 36.9%) and cage height minus preoperative DH (5.3mm vs 7.5mm) compared with the no decompression group. **Conclusions:** There appears to be some correlation between the need for posterior decompression and the foraminal height, foraminal area, difference between the cage height and preoperative disc height, duration of symptoms, and VAS leg scores

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Room: Lounge

Abstract no.: 54250

FUNCTIONAL OUTCOME AND RECURRENCE RATE OF ARTHROSCOPIC BANKART REPAIR IN OMANI PATIENTS

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Objective: The purpose of this study is to study the functional outcome and post-operative recurrence rate of recurrent shoulder instability operated by arthroscopic anterior stabilization in Omani patients. **Methods:** this is a retrospective case series study on patients operated for Bankart repair from 2015 till 2018 with total of 71 patients and median follow up period of 20,49 months. The age was between 18 and 45 years. Among the 71 patients, total of 41 patients were evaluated using three scores, oxford shoulder score, constant score and Carter Rowe score. External rotation was calculated and compared to the contralateral side. **Results:** the recurrence rate among the 71 patients was 8.5%. With Oxford shoulder score, 78 percent had satisfactory results and 17,1 percent had mild to moderate and 7 percent had moderate to severe results. At constant score, 36,6% of the patients had excellent results, 29,3% had good results 12,2 % had fair results and 22% had poor results and with Carter Rowe score, 19,5% had excellent results, 34,1% had good results, 17,1 had average results and 29,3% had bad results. The mean loss of external rotation on the affected side was 17.56 degrees. **Conclusion:** the recurrence rate and functional outcome is our group of patients results are comparable to the published literature. There is significant relationship between loss of external rotation and patient satisfaction.

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Time: 15:30 - 16:00

Room: Lounge

Abstract no.: 54341

POST-LATARJET ALTERNATIONS IN BICEPS BRACHII AND INFRASPINATUS ACTIVITY

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Background: Recurrent shoulder instability may pose a serious problem with shoulder's region functioning, especially in the young patients with a serious risk of multiple dislocations. Then, a surgery may be considered as an effective way of structural shoulder stabilization. One of the method is Latarjet procedure, which bases on the transposition of a coracoid process with the conjoined tendon of biceps brachii and coracobrachialis
Objectives: The aim of this paper was to evaluate the activity of biceps brachii and infraspinatus in patients after Latarjet procedure and check whether the underwent surgery leads to some changes of muscles' activation
Methods: 18 patients were examined with the employment of surface electromyography. sEMG sensors were located on the biceps brachii and infraspinatus muscles. The muscles' activity was evaluated in the movements of shoulder flexion and external rotation at 0 and 90 degrees of shoulder abduction.
Results: We found out statistically significant differences in the activity of biceps brachii at rest and in its muscle tension in relation to maximum voluntary contraction. We also observed a significant difference in the mean muscle tension of infraspinatus at rest and during the external rotation at 90 degrees of shoulder abduction (mean muscle tension in relation to %MVC).
Conclusion: Although Latarjet procedure seems to be a good option to restore the anatomical parameters of an extremity with recurrent shoulder instability, certain differences in the muscular activity of the shoulder girdle region are present and it may lead to altered shoulder mechanics.

Date: 2019-12-05

Session: Just-A-Minute Session 2

Time: 15:30 - 16:00

Room: Lounge

Abstract no.: 54363

ROBOTIC TRAUMA AND ORTHOPAEDIC SURGERY: THE RECENT ADVANCES AND THE SYSTEMATIC REVIEWS OF LITERATURE

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We are entering in a new era of robotic surgery. There is a greater scope for wider and more meaningful robotic applications. It is credible that this new innovation will one day become the benchmark of care for a variety of surgical procedures. The robotic technology, we have now, offers an opportunity to deliver something very specific to individual patient. The use of robots in Orthopaedic surgery is gaining momentum with encouraging short-term results. It offers conceivable significant improvements in surgical planning, accuracy of component implantation, excellent outcomes that ultimately enhance patient safety. Robotic surgery can be surgeon driven where insect-like arms are operated by a surgeon sitting at a control booth or autonomous surgical robot driven, where robot, it should be emphasised, operates entirely independently of human control. The surgeon driven robots are more common and autonomous surgical robot are being designed specifically to suture or stitch up soft tissue. Campaigners of robot-assisted systems pronounce better patient outcomes through better pre-operative planning and improved execution of surgery. Costs are important aspect for running any health care system in the world. Initial equipment costs for robotic surgery are more than Rs 83 million and ongoing operational costs are noteworthy. The learning curve associated with robotic surgery can have a considerable impact on training of junior doctors. However, robotic surgery has limited global application due to cost effectiveness, restricted availability, a lack of long-term high-impact level 1-research studies regarding the efficiency and safety of robots.

Date: 2019-12-05

Session: Just-A-Minute Session 2

Time: 15:30 - 16:00

Room: Lounge

Abstract no.: 54366

VALIDATION OF THE SWEDISH FORGOTTEN JOINT SCORE – 12 (FJS-12), A NEW PATIENT-REPORTED OUTCOME TOOL OF KNEE REPLACEMENTS.

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Introduction: The loss of awareness could be seen as an optimal goal for the patients with an artificial joint. A new short and perhaps more sensitive PROM "Forgotten Joint Score – 12" (FJS-12) has been created and translated to Swedish. It is based on the hypothesis that the less you think about your joint after TKR surgery, the better outcome and function the patient have in their new joint. Aims: To evaluate the Swedish FJS-12 for reliability, validity including ceiling and floor effects. A comparison between FJS-12 and KOOS was also made. M&M: Intraclass correlation coefficients (ICC) were calculated for the post-operative test-retest and if greater than 0.7 it was regarded as sufficient (n 42). Internal consistency (Cronbach's alfa) was assumed sufficient when greater than 0.7. Ceiling effects were given as the frequency of maximum scoring one year after surgery for both FJS-12 and KOOS (n42). Convergent and discriminant validity were assessed between FJS-12 and KOOS). Results: Cronbach's alfa for FJS-12 was 0,965. ICC for FJS-12 was 0,929. The ceiling effects for the FJS-12 was 2% versus 9% for KOOS Pain, 7% KOOS ADL, 5% KOOS Symptoms and 0 % KOOS Sports /Recreativity, 5 % KOOS QoL. High correlation was found between FJS-12 and KOOS QoL (r 0.9) and the lowest between FJS-12 and symptoms (r 0.6). Conclusions: FJS-12 is a PROM with high validity and reliability and with less patients reaching ceiling effects post-operatively. There is a place for FJS-12 in the post-operative evaluation of TKR patients.

Date: 2019-12-05

Session: Just-A-Minute Session 2

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Abstract no.: 54369

HOW DEGENERATIVE IS THE TENDON IN ACHILLES TENDON RUPTURES?

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Introduction: The extent of tendinosis in Achilles tendon ruptures (ATR) has not previously been assessed. MRIs of acute ATRs were evaluated to assess this extent, even in areas distant from the rupture. Methods: Patients who had MRIs for an ATR were reviewed. Tendons were divided into proximal, middle and distal segments. The site of tendon rupture, presence of tendinosis and/or additional tearing and largest AP diameter in the remaining segments were noted. Forty-five MRIs were included in our study. Results: The mean total length of the tendon was 9.93cm, while the length from the insertion to the tear was 5.86cm. Of the 45 ruptures, 20 (44.4%) were in the proximal-third, 19 (42.2%) in the middle-third, and 6 (13.3%) in the distal-third of the tendon. In the remaining segments where no ruptured tendon was observed some degree of tendinosis was seen in all cases. Further, of the 90 thirds of a tendon that did not have a rupture, 87 had an AP diameter greater than 6 mm (87/90, 96.7%). Of those 90 segments without rupture, 24 had a secondary partial thickness tear in another third of the tendon (24/90, 26.7%). Discussion: Tendinosis is a known precursor of an ATR; in the current study it was not limited to the area of rupture. The entire tendon degeneration may have implications for the optimal surgical treatment of ATRs. In those patients that have surgery, it may be best to minimize suture fixation in tendon and rely on other means of restoring tension.

Date: 2019-12-05

Session: Just-A-Minute Session 2

Time: 15:30 - 16:00

Room: Lounge

Abstract no.: 54370

FRAGMENT-SPECIFIC FIXATION VERSUS VOLAR LOCKING PLATES IN NON-REDUCIBLE OR REDISPLACED DISTAL RADIUS FRACTURES. A 6-8 YEARS FOLLOW UP OF A RANDOMISED CONTROLLED STUDY IN 50 PATIENTS

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Introduction: To compare the long-term outcome of two types of internal fixation for distal radius fractures, the volar plate (VLP) and the Fragment-Specific Fixation (FSF) were compared regarding objective, subjective and radiographic outcome, 6 to 8 years after surgery. Methods: 50 patients were included in the original study between December 2010 and December 2012. All patients in the previously reported 12-month follow-up were invited. Six patients declined to participate. 44 patients (mean age 64 (27–75) years, 35 women) participated in the present study. Grip strength was determined as primary outcome. Range of motion, patient reported outcome using the short version of Disabilities of the Arm, Shoulder, and Hand (QuickDASH), radiographic outcome and complications were considered as secondary outcomes. Results: We found no difference between the VLP and FSF groups regarding grip strength (92% and 98% of contralateral), median QuickDASH (5 and 3) or range of motion. No differences in radiographic parameters were found between groups. The complication rates were similar in both groups, as was the rate of secondary surgery 20% (5/25) in the VLP group and 25% (4/25) in the FSF group. Conclusions: Surgical treatment of distal radius fractures with VLP and FSF both achieve good and similar results 6-8 years after primary surgery. We found no differences in outcome. We speculate that the differences in subjective and objective outcome between two modern methods of internal fixation are too small to be captured in smaller randomized series using present outcome instruments.

Date: 2019-12-05

Session: Just-A-Minute Session 2

Time: 15:30 - 16:00

Room: Lounge

Abstract no.: 54381

FACTORS ASSOCIATED WITH LOSS OF WALKING ABILITY AFTER A HIP FRACTURE

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Background and purpose: There is still much unknown regarding factors associated with loss of walking ability after a hip fracture. There is a lack of studies identifying patients who are in need of greater healthcare interventions. The present study's aim was to identify factors associated with loss of walking ability 4-months after a hip fracture. Material and Methods: Patients registered in the Swedish National Hip Fracture Register between 2013-01-01-2015-12-31 were included. Patients who were able to walk before fracture and had a follow-up 4 –months after fracture were included. Results: 23 950 patients were alive at 4 months. Ten percent had lost their walking ability. After adjustments for age, sex, dementia, ASA score and surgical procedure, factors associated with loss of walking ability were: discharge to nursing home rather than a own home or rehabilitation unit [OR]=1.96; CI=1.67-2.18), male gender (OR=1.59; CI=1.40-1.81), dementia (OR=1.80; CI=1.57-2.06) and ASA class 3+4+5 (OR=1.37; CI=1.20-1.55) but not age (OR=1.01; CI=1.00-1.02). Interpretation: Male sex, general health status, dementia and discharge to a nursing home were all factors associated with loss of walking ability after the hip fracture. There is a need for further studies of the influence of postoperative care in different settings after hip fracture surgery.

Date: 2019-12-05

Session: Just-A-Minute Session 2

Time: 15:30 - 16:00

Room: Lounge

Abstract no.: 54387

RADIATION EXPOSURE DURING ANTEGRADE FEMUR NAILING

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Orthopaedic surgeons and staff are exposed to radiation during various procedures. Femur fracture is one of the most common orthopaedic injuries and is mostly surgically managed by intramedullary nailing. In our study, we aimed at evaluating the factors that affect Radiation exposure in Antegrade femur Nailing. A Retrospective review of patient charts who underwent Antegrade femur nailing from March 2015- January 2017 was studied. A sample size of 89 patients was included initially. Retrograde intramedullary nailing, proximal or distal femur fractures and pathologic fractures were excluded. Data for the radiation dosage was collected from the image intensifier and subject specific data, fracture details, surgical factors, type of anaesthesia and surgeon experience were taken from patient charts. A total of 71 subjects were finally included; 64(90.1%) males and 7 (9.9%) females. All cases underwent antegrade nailing in either lateral (87.3%) or supine (12.3%), trochanteric entry in 83.1% of cases or Piriformis entry in 16.9%. Most of the cases (66.2%) done by resident followed by specialist in 19.7%. The average radiation dose was 470.72 ± 332.74 (cGycm²) and the fluoroscopy time was 3.02 ± 1.55 (minutes). We found that lateral position and closed reduction required significantly less fluoroscopy time compared to supine and open reduction with statistical significance $p < 0.001$ and $p = 0.001$ respectively. Whereas no statistical difference found in fluoroscopy time in regards to gender, degree of comminution, closed/open fractures, prior ex fix, type of nail, entry point, number of screws, type of anaesthesia and the surgeon experience.

Date: 2019-12-05

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Time: 15:30 - 16:00

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Abstract no.: 54438

TO DEVELOP ARTIFICIAL INTELLIGENCE TO MEASURE THE AMOUNT OF DISPLACEMENT OF FRACTURES: WE DEvised A MANUAL METHOD TO QUANTIFY FRACTURE DISPLACEMENT USING 3D CT IMAGES.

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INTRODUCTION: There are many fracture classification systems for intertrochanteric femoral fractures, including Evans classification, Jensen classification, AO-OTA classification, and so on. These are classifications made from two-dimensional images after traction and based on morphology, and they are still useful for predicting prognosis. In Japan, 3D-CT is frequently used for preoperative evaluation of fractures, and there are also classifications based on 3D-CT. However, it is doubtful that both small and large displacement should be of the same classification. Therefore, we devised a method to quantify fracture displacement using 3D CT images. **METHODS:** A total of 127 intertrochanteric femoral fractures were treated from April 2016 to March 2017. We investigated 1-mm slice CT scans from the pelvis to the knee joint for all patients immediately in the emergency room. We constructed 3D CT images from CT data and measured the distance and angle of fracture displacement using 3D CT software ZedTrauma (LEXI, Japan). The distance was the 3D transposition amount (3DT) of the femoral head and the angle was the rotational angle (ARA) around the cervical axis of femoral head. We excluded patients with contralateral femoral fracture or ipsilateral total knee replacement, leaving 86 cases for analysis. **RESULTS:** Mean ARA was 15.4 degrees and mean 3DT of the femoral head was 33.6 mm. **CONCLUSION:** This study is our trial to measure displacement of intertrochanteric femoral fractures manually. In the future, this method may be helpful when artificial intelligence automatically measures the amount of displacement.

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Abstract no.: 54479

FRAGILITY FRACTURES OF THE ANKLE IN THE FRAIL ELDERLY PATIENT. RETROGRADE HIND FOOT NAILING A PROMISING SOLUTION.

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Introduction: Ankle fragility fractures are difficult to treat due to poor bone quality and soft tissues as well as the near ubiquitous presence of comorbidities including diabetes mellitus and peripheral neuropathy. Given the high rate of complications with contemporary fixation methods, the present study aims to critically evaluate the use of acute hindfoot nailing as a percutaneous fixation technique for high-risk ankle fragility fractures. Methods. We recruited 23 consecutive patients who underwent hindfoot arthrodesis for acute ankle trauma. Patient demographic were collated and fracture pattern were noted. Selected injury patterns amenable to hindfoot nailing in the geriatric host included unstable ankle fracture-dislocations, tibial pilon fractures, and distal quarter tibia fractures. Telephone interview using Olerud and Molander Questionnaire was used Results: The mean age of the group was 73 years (67 to 93) and (85%) were women. 84% of patients returned to their pre-injury level of function. No nail breakages or periprosthetic fractures were reported, which the authors attributed to the use of a long TTC nail. The mean post-operative Olerud and Molander questionnaire scores were 58. . Complications included superficial infection 2 patients, deep infection none; valgus malunion 1 patient; There were no cases of nonunion. Conclusion: Treatment principles are to hold the ankle in a reduced position for long enough to allow bony union. If this can't be adequately achieved with a plaster then surgical intervention is routinely undertaken and traditionally achieved with plate osteosynthesis.

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Session: Just-A-Minute Session 2

Time: 15:30 - 16:00

Room: Lounge

Abstract no.: 54507

ROLE OF MULTIMODAL INTRAOPERATIVE NEUROPHYSIOLOGICAL MONITORING DURING SURGERY FOR CERVICAL MYELOPATHY

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Object. Despite the growing use of multimodal intraoperative monitoring (IOM) in cervical myelopathy surgery, limited data exist regarding the sensitivity, specificity, and predictive values of such a technique in detecting new neurological deficits in this setting. **Methods.** The authors conducted a retrospective analysis of a consecutive series of patients who had undergone cervical surgery during a 6-year period at a university-based neurosurgical unit, in which multimodal IOM was recorded. Sensitivity, specificity, positive predictive values (PPVs), and negative predictive values (NPVs) were determined. The study population included 146 patients with a mean age of 55 years. **Results.** Twenty-six patients (2.5%) had significant SSEP changes. New postoperative neurological deficits occurred in 34 patients (3.2%): 6 had combined sensory and motor deficits, 7 had new sensory deficits, 9 had increased motor weakness, and 6 had new root deficits. Overall, of the 34 new postoperative deficits, 21 completely resolved, 9 partially resolved, and 4 had no improvement. The deficits that completely resolved did so on average 3.3 months after surgery. Somatosensory evoked potentials had a sensitivity of 52%, a specificity of 100%, a PPV of 100%, and an NPV of 97%. Motor evoked potential sensitivity was 100%, specificity 96%, PPV 96%, and NPV 100%. Electromyography had a sensitivity of 46%, specificity of 73%, PPV of 3%, and an NPV of 97%. **Conclusions.** Combined neurophysiological IOM with EMG and SSEP recording and the selective use of MEPs is helpful for predicting and possibly preventing neurological injury during cervical spine surgery.

Date: 2019-12-05

Session: Just-A-Minute Session 2

Time: 15:30 - 16:00

Room: Lounge

Abstract no.: 54653

PONSETI METHOD AFTER WALKING AGE – A MULTI-CENTRIC STUDY OF 429 FEET

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Introduction: Ponseti method is suitable to treat neglected clubfoot after the walking age. However, limited evidence exists on its effectiveness, outcomes and rate of relapse. Methods: 429 clubfeet in 303 patients with no previous treatment and older than one year were treated with the Ponseti method in 15 centres from seven countries. The median age at treatment onset was three years (1.6 to 5.0 years), and the median follow-up of 1.3 years (0.7 to 2.5 years). Standard Ponseti Method was applied. Patients were classified according to group ages. Results: Ponseti method was able to correct the primary deformity in 87% (373 of 429) of neglected clubfeet, after a mean of 6.8 casts. Ages between four and eight years at treatment onset were associated with lower proportion of good and excellent outcomes (76% compared with values $\geq 87\%$; $p=0.002$), and greater proportion of bracing noncompliance (43% compared with less than 32%; $p<0.001$). Relapses occurred in 31% (32 of 103) of clubfeet and were associated with age less than

4 years at treatment onset (38% compared with 12%; $p=0.01$), and bracing noncompliance (48% compared with 25% for the adequate brace use; $p=0.04$). Conclusion: The Ponseti method is effective and safe to correct neglected clubfeet. Relapses occurred in one-third of clubfeet, mainly in children younger than four years and in noncompliance with the brace. Our study reinforces the recommendation for the Ponseti method with no major modification to treat neglected clubfoot in patients after walking age.

Date: 2019-12-05

Session: Just-A-Minute Session 2

Time: 15:30 - 16:00

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Abstract no.: 54744

COMPARISON OF REVERSE TOTAL SHOULDER ARTHROPLASTY OUTCOMES: WITH VS WITHOUT SUBSCAPULARIS REPAIR

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Repair of the subscapularis (SSC) is important in total shoulder arthroplasty; however, its utilization in reverse total shoulder arthroplasty (RTSA) has recently been questioned. The aim of this study is to evaluate the clinical outcomes after RTSA with and without SSC repair. Between 2010-2017, 92 patients treated with primary RTSA. 51 patients had the SSC repaired and 41 patients did not have the SSC repaired. Baseline and long-term follow-up questionnaires, including the ASES, SST, UCLA, VAS for pain, and Constant scores were obtained. In addition, active abduction, forward flexion, and internal/external rotation was measured preoperatively and at the latest postoperative visit, and t-tests were utilized to compare outcomes of interest between groups. All patients were available at 82.4 months (± 10.5). Both groups demonstrated significant improvements in pain and function following treatment, regardless of SSC repair status. There were 0 dislocations (0%) in the subscapularis repair group and 1 dislocation in the no-repair group (2.3%), which were not significantly different. Comparison of baseline demographics and intraoperative information revealed no significant differences. At final follow up, there were no statistically significant differences according to ASES, VAS, Constant, SST, and UCLA in patients with and without subscapularis (SSC) repair but the patients without a SSC repair had better abduction and external rotation. The SSC repaired group had better active internal rotation. Both SSC repaired and non-repaired groups after RTSA have similar clinical outcome scores, range of motion, strength, and rates of complications including dislocations at 82.4 months of follow-up.

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Session: Just-A-Minute Session 2

Time: 15:30 - 16:00

Room: Lounge

Abstract no.: 54760

MICROBIOLOGICAL CULTURE FINDINGS OF THE FEMORAL HEAD AS A PROGNOSTIC FACTOR FOR INFECTION IN PRIMARY HIP REPLACEMENT SURGERY

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Background: Musgrave Park Hospital operates a regional living donor bone bank, utilizing femoral heads harvested during primary total hip arthroplasty. Does a positive bacteriology culture at harvest predict a subsequent infection/prosthesis failure in donors? Methods: 12 year review of all femoral heads discarded due to positive microbiology culture, in patients with a minimum 3 years follow up from primary surgery. Clinical review of records including laboratory and radiological investigations. Cohort matched to controls for hospital deep infection rates over 10-year period. Results: 65 femoral heads identified (2003-2015), average age 63, ASA 2, 40% cementless implants. Cultured pathogens; 27 % Bacillus, 34% Staphylococcus, 11% Micrococcus, 12% Fungi, 11% unknown. 28% confirmed on repeated cultures (78% in Tryptose at 22C, none at 37 C and 22% in anaerobic Thioglycollate broth), 15% contaminate, 9% insufficient for further testing. Samples arrived within 24 hours to labs, average processing time 18 days. Three early superficial wound infections, two required oral antibiotics, one intravenous, with no systemic upset or inflammatory marker rise. Positive and confirmed microbiology not significant for superficial infection using Chi-Square test P=0.147. No deep infections or revision surgery. Unit deep infection rate for ASA 1/2 THR's 0.43% cohort 10936 patients. Conclusion(s): A positive microbiology culture at femoral head harvesting, employing modern aseptic techniques and laboratory testing is not always associated with elevated risks of infection or prosthetic failure after THR. Therefore, such findings cannot be used as a prognostic factor, supporting the limited published literature. Implications: We advocate auditing aseptic technique for specimen hand off (15% contaminated).

Date: 2019-12-05

Session: Just-A-Minute Session 2

Time: 15:30 - 16:00

Room: Lounge

Abstract no.: 53228

VIRTUAL FRACTURE CLINIC SERVICES AND PATIENT SATISFACTION SURVEY AT DISTRICT GENERAL HOSPITAL IN UNITED KINGDOM

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The aim of this audit was to evaluate our VFC services and patient satisfaction for this clinic design. We included all patients referred to Virtual Fracture Clinic via Emergency Department at Dudley Hospital from October 2018 to December 2018 which were mainly minor or stable configuration fractures such as greenstick/torus fractures, undisplaced clavicle, metacarpal and metatarsal fractures, fractures of foot and hand, radial head fractures and soft tissue injuries. These cohort of patients were then reviewed in virtual fracture clinic with three possible outcomes. The patients who had satisfactory history and examination findings and had sustained stable injuries were discharged virtually following phone discussion. Results: We analysed data from 124 VFC letters for this audit and of these we were able to contact 80 patients after 3 months via either post or telephonically. 49(40%) patients out of 124 we were able to discharge following virtual evaluation. 40(53%) patients out of 75 were followed up in general fracture clinics, 14(19%) patients in specialist clinics, 16(21%) patients in nurse led clinics and 5(7%) patients required operative intervention. 80 patients were contactable for satisfaction survey. After the survey 85% of patients were happy with the information leaflets and 97.5% found the instructions given in the leaflet easy to understand. 82.5% of the patients had manageable pain after the treatment and 85% had returned back to normal activities. Another good indicator of our VFC model was that 95% of the patients did not resort to GP.

Date: 2019-12-06

Session: What's New in Chinese Microsurgery?

Time: 07:00 - 08:00

Room: Grand Ballroom Hall C1

Abstract no.: 55962

EARLY COVERAGE OF GRADE IIIB TIBIAL FRACTURE TISSUE DEFECT WITH MODIFIED LATISSIMUS DORSI MUSCULOCUTANEOUS FLAP

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Introduction: To investigate the effect and feasibility of early repair of Gustilo Grade IIIB tibial fracture with modified latissimus dorsi flap. Methods: From January 2016 to January 2019, 17 cases (9 males and 8 females) of Gustilo grade IIIB tibial fracture combined with calf skin soft tissue defects were collected. 14 cases were hurt by car accidents and 3 cases by falling crash. The age is from 2 years old to 59 years old, with an average of 26 years old. All cases were treated with fracture reduction and external fixation by emergency operation. The soft tissue defect of the calf skin was repaired by modified latissimus dorsi flap. 3 cases were done at primary operation and other 14 cases were repaired in one week after primary treatment. Results: 16 cases of flap survived completely with wounds healed primarily. One case had partial necrosis of flap and repaired by second stage operation of anterolateral thigh flap. All injured limbs were successfully salvaged. Conclusion: The early application of modified latissimus dorsi flap for repairing skin soft tissue defect of Grade IIIB tibial fracture is safe and effective repair strategy to be considered.

Date: 2019-12-06

Session: What's New in Chinese Microsurgery?

Time: 07:00 - 08:00

Room: Grand Ballroom Hall C1

Abstract no.: 55964

SOLUTION OF INTRAOPERATIVE DIFFICULTIES DURING TWO-PADDLE ANTEROLATERAL THIGH FLAP HARVEST IN TREATING COMPLEX SOFT TISSUE DEFECT

Yipeng WU

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Introduction : in recent years, complex skin and soft tissue defects of limbs were not uncommon, which had led to the development of the two paddle free flap in clinical application, however, due to the variation of the perforator vessel's number, we found some two paddle free flap were hard to harvest during the surgery, in order to solve the problem, we summarised several feasible schemes. Methods: before the surgery we used CTA examination to observe the number and location of perforator vessel, then three main solutions were applied to 50 patients in solving the problem during harvesting, through the observation after surgery, we evaluated the therapy outcomes. Results: adequate preparation and flexible application during the surgery can effectively solve the harvest problem of two paddle free flap.

Date: 2019-12-06

Session: What's New in Chinese Microsurgery?

Time: 07:00 - 08:00

Room: Grand Ballroom Hall C1

Abstract no.: 55966

CLINICAL OBSERVATION OF SKIN FLAP REPAIR AFTER RADICAL RESECTION FOR SCROTAL AND PENILE PAGET'S DISEASE GUIDED BY SUBUNIT DIVISION OF PERINEAL BODY SURFACE.

Peng WEI

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Introduction : to investigate the curative effect of skin flap repair after radical resection for scrotal and penile Paget's disease guided by subunit division of perineal body surface.

Methods : from July 2016 to May 2018, seven male patients with perineal Paget's disease in stage A by Ray classification confirmed by preoperative pathology were treated. According to the results of rapid frozen section during operation, the extent of enlarged resection was determined. The adjacent rotary and advancing skin flaps were designed to repair the defect safter radical resection for scrotal and penile Paget's disease guided by subunit division of perineum. Results : all 7 cases healed well with good local morphology, satisfactory urination and sexual function. Follow-up for 5~12 months showed no recurrence of local skin lesions and no lymph node metastasis. Conclusion : skin flap repair after radical resection for scrotal and penile Paget's disease guided by subunit division of perineal body surface is an effective method with satisfactory perineal appearance and function.

Date: 2019-12-06
Session: Just-A-Minute Session 3
Time: 10:00 - 10:30
Room: Lounge

Abstract no.: 53916

EFFECT OF OBESITY ON FUNCTIONAL OUTCOME IN PRIMARY TOTAL KNEE ARTHROPLASTY - AN ANALYSIS OF (214) PRIMARY TOTAL KNEE REPLACEMENTS

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AIM: To evaluate the effect of body mass index (BMI) on the result of knee arthroplasty.
METHODS: This is a retrospective chart review of 214 patients who had knee arthroplasty (2009-2017) at New Mowasat Hospital in Kuwait. **RESULTS:** A number of 214 patients were included in the study. Of those patients, 78% were females. The mean age was 67, 8 years for males and 64, 9 years for females. Three patients had a normal body mass index (BMI) (18.5 to < 25). Overweight patients (BMI 25 to < 30) represented 22.9%. Obesity class I (BMI 30 to < 35) and obesity class II (BMI from 35 to < 40) were present in 23.9% and 31.3% of the patients, respectively. Morbid obesity (BMI greater than 40) was present in 20.5%. The mean duration of surgery was 55.3 min for unilateral TKR and 115.6 min for bilateral TKR. The mean length of stay in the hospital was 7 d. The complications that patients had after the operation included 2 patients who developed deep venous thrombosis, 3 patients developed surgical wound infections and none had a pulmonary embolism. One patient had knee MRSA infection and 2 patients had a periprosthetic fracture in the period of rehabilitation after a fall. Patients' characteristics did not have an effect on the operative duration of knee replacement nor the length of hospital stay. **CONCLUSION:** Our study shows that obesity does not have an effect on the operative duration nor the length of hospital stay following TKR.

Date: 2019-12-06

Session: Just-A-Minute Session 3

Time: 10:00 - 10:30

Room: Lounge

Abstract no.: 53477

BIPLANE FRACTURES OF THE DISTAL FEMUR: A PROPOSED CT BASED CLASSIFICATION AND SURGICAL MANAGEMENT.

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Introduction: Principles of management of distal articular femur fractures are similar to any other articular fracture i.e. to achieve anatomical reduction of the fracture fragments while providing rigid fixation to allow early functional mobilisation. Management of periarticular fractures requires a careful understanding of fracture characteristics and proper preoperative planning. The present AO-OTA classification is an X ray based classification system. The presence of multiple fragments and orientation of the fragments is now simplified with the use of CT scans. The functional outcome also depends upon the degree of articular comminution. There is a necessity of a new CT based classification system for distal articular femur fractures. We have devised a new classification system that is based on the CT findings, which assists in planning of surgical approaches, in implant selection and suggests the functional outcome. It classifies the fractures based upon the number of articular parts. Methods and result: Twenty five patients with biplanar distal articular fractures were included in our study. Three part fracture was the most common fracture type. The patients were classified and managed using the CT based classification. Conclusion: This CT based classification system is an ideal and a focused tool to assess the severity of the articular comminution, plan our approach to the fracture, decide the implants necessary and grade the prognosis. Simultaneously this classification provides an addition to the metaphyseal comminution which can be written together. In spite of it being very elaborate it also is easy to reciprocate and communicate

Date: 2019-12-06
Session: Just-A-Minute Session 3
Time: 10:00 - 10:30
Room: Lounge

Abstract no.: 53513

BONE WAX CAN LEAD TO FOREIGN BODY REACTION AND FOCAL OSTEOLYSIS

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Introduction: Bone wax is known to be associated with foreign body granuloma. We observed focal osteolysis after femoral offset correction with application of non-absorbable bone wax, consisting of paraffin and bees wax. Thus, we asked if a persistent foreign body reaction might lead to osteolysis and if there is progression of osteolysis over time. Methods: We retrospectively identified 425 patients between 01/2002 and 12/2006 that underwent offset correction with application of bone wax at our orthopaedic department. We included six hips (five patients) with persistent pain and clearly visible osteolysis on the x-rays in the area of the offset correction in the final study group (mean age 29 ± 9 [20-48] years). We performed histopathological examination of samples taken at later revision surgery. Additionally, we measured the relative area of the osteolysis (area of osteolysis/area of femoral head in %) in the x-ray follow-up over a mean time of 8.6 ± 2.5 [5-13] years. Results: Histologically, we found remaining wax as a foreign material surrounded by foreign body granuloma. We measured an increase in size of the osteolysis for all six hips. The mean initial quotient was $5.5\% \pm 2.7\%$ (2.3%–10.7%), the mean quotient at the latest followup was $11.2\% \pm 3.9\%$ (7.1%–17.3%). Comparing the values, the osteolysis has more than doubled. Conclusion: Bone wax can provoke long lasting foreign body granuloma with inflammatory and phagocytic reaction, resulting in progressive osteolysis. Based on our findings, we have abandoned the use of bone wax during femoroacetabular impingement surgery.

Date: 2019-12-06
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Time: 10:00 - 10:30
Room: Lounge

Abstract no.: 53529

EVALUATION OF RESULTS OF WEDGELESS 'V' SHAPED DISTAL FEMORAL OSTEOTOMY FOR GENU VALGUM IN ADOLESCENTS (13-18YRS)

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Introduction: The wedgeless 'V' shaped distal femoral osteotomy is a simple procedure for the correction of genu valgum. It has advantages of being wedgeless, no limb length discrepancy, small surgical exposure and short operating time. The purpose of the study was to evaluate functional, radiological outcome and complications of the procedure. Aims and Objectives: To evaluate 1. Knee score as compared to preoperative status. 2. Deformity correction by radiological evaluation of tibio-femoral angle, mechanical axis deviation correction and mechanical lateral distal femoral angle. 3. To study complications. Methods: A prospective case study was conducted on 30 patients from June 2016 to March 2018 at Orthopaedics department, Deen Dayal Upadhyay Hospital, New Delhi. Patients having severe collateral ligament instability, knee subluxation and sagittal plane deformity >15 degrees and genu valgum due to tibial deformity were excluded. Results: Genu valgum patients, treated with wedgeless 'V' shape distal femoral osteotomy, had mean operating time of 36.17 min, post-operative tibio-femoral angle of 5.1 degrees and union at 9.47 weeks. Partial weight bearing was started at 9.1 weeks and full weight bearing by 12.2 weeks. The average post-operative inter-malleolar distance was 1.63 cm, mechanical axis deviation was 2.8 mm. The average post-operative Bostman's et al knee score was 29.47 and 100% of the patients belonged to the 'excellent' group.

Date: 2019-12-06

Session: Just-A-Minute Session 3

Time: 10:00 - 10:30

Room: Lounge

Abstract no.: 53600

EFFECT OF FEMORAL COMPONENT POSITION RELATIVE TO TIBIAL INSERT ON CLINICAL OUTCOMES IN FIXED-BEARING UNICOMPARTMENTAL KNEE ARTHROPLASTY.

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Background: The biomechanical effect of femoral component position in unicompartmental knee arthroplasty (UKA) were well debated recently, but the direct relationship between clinical outcomes and positioning of femoral component relative to tibial insert remains unknown. We aimed to investigate whether femoral component position relative to tibial insert could affect clinical outcomes after fixed-bearing UKA. Methods: A total of 63 patients with anteromedial osteoarthritis and osteonecrosis of the knee underwent fixed-bearing UKA in this study, and their femoral component position relative to the tibial insert was assessed by standing anteroposterior radiographs at 1 month postoperatively. We classified patients into three groups according to the contact point of femoral component with tibial component: contacting at medial, centre, and lateral of the tibial component (group M, medial 22 knees; group C, centre 20 knees; group L lateral 21 knees). Patient-derived clinical scores using the 2011 Knee Society Score (KSS) were also assessed at 2 year postoperatively and compared among three groups using analysis of variance ($p < 0.05$). Results: The average two-year postoperative "symptom" and "patient satisfaction" of 2011 KSS was significantly higher in group C (22.1 ± 2.7 , 32.1 ± 5.7) than in group M (20.0 ± 3.6 , 26.6 ± 4.8) and group L (19.5 ± 3.3 , 25.4 ± 5.9). Conclusions: Central implantation of femoral component relative to the tibial insert played an important role in decreasing pain and finally resulted in better patient satisfaction at 2 year postoperatively after fixed-bearing UKA.

Date: 2019-12-06

Session: Just-A-Minute Session 3

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Abstract no.: 53622

MIDTERM RESULTS OF CEMENTLESS TOTAL KNEE ARTHROPLASTY

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Background: Cemented total knee arthroplasty (TKA) is most commonly used with an incidence of about 55% to 95% in several countries. In Japan, more than 80% of TKA are used with cemented design. The features of cementless fixation were creating a biologic bone-implant interface, but weakness of initial fixation and early aseptic loosening. Method: 59 cementless cruciate retaining TKAs and 48 cemented cruciate retaining TKAs who had a follow-up of over 5 years were analysed. Results: In intra-operative bleeding and after-operative bleeding of cementless TKAs was comparable to cementless TKAs (20ml and 20ml, 459ml and 419ml, respectively). In operation time of cementless TKAs was shorter than cemented TKAs (110 min. and 133 min., respectively). The mean improvement of range of motion in cementless TKAs was not significantly different (in extension: -8.6° to 0.21° , in flexion: 110° to 114°) when compared with cemented TKAs (in extension: -9.7° to 0.3° , in flexion: 108° to 116°). The implant survivorship of cementless TKAs was same as cemented TKAs (100%) at 5 years. One aseptic loosening was seen in cemented TKAs because of worsening of rheumatoid arthritis. Conclusion: This study has shown good outcome of cementless cruciate retaining TKA. Clinical outcome is now analysing by comparison of postoperative Oxford Knee Score (ONS).

Date: 2019-12-06

Session: Just-A-Minute Session 3

Time: 10:00 - 10:30

Room: Lounge

Abstract no.: 53660

OUTCOMES OF TOTAL KNEE REPLACEMENTS IN ASIAN PATIENTS WITH EARLY OSTEOARTHRITIS: TO OPERATE OR NOT TO OPERATE?

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Background: Total Knee Replacement (TKR) is sometimes performed in osteoarthritic (OA) patients with disabling symptoms without severe radiological changes. Objectives: This study aims to investigate the outcome of total knee replacements in Asian patients with early radiological grades of osteoarthritis. Methods: We performed a retrospective review of prospectively collected data on all patients undergoing a primary TKR for OA from 2009 to 2011 with a minimum follow up of 2 years. Patients with a Kellgren–Lawrence (KL) grade of two or less were categorized as early OA and anything more as severe OA. Primary outcomes were the KSS Knee, KSS Function and WOMAC scores. Results: A total of 510 TKRs were performed in 510 patients with a mean age of 64.9 years. 79 TKRs were performed in early OA and 431 in advanced OA. There were significantly younger patients in the group with early OA. Pre operatively, there were no significant differences in the outcome scores although patients with early radiological OA. At both 1 and 2 years follow up, the KL grade 3 and 4 group had significantly better KSS Knee and WOMAC scores. In terms of score margins, KL grade 3 and 4 group showed significant improvement in KSS knee score margin at both 1 and 2 years. Conclusions: The outcomes of TKR in patients with early radiological changes of OA are inferior compared to those with significant radiological changes. Such patients must be cautioned and their expectations managed accordingly.

Date: 2019-12-06

Session: Just-A-Minute Session 3

Time: 10:00 - 10:30

Room: Lounge

Abstract no.: 53662

QUALITATIVE STUDY EXPLORING PATIENT EXPERIENCES OF DISABILITY FOLLOWING AN OPEN TIBIA FRACTURE IN MALAWI

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Introduction: The vast majority of trauma occurs in low income countries (LICs) and, every minute, ten road traffic victims are left permanently disabled worldwide. The Lancet Commission on Global Surgery has suggested that open fractures should be treated in all first level hospitals, however, understanding the patient's experience of the trauma, the care they receive and the adjustments they have to make subsequently is lacking in LICs. Malawi is a LIC with the second highest ratio of road traffic injuries in the world and much qualitative data is still unexplored. Methods: The aim of the study is to explore patient experiences of disability and their return to work following an open tibia fracture. A purposive sample of ten patients was selected from the trauma registry in Malawi, with a diverse spread of demographics (age, gender, mechanism of injury, treatment and timeframe since injury). Interviews were conducted one-to-one during a two-week period. The interviews were recorded and analysed using NVivo in order to identify key themes of disability using inductive theme analysis. Results: The participants talked about their experience surrounding their injury, quality of life, their treatment, ability to return to work and the wider economic impact on their household. Conclusions: The anxieties expressed by participants will help consent and inform patients before treatment of their open tibia fracture and help with patient information leaflets once discharged.

Date: 2019-12-06

Session: Just-A-Minute Session 3

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Room: Lounge

Abstract no.: 53669

TEMOZOLOMIDE ARRESTS A DOXORUBICIN-RESISTANT FOLLICULAR DENDRITIC CELL SARCOMA PATIENT-DERIVED ORTHOTOPIC XENOGRAFT (PDOX) MOUSE MODEL

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Introduction: Follicular dendritic cell sarcoma (FDCS) is rare and recalcitrant sarcoma. The CHOP chemotherapy has been used as systemic therapy for FDCS, which contains cyclophosphamide, doxorubicin (DOX), vincristine, and prednisolone. However, clinical outcome remains poor even though CHOP was administered. A patient's FDCS tumour was previously implanted orthotopically to establish a patient-derived orthotopic xenograft (PDOX) model. We previously found resistant to DOX on the FDCS PDOX model. In the present study, we evaluated the efficacy of temozolomide (TMZ), trabectedin (TRAB), and pazopanib (PAZ) on the DOX resistant FDCS PDOX model. Methods: The FDCS PDOX model was randomized into five groups of eight mice, respectively. Group 1, Control (Ctrl) treated with PBS; Group 2, treated with DOX; Group 3, treated with PAZ; Group 4, treated with TMZ; Group 5, treated with TRAB. Treatment was performed for 3 weeks. Treatment efficacy was evaluated on tumour volume ratio and adverse event was evaluated based on body weight ratio. Results: Tumour volume ratio was the Ctrl group: 11.35 ± 4.50 , DOX group: 8.24 ± 1.87 , PAZ group: 9.67 ± 4.66 , TMZ group: 4.28 ± 1.41 , TRAB group: 6.97 ± 3.23 , respectively. TMZ arrested the FDCS PDOX model compared to the control group ($p < 0.05$). Body weight ratio was no significant difference among all groups. Conclusion: The present study demonstrates that TMZ is the most effective for the FDCS PDOX model established from a patient who failed DOX treatment. There is possibility that TMZ has effective to FDCS patients who failed the first line chemotherapy.

Date: 2019-12-06

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Abstract no.: 53741

COMPARISON OF LONG VERSUS SHORT NAIL FOR UNSTABLE PERTROCHANTERIC FRACTURE TO PREVENT EXCESSIVE NECK SHORTENING: A RETROSPECTIVE STUDY

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Objectives: Cephalomedullary nail has been used to fix unstable pertrochanteric fractures. Long nail has theoretically stronger stability than short nail. On the other hand, usage of long nail needs more operation time and concomitantly increases risk of bleeding. The purpose of this study is to compare the postoperative reduction loss of fixing pertrochanteric fractures without posteromedial support between these two kinds of nail. Design: retrospective cohort study Setting: Japanese referral hospital Patients: Patients aged 65 years or older fixed by cephalomedullary nail for treatment of a pertrochanteric hip fracture without posteromedial support (AO classification 31A1 and A2) between September 2010 to August 2017. Exposure and Comparison: Fixed by long / short nail Main outcome measurement: Whether postoperative telescoping after 3 weeks from surgery exceeded from 8mm. Results: Of the 509 patients, 485 patients were fixed by short nail and the other patients were by long nail. Primary outcomes were measured in 255 patients. There was no significant difference in cumulative incidence of primary outcome by multivariate logistic regression analysis (adjusted odds ratio: 3.0 ,95% confidence interval: 0.76 to 12, p=0.12). Sensitivity analysis using propensity score showed similar results. Conclusion: In the nailing of pertrochanteric fractures without posteromedial support, there was no significant usefulness of long nail for preventing postoperative excessive neck shortening.

Date: 2019-12-06
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Abstract no.: 53756

ACUTE VASCULAR INJURIES IN 404 GARTLAND TYPE III SUPRACONDYLAR FRACTURES OF THE HUMERUS IN CHILDREN: URGENCY MANAGEMENT AND THERAPEUTIC CONSENSUS

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Background: Treatment of acute vascular injuries in Gartland III supracondylar humeral fractures (SCFH) in children is still debated. Our experience of twenty years based on the urgent management of 404 cases and their vascular complications allowed to determine a therapeutic consensus in France. Methods- 404 patients with Gartland III SCFH were collected: extension-fractures in 383 (95%) and flexion-fractures in 21 (5%) patients. Mean age was 7.6 years. Acute vascular compromise was noted in 68 cases (17%) of all extension-fractures: absent radial pulse but well perfused hand in 63 (16%) and ischemia in 5 (1%) cases. The mean follow-up was 8.4 years. Repeated Doppler ultrasonography and anatomical reduction with stable percutaneous pinning were urgently performed. Results- In all 63 cases of well-perfused hand treated by closed anatomic reduction and fixation, the radial pulse was restored: immediately in 42 (67%) and few days later in 18 (28%) cases. The 3 (5%) remaining cases underwent peroperative surgical release of the brachial artery entrapped within the fracture site following imperfect reduction. The 5 cases of primary ischemia underwent open exploration and vascular repair with restoration of the blood flow. Conclusion- This study allows to recommend our defensive strategy to manage these complicated SCFH in children: - Urgent closed anatomic reduction and fixation - Absence of the radial pulse with a pink hand warrants close postoperative vascular observation. It is not an absolute indication for immediate invasive investigation and surgical exploration- White hand or postoperative changes of the distal perfusion require surgical vascular exploration.

Date: 2019-12-06

Session: Just-A-Minute Session 3

Time: 10:00 - 10:30

Room: Lounge

Abstract no.: 53764

HAND DOMINANCE, CLAVICLE LENGTH AND SHORTENING IN FRACTURES. WHEN DECIDING TO OPERATE, "FIRST DO NO HARM

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Background: The assumption of symmetry has previously been questioned with regard to clavicular length and found to be unreliable. However, these studies were small and did not involve Asians, a patient population known to have varying anatomy. Objectives: The purpose of our study was to determine the extent of asymmetry in terms of clavicle length as this has worldwide clinical implications. Methods: Two individuals clinically measured 201 pairs of Asian clavicles. Length was defined as the distance between either the sternoclavicular joint (SCJ) and acromioclavicular joint (ACJ) or suprasternal notch (SSN) and ACJ. Both individuals measured these in both clavicles twice and in each volunteer twice to determine the extent of lack of symmetry and intra- and inter-observer reliability. Other parameters recorded included age, sex, race, occupation and hand dominance. Results: Right clavicles were found to be shorter. If separated into two groups based on hand dominance, clavicles of the dominant arm were found to be shorter. Conclusions: Even if osteometric measurements are standardized using bony landmarks, we strongly advocate not applying this technique to clavicle measurements in view of the inaccuracy and unreliability, especially if this is going to determine the necessity for surgery in patients with fractures of the clavicle and what is thought to be shortening. Clavicle length is also likely related to hand dominance with clavicles of the dominant arm being shorter. Both these factors have significant implications on the clinical measurement of clavicular length post-fracture and its use as a determinant for surgery.

Date: 2019-12-06

Session: Just-A-Minute Session 3

Time: 10:00 - 10:30

Room: Lounge

Abstract no.: 53788

CONGENITAL OSSEOUS ANOMALIES OF THE CERVICAL SPINE: OCCURRENCE, MORPHOLOGICAL CHARACTERISTICS, EMBRYOLOGICAL BASIS AND THEIR CLINICAL SIGNIFICANCE. A COMPUTERISED TOMOGRAPHY BASED STUDY

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Purpose: Congenital anomalies of the cervical spine range from simple segmentation defects to complex cranio-cervical instabilities. Studies published till date has focused mainly on upper cervical anomalies. **Materials and methods:** 930 cervical spine CT scans done in our hospital during January 2014-November 2017 were screened by 2 independent observers to document anomalies of both upper cervical and lower cervical spine. CT scans done for infection, tumour, deformity were excluded. Different morphological variations, embryological basis and clinical significance of the anomalies are discussed. **Results:** Of the 930 CT scans screened, 308(33.1%) had some congenital anomaly. Of these 184(59.7%) were males and 124(40.2.7%) females with a mean age of 44.2 years (14-78years). A total of 377 anomalies were noted. 69 (7.4%) had more than one anomaly. 250(26.8%) anomalies of upper cervical region (occiput to C2-C3 disc space) were identified. 108(11.6%) high riding vertebral artery (HRVA) and 75(8%) ponticulus posticus (PP) were the most common upper cervical anomalies. 127(13.6%) anomalies of the lower cervical spine (C3-C7) were noted of which Double foramen transversarium (DFT) was the most common anomaly seen in 46(4.8%) cases. **Conclusion:** 33.1% scans had at least one congenital anomaly. Some of them like abnormal facet complex, arch anomalies have to be differentiated from fracture in a trauma patient. Anomalies like ponticulus posticus have to be looked for during preoperative planning to avoid catastrophes during surgery. Knowledge of these anomalies is important as different anomalies have different clinical course and management.

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Room: Lounge

Abstract no.: 53797

SURGICAL OUTCOMES OF ELDERLY PATIENTS AGED MORE THAN 80 YEARS WITH DISTAL RADIUS FRACTURE: COMPARISON OF EXTERNAL FIXATION AND LOCKING PLATE

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Purpose: To compare the outcomes after surgical intervention, including external fixation (EF) with the optional addition of K-pins or open reduction and internal fixation with a volar locking plate (VLP), in patients with distal radius fracture aged > 80 years. **Methods:** We reviewed 69 patients with a distal radius fracture aged > 80 years who treated under surgical intervention from 2011 to 2017. Of them, 41 patients were treated with EF with the optional addition of K-pins, while 28 patients were treated with open reduction and internal fixation with a VLP. Their demographic data and complications were recorded, and preoperative, postoperative, and last follow-up plain films were analysed. **Results:** The radiological parameters, including ulnar variance and radial inclination, at the last follow-up were significantly more acceptable in the VLP group (EF 3.4 ± 2.8 mm vs VLP 1.8 ± 3.2 mm; EF $19.1 \pm 5.9^\circ$ vs VLP $22.1 \pm 5.2^\circ$, respectively). The overall incidence of complications was lower in the VLP group (EF 22/41 vs VLP 5/28). Eleven out of the 41 (27%) patients treated with EF developed pin tract infections and required oral antibiotic treatment, while 1/28 (4%) patients treated with internal fixation developed an infection. **Conclusions:** VLP provides better radiological outcomes and lower complication rates than EF. Therefore, although EF is still widely used because of its acceptable results and easy application, we recommend VLP as a suitable treatment option for distal radius fracture in the geriatric population aged > 80 years.

Date: 2019-12-06

Session: Just-A-Minute Session 3

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Room: Lounge

Abstract no.: 53815

ARTHROSCOPIC EXCISION ARTHROPLASTY OF THE STERNOCLAVICULAR JOINT FOR OSTEOARTHRITIS: A CASE-SERIES OF 50 PATIENTS WITH A MINIMUM 2-YEAR FOLLOW-UP

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Aim: To report the results of a consecutive series of 50 patients who underwent an arthroscopic excision of the sternoclavicular joint (SCJ) for primary osteoarthritis refractory to conservative treatment. **Methods:** We undertook an arthroscopic excision of the SCJ in 50 patients with primary osteoarthritis refractory to conservative treatment. This included an adequate course of physiotherapy and at least one ultrasound guided cortisone injection. There were 26 female and 24 male patients and the mean age at the time of surgery was 54.5 years (range 39 – 72). Patients were assessed pre-operatively and at final follow-up with the Constant, Rockwood SCJ and Quick-DASH scores. The mean follow-up was 41.8 months (range 24 – 73). Surgery was undertaken as a day-case with no shoulder immobilisation. **Results:** Forty-five patients were available at final-follow up. The median Constant score had increased from 55 (range 37-79) to 72 (range 38-92), Rockwood score from 6(range 4-9) to 13(range 4-15) and Quick-DASH 36 (range 18-69) to 12 (range 0-51). All of these changes were statistically significant ($p < 0.0001$). There were no complications and, specifically, no problems with joint instability. Forty-four of the 45 patients were pleased with the results of their surgery and indicated that they would be happy to have the procedure again. **Conclusion:** The results of this study show that arthroscopic excision arthroplasty of the SCJ is a satisfactory treatment for primary SCJ osteoarthritis refractory to conservative treatment.

Date: 2019-12-06

Session: Just-A-Minute Session 3

Time: 10:00 - 10:30

Room: Lounge

Abstract no.: 53858

MELTING TEMPERATURE MAPPING METHOD FOR RAPID IDENTIFICATION OF UNKNOWN PATHOGENIC MICROORGANISMS FOR PERIPROSTHETIC HIP JOINT INFECTION

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Aim: We used a melting temperature (T_m) mapping method for rapid identification of unknown pathogenic microorganisms for periprosthetic hip joint infection and evaluated its usefulness by using detailed clinical data. **Methods:** Using only seven primer sets, more than 100 bacterial species can be identified. Samples suitable for T_m mapping identification can be identified using the difference value. Moreover, this method can be used to rapidly diagnose the absence of bacteria in clinical samples. Seventeen synovial fluid samples were collected from 11 patients suspected of having bacterial infection, including 11 samples from total hip arthroplasty and 6 from hemiarthroplasty. Finally, the usefulness of our T_m mapping method was evaluated using detailed clinical data. **Results:** We tested the T_m mapping method in patients suspected of having periprosthetic hip joint infection. From the results of analysis of the clinical data, 7 samples had infection and 10 had no infection. In 6 (85.7%) of the 7 samples, the positive results matched the culture results based on the detection level. One sample that could not be diagnosed was positive for fungal infection. Eight samples were negative for infection according to the T_m mapping method and culture results. Two samples had positive results despite of the negative culture results, but one was considered a case of bacterial eradication and the other was considered a case of contamination. **Conclusions:** The aforementioned findings were obtained within 4 hours of joint fluid collection. The T_m mapping method is considered useful for identifying periprosthetic joint infectious diseases requiring prompt treatment.

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Abstract no.: 53872

RETROSPECTIVE COMPARISON BETWEEN SURGICAL OUTCOME OF INTERNAL FIXATION FOR FEMORAL SHAFT FRACTURES - EXPANDABLE NAILS VS. INTERLOCKING NAILS

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Interlocking nails have been the implant of choice for femoral shaft fractures since many decades. But this implant has also been criticised for its prolonged surgical time, high fluoroscopy exposure, requirement of extensive reaming, per-operative bleeding, difficulty in nail insertion and placement of locking bolts. Attempts are on to overcome all these problems associated with interlocking nails. Flexible expandable nails have emerged as a viable alternative which have shown some promise to deal with the above difficulties. But comparative studies are essential to establish any significant advantages or disadvantages. Forty six patients of femur fractures operated with interlocking nails and 39 patients treated with expandable femoral nails were compared retrospectively from the medical records of a tertiary care hospital in India. Factors like duration of surgery, radiation exposure, blood loss, need for reaming, post-operative rehabilitation, time for union, weight bearing and functional outcomes were compared. Lower limb functional scale (LEFS) score was used to assess functional outcome after minimum of one year follow-up. Duration of surgery, radiation exposure, blood loss and need for reaming were significantly less in the expandable nailing group. But there was no significant difference in time for union, weight bearing and functional outcome. The most important limiting factor for the expandable nail was the cost of the implant which was significantly higher than the standard interlocking nail. The expandable nail was very useful to minimize the per-operative complications and problems, but there was no difference in the long term outcome compared to interlocking nails.

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Abstract no.: 53883

COMPARISON OF MRI MEASURED FEMORAL INTERCONDYLAR NOTCH WIDTH RATIO AND ALPHA ANGLE IN PATIENTS WITH AND WITHOUT ACL (ANTERIOR CRUCIATE LIGAMENT INJURY)

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Introduction: ACL injuries most commonly occur due to non contact mechanisms and are often treated surgically. Several studies have demonstrated morphological predisposition such as a narrow intercondylar notch as a causative mechanism. Identification of such people can help in developing preventive strategies. **Methods:** 50 patients clinically diagnosed to have ACL injury and who underwent MRI Scan, and 50 patients who did not have ACL injury but underwent MRI scan were identified and formed 2 groups. The intercondylar notch width index and alpha angle were measured in coronal and sagittal views. **Results:** The alpha angles and intercondylar notch width ratio were different in both groups. Mean ICNWR (intercondylar notch width ratio) in patients with ACL injury were 0.29 with SD of 0.04 and Mean ICNWR in patients without ACL injury was 0.32 with SD OF 0.32. The p VALUE is 0.0001 which is statistically significant. The mean Alpha angle was greater in patients with ACL injury 57.4 +/- (5.5) versus 56.0 +/- (4.5) P =.009. **Conclusion:** Patients with high alpha angle and narrow intercondylar width ratio are more prone to ACL injuries. The morphological measurements were different in respect to males and females. This study demonstrates that in patients with high alpha angle and narrow intercondylar notch width ratio the incidence of ACL injury is high. Alpha angle and intercondylar notch width ratio can be included as preventive screening tools in individuals involved in sporting and athletic activity to prevent ACL injuries.

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Abstract no.: 53893

PERI-OPERATIVE MORTALITY IN HIP ARTHROPLASTIES: THE WHEN HOW AND WHY?

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Introduction: With improved survivorship more comorbid elderly patients are being operated for hip arthroplasties. Worldwide all-cause 30-day and 1-year hip arthroplasty mortality ranges 7-9% and 21-30% respectively, the cause of which remains obscure. The scarcity of mortality data in our country led to systematic effort with aim of evaluating perioperative mortalities in hip arthroplasties, determining better fixation method, and reducing avoidable mortalities. Materials & methods: 252 consecutive patients (133males & 119 females, mean age 58.68years) operated for hip arthroplasties (cemented and uncemented THR and bipolar) were observed prospectively over 2years. Heart-rate, O₂ saturation & BP were recorded at specific surgical steps and post-operatively for 48 hours. Post-operative Trop-T & 2D-Echocardiography were done in all patients and D-Dimer & CTPA in indicated ones. Every post-operative death was extensively studied. Results & discussion: Majority(63%) were operated for traumatic indications. 48% belonged to ASA grade-1, 46% grade-2 and 4% grade-3. There was statistically significant association of diagnosis($p=0.00241$) i.e. traumatic aetiology, ASA grade 2($p=0.00163$), raised Trop-T($p=0$), chest pain/breathlessness($p=0$), raised D-Dimer($p=0.04109$) and pulmonary embolism[PE](0.00119) with mortality. Our Mortality rate post-op 48 hours was 5.5%, 30 day-8% & 1-year-19% with no intra-operative deaths. Out of 14 deaths, 10 were traumatic aetiology and 4 non-traumatic. There were 8 deaths(out of 14-57.14%) in 127 cemented(6.29%) & 6 deaths(out of 14-42.86%) among 125 uncemented arthroplasties(4.80%). There was no statistically significant association (0.07947) of type of surgery(cemented or uncemented) with mortality. Conclusions: Selection of implant (cemented or uncemented) made no difference in eventual mortality. Cardiovascular complications have overtaken PE as leading cause of death after hip replacement. Orthopaedicians with anaesthetists must individually evaluate high-risk patients(with cardiovascular and respiratory co-morbidities), intensive monitoring for 48 hours post-operatively and

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THE NEW ULNAR WINDOW TRICEPS SPARING APPROACH FOR EXTRAARTICULAR DISTAL HUMERAL FRACTURES

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The principal objective of treating extraarticular distal humeral fractures is restoring alignment and achieving stable fixation aimed at facilitating early elbow range of motion, essential for a good functional outcome. It is often difficult to obtain rigid fixation in distal fractures of the humeral diaphysis without compromising the elbow. Alonso-Llames triceps-sparing approach involves sub-periosteal elevation of the distal triceps off the posterior aspect of the humerus. This approach is applicable in treating fractures of the distal humerus by developing "windows" along the medial and lateral borders of the triceps without injuring the triceps aponeurosis and its insertion into the olecranon. In nine patients, who had extraarticular distal humeral fracture, named after the author who first described them as Holstein-Lewis fractures, I made triceps sparing approach through only one - ulnar window. As a first step, the ulnar nerve is isolated and protected with a vessel loop. Proximally, the ulnar nerve is followed along its course on the medial intermuscular septum, and the triceps muscle is mobilized radially extensively. In all cases I made perpendicular position of the plate. In all patients I found full and fast recovery of range of motions after 4 weeks from surgery, without signs of nerve injury. I have not found an article which describe these approach for treatment of extraarticular distal humeral fracture. For a definitive conclusion about the impact of the approach to the outcome of treatment we need to conduct randomized research of all anatomic approaches.

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THE EFFECT OF NSAIDS ON POST-FRACTURE BONE HEALING: A META-ANALYSIS OF RANDOMISED CONTROLLED TRIALS

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INTRODUCTION: The aim was to analyse whether non-steroidal anti-inflammatory drugs (NSAIDs) have an adverse effect on bone healing by evaluating all available human randomized controlled trials (RCTs) on this subject. **METHODS:** A systematic search of electronic databases (PubMed, MEDLINE, and Cross-References) was performed to identify RCTs comparing the occurrence of nonunion in patients who received NSAIDs to the control group. Risk of bias of the studies was assessed. Nonunion was the main outcome evaluated, however, regression analysis was used to estimate the relative risk comparing duration and type of NSAIDs. **RESULTS:** Six RCTs (609 patients) were included. The risk of nonunion was higher in the patients given NSAIDs after the fracture (P-value= 0.0009, relative risk[RR] = 2.9, 95% confidence interval[CI] = 1.6 to 6.3). However, once the studies have been categorized to the duration of NSAIDs, those who received short period of NSAIDs (<2 weeks) did not show the risk of nonunion (P-value= 0.12, RR = 2.8, CI= 0.8 to 9.3) compared to those received long period of NSAIDs (>4 weeks) (P-value = 0.0002, RR= 4.1, CI= 2.1 to 8). Also, indomethacin agent has associated with high nonunion (P-value = 0.0001, RR = 3.9, CI = 2.3 to 13.9) compared to other NSAIDs which did not show a nonunion risk (P-value = 0.24, RR= 2.3, CI= 0.6 to 8.9). **CONCLUSIONS:** Using NSAIDs for long period (> 4 weeks) after fracture is significantly associated with nonunion especially with indomethacin agent. However, short period of NSAIDs (< 2 weeks) did not show the adverse effects of nonunion. Overall, further studies are required to support our conclusion.

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STUDY OF 500 CASES OF RADIOLOGICAL VISIBLE PATHOLOGY OF SACROILIAC REGION

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This study undertaken to see problems in this region which remains undiagnosed usually presents LBA, discomfort, sciatica & in advance cases difficulty in walking, sitting and sleeping on the affected site and difficulty in getting up in morning. This is study of 500 cases over 15 years from 2001 to 2015. Most common is osteoporosis & osteomalacia, metastasis, Inflammatory, Tuberculosis, Stress fracture, primary tumours and nonspecific otitis. By the time problem visible on x-ray is already advanced especially in malignancy & tuberculosis & metabolic disorders. Strong suspicion required before xray appearance by investigations like CT, MRI, nuclear studies, DEXA bone scan, IHC markers, metabolic profile and blood & urine examination & other related to see other organs depending on pathology. Out of 500 cases 213 osteoporosis & osteomalacia, 73 inflammatory 52 tuberculosis, 68 cases metastasis, 50 stress fracture, 24 cases condenses ilia and 20 nonspecific Sacroilitis. In metastasis common is prostate, breast, thyroid, lungs, git, tonsil & in primary commonest Multiple Myeloma, Chodrosarcoma, GCT, Ewing, Chordoma. Treatment depends on pathology, satisfactory in metabolic, tuberculosis, ank. spondylitis. In primary malignancy depends on prognosis of primary and if surgical intervention needed even if less malignant morbidity high due to location and complete removal mostly impossible. Pathological fracture dislocation also seen. In surgical treatment fusion needed for stabilisation as after local resection in malignancy. In Tuberculosis, arthrodesis rarely needed, stress # and metabolic disorder responds to medical treatment, in old osteoporotic small fractures missed on x-ray needs C.T.

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RISK FACTORS FOR MECHANICAL FAILURE FOLLOWING FIXATION OF PROXIMAL FEMORAL FRACTURES WITH THE PFNA II – ARE THEY DIFFERENT IN ASIAN PATIENTS?

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Introduction: The proximal femur nail anti-rotation nail (PFNA II DePuy Synthes) is one of the most commonly used implants for intramedullary nailing of unstable proximal femoral intertrochanteric fractures. We aim to identify risk factors predisposing to mechanical failure of fixation with PFNAII in an Asian population. Methodology: We retrospectively reviewed 295 patients who underwent PFNAII fixation for intertrochanteric fractures between January 2014 and June 2018 at our institution. We excluded patients with a follow-up period of less than 4 months and patients with polytrauma. 204 patients were eligible for analysis, of which 22 had mechanical failure of PFNAII. We compared these patients with respect to demographics, medical co-morbidities, quality of reduction according to the Baumgartner scale, calcar restoration, blade position according to Cleveland Zones, stability of fracture according to OTA/AO classification, neck-shaft-angle, tip-apex distance, and neck-of-femur bone mineral density T-score. Results: Good quality of reduction reduced risk of mechanical failure whilst posterior blade position in lateral hip X-ray predicted it, with odds ratios of 0.147 (95% CI 0.030-0.733; p=0.019) and 12.12 (95% CI 1.583-92.825; p=0.016) respectively. On univariate analysis, the mechanical failure group were older, had poorer calcar restoration, more unstable fracture patterns, more varus neck-shaft-angle, and trochanteric starting points that were lateral to or on the tip of the greater trochanter. However, these were not statistically significant on multivariate analysis. Conclusion: We identified risk factors predisposing to mechanical failure of PFNAII in an Asian population. Some of these factors are similar to those reported in other populations.

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VASCULARISED FIBULAR GRAFT: RESULTS AND INDICATIONS

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Introduction: Taylor's technique using the vascularised fibula for 42 years is still relevant. The purpose of this study is to evaluate the results concerning bony union and complication, also to analyse the risk factors influencing these results and failure. Methods: The authors reports a homogenous series of 41 cases of bone reconstruction with vascularized fibular graft in the last seventeen years. Mean age was 25 years. The male rank was predominant, 25 male. Surgical indication included oncological resection in 34 cases and traumatological surgical treatment in 7 cases. The involved bones were the femur (18 cases), tibia (14 cases), humerus (5 cases), radius (3 cases), and one case in midfoot. Results: Average follow-up was 35 months. Bone union was achieved at a mean of 7,4 months. Ultimately, seven patients (17%) had a failure ended up in amputation in five cases. Infection accounts for 86% of failure. The rate of union was 70%. The mean MSTS rating was 62%. Discussion: These results suggest that the femoral site, septic complication and the quality of the treatment undertaken are the main prognostic factors. Locked fixation and supplementary cortico-cancellous bone grafts increased only the bone fusion time. Conclusion: The analysis of our failures shows the interest of a microvascular expertise, a light and stable fixation, maximal bone-to-bone coaptation and the importance of prevention of post-operative infection.

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A PROSPECTIVE COHORT STUDY ASSESSING THE SURGICAL TEAM'S LEARNING CURVE WITH ROBOTIC TOTAL KNEE ARTHROPLASTY IN A HIGH-VOLUME ARTHROPLASTY CENTRE

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Purpose: The primary objective of this study was to determine the surgical team's learning curve for robotic TKA through assessments of operative times, surgical team comfort levels, accuracy of implant positioning, limb alignment, and postoperative complications. Secondary objectives were to compare accuracy of implant positioning and limb alignment in conventional jig-based TKA versus robotic TKA. **Methods:** This prospective cohort study included 60 consecutive conventional jig-based TKAs followed by 60 consecutive robotic TKAs performed by a single surgeon. Independent observers recorded surrogate markers of the learning curve including operative times, stress levels amongst the surgical team using the state-trait anxiety inventory (STAI) questionnaire, accuracy of implant positioning, limb alignment, and complications within 30 days of surgery. Cumulative summation (CUSUM) analyses were used to assess learning curves for operative time and STAI scores in robotic TKA. **Results:** Robotic TKA was associated with a learning curve of seven cases for operative times ($p = 0.01$) and surgical team anxiety levels ($p = 0.02$). Cumulative robotic experience did not affect accuracy of implant positioning ($p=0.45$), limb alignment ($p=0.21$), posterior condylar offset ratio ($p=0.68$), posterior tibial slope ($p=0.13$), and joint line restoration ($p=0.34$). Robotic TKA improved accuracy of implant positioning ($p<0.001$) and limb alignment ($p<0.001$) with no additional risk of postoperative complications compared to conventional manual TKA. **Conclusion:** Implementation of robotic TKA led to increased operative times and heightened levels of anxiety amongst the surgical team for the initial seven cases but there was no learning curve for achieving the planned implant positioning.

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Abstract no.: 52808

INFLUENCE OF THE LOCAL CORRECTION ON THE SAGITTAL BALANCE OBTAINED BY MECHANICAL KYPHOPLASTY: PRELIMINARY RESULTS OF A MULTICENTRIC RETROSPECTIVE STUDY, THE 'AURORA PROJECT'

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Introduction: The aim of our study is the evaluation of the relationship between the "sagittal balance" and the focal correction of a vertebral deformity, consequent to collapse or fracture, through third-generation mechanical kyphoplasty systems. Materials and methods: The "Aurora Project" is a multicentric retrospective study which included patients suffering from traumatic or fragility dorso-lumbar vertebral fractures. Since January 2016, 17 patients were included in the study. The primary end point of the study was to perform a qualitative and quantitative assessment of the sagittal balance, global and segmental, before and after a mechanical kyphoplasty performed using Spine Jack®. The patients underwent radiographic examination of the dorso-lumbar spine in lateral projection, pre- and post-operative (at month 1, 3 and 6). This study was based on the use of a dedicated software for analysis, reconstruction and interpretation of radiographic images. Results: The correction performed at different levels produced different effects in term of deformity correction. It was demonstrated how the segmental reconstruction has unequivocally an important effect on the balance of the spine, confirming the initial hypothesis of the study. Discussion and conclusions: We can affirm that the methameric correction obtained by mechanical kyphoplasty has a global repercussions on the sagittal balance. We can recognize a double therapeutic value for the third generation vertebral augmentation systems. They are useful for the treatment of pain, but especially they are able to prevent the sagittal imbalance and its biomechanical repercussions in case of vertebral compression fractures.

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**NEW INNOVATION FOR FOOT DROP: INTERNAL MECHANICAL DEVICE
PROTOTYPE**

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Introduction: Foot drop is a paralysis or weakness of the dorsiflexor muscles of the foot and ankle, resulting in dragging of the foot and toes and it is a significant complication post trauma, arthroplasty surgery, neurophysiological deficit or tumour. Aim: the aim of the study was to create an endoprosthesis which will function biomechanically and give almost a normal functioning foot so patients suffering from the injury can walk normally. Method and design: we used real patient forces as well as we measured the average weight of the foot in both sexes, and we developed a bio mechanical endoprosthesis from Nitinol attached with 2 other devices at each end in order for the device to be attached to the bone as well as to the muscle tendon and the design received a US patent, and we simulate the device as first step and we implanted in cadaver legs as second step. Results: The device simulation of the yield strength showed an infinite extension with Mean force of 17.5 Newton as well as same results in cadaveric foot. Conclusion: the device is very simple in itself but has tremendous potential and it will be ideal treatment in the future for foot drop.

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Abstract no.: 52833

A SURGICAL ALGORITHM FOR THE MANAGEMENT OF RECALCITRANT DISTAL FEMUR NONUNIONS BASED ON DISTAL FEMORAL BONE STOCK, FRACTURE ALIGNMENT, MEDIAL VOID AND STABILITY OF FIXATION

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Background: Recalcitrant distal femur nonunions (RDFN) are a challenge in management due to factors including poor bone stock, multiple surgeries and metaphyseal bone loss. Based on our experience, we devised an algorithm and we present the results of 62 cases of RDFN managed following it. Methods: Our algorithm was formulated after analysing 34 cases of RDFN and it involved four factors: distal femoral bone stock, extent of medial void, alignment of fracture and stability of fixation. Each factor was addressed specifically. Between 2012 and 2015, 62 patients with RDFN at a mean age of 47.4 years (26-73) and 2.3 prior surgeries (2-6) were managed following the algorithm. 58 patients required revision osteosynthesis to improve alignment and achieve a stable fixation. 4 elderly patients with poor bone stock were managed with arthroplasty. Five patients without medial void required only cancellous autograft bone grafting, 47 with less than 2 cm void were treated with an allograft strut inserted in the metaphysis and 6 with void greater than 2 cm had medial plating done. Results: 57 patients treated with osteosynthesis achieved union at an average of 7.4 months (6-11) and the 4 patients managed with arthroplasty also had a favourable outcome. One patient managed with revision osteosynthesis had a non-union and needed an arthroplasty procedure. The average LEFS score was 67(51-76) at an average follow up of 18.2 months (12-33) Conclusion: Our stepwise surgical algorithm would help surgeons identify factors to be addressed and guide them towards interventions that are necessary to achieve a successful outcome in RDFN.

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FHL TRANSFER IN TREATMENT OF NEGLECTED ACHILLES TENDON RUPTURE

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Introduction: Patients with neglected Achilles tendon rupture are at risk of persistent pain and poor functional outcome - weakness and impairment of everyday activities. Results of the two-incision Achilles tendon reconstruction using flexor hallucis longus (FHL) transfer were evaluated. Methods: Between 2003 – 2015 we operated on 29 males, 17 females with the mean age of 44,2 years (29 – 62). The average surgery delay from an injury was 7 weeks (5 – 26). The mean follow-up was 35 months (24 – 47). After the FHL transfer, a below-knee cast was applied in neutral position for 6 weeks. Ankle mobilisation with physiotherapy followed for another 6 weeks. Full weight bearing was allowed 10 weeks after the surgery. Patient's satisfaction, pain, return to everyday living, standing on toes, power of the plantiflexion, Thompson squeeze test, range of motion of the ankle joint, presence of calf hypotrophy, and hallux motion were assessed. Results: There was significant pain relief in all cases. Plantar flexion power was not significantly weaker compared to the healthy side. Calf circumference was smaller by 0,75 cm at average. Thompson squeeze test was negative in all cases. Tip-toes standing was found to be without difference between both sides. Active range of motion in the I. metatarsophalangeal joint was only by 5° smaller compared to the non-injured side. There were no complications and no rerupture. Conclusions: This procedure is sufficient for the treatment of large neglected Achilles tendon defects without risk of significant complications.

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A POLYURETHANE PARTIAL MENISCAL IMPLANT FOR CHRONIC PAINFULL PARTIAL MENISCECTOMY: A 5 Y FOLLOW UP EVALUATION

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Purpose: Treatment of meniscal lesions is the most common surgical intervention performed by orthopaedic surgeons today. Favourable results have been reported in the short term after partial meniscectomy. However, the risk of osteoarthritis and irreversible damage occurring in the long term remains. Therefore, a novel, biodegradable, polyurethane scaffold was developed to fulfil an unmet clinical need in the treatment of patients with presenting with painful irreparable partial meniscal defects. Methods: Forty-three patients were consecutively treated for their partial meniscus defects with the scaffold technique (Actifit). These patients were prospectively clinically evaluated with a follow-up of 60 months. Magnetic resonance imaging (MRI) was used for morphologic analysis of the meniscal regeneration at 12, 24 and 60 months of follow-up. Results: The patients included in this study showed a significant gradual clinical improvement after implantation of the scaffold. No effect of the scaffold on the opposing cartilage was observed on MRI. In thirteen patients the treatment had failed (30.2%). Six patients were lost to follow-up (13.9%). Conclusion: At five years post implantation, clinical outcome data from this study support the use of the polyurethane scaffold for the treatment of irreparable, painful, partial meniscus defects. However, well-designed, large-scale, randomized controlled trials are mandatory to confirm the initial results and the reliability of this procedure.

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Abstract no.: 52951

MANAGEMENT OF ACUTE HIGH GRADE ACROMIOCLAVICULAR JOINT DISLOCATIONS BY ARTHROSCOPIC DOG BONE BUTTON AND FIBRETAPE – PRELIMINARY RESULTS

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Introduction: Multiple options are available for the treatment of high grade acute acromioclavicular joint (ACJ) dislocation with variable clinical outcomes and complications with the majority requiring implant removal. The Dog Bone Button (Arthrex, Naples, US), a pre-contoured washer-like button, and dual Fibretapes provides a flexible suspension construct along the coracoclavicular ligament axis to maintain the ACJ reduction, enable coracoclavicular ligament healing without a need for implant removal. Methodology: 16 patients (4 grade III, 2 grade IV and 10 grade V cases) with a minimum of six months follow up were assessed for clinical and radiographic outcomes. Results: The mean age was 42 +/- 11.85 years (range 22-59 years) with 13 males and 3 females. The mean interval from injury to surgery was 7.06 +/- 5.51 days (1-20 days). The mean duration of follow up was 36.25 +/- 15.02 weeks (range 24-80 weeks). The mean reduction of coracoclavicular distance was 10.51 +/- 2.13mm. At 24th week follow up, mean ASES and quick DASH scores were 80.23 (best score 100) and 15.24 +/- 10.98 (range 0 - 27.3). In one case, the button had slipped out of the coracoid process with loss of reduction. Another case had a clinically significant loss of reduction with terminal 100 flexion deficit. Conclusion: The preliminary results appear to be promising for Arthroscopic Dog Bone Button and Fibretape for acute high grade ACJ dislocations without a need for implant removal. However, a longer follow-up and a larger study sample are warranted to monitor the outcomes and complications.

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Time: 15:30 - 16:00

Room: Lounge

Abstract no.: 52999

ARTHROSCOPIC FIXATION OF TIBIAL EMINENCE FRACTURES USING SUTURE BRIDGE TECHNIQUE A CASE SERIES

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Tibial eminence avulsion fractures are rare injuries occurring mainly in adolescents and young adults. When necessary, regardless of patient age, anatomic reduction and stable internal fixation are mandatory for fracture healing and accurate restoration of normal knee biomechanics. Various arthroscopically assisted fixation methods with sutures, anchors, wires, or screws have been described but can be technically demanding, thus elongating operative times. The purpose of this article is to present a technical variation of arthroscopic suture fixation of anterior cruciate ligament avulsion fractures. We present a simple cost effective technique for Indian scenario. Key words: avulsion fracture, suture bridge, arthroscopic.

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**EARLY CLINICAL RESULTS OF MODIFIED TRIPLE-ROW
ARTHROSCOPIC ROTATOR CUFF REPAIR**

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Background: Arthroscopic rotator cuff repair (ARCR) with suture bridge (SB) technique is common treatment for complete rotator cuff tear. But, sometimes we have faced the retear after the surgery because of excessive tension. To prevent it, we've been performed modified triple row which we call anatomical suture-bridge(a-SB) that we insert the small anchor like 1.5mm Jugger knot (Zimmer-BIOMET TDM) or 2.3mm Gryphon BR (Johnson & Johnson TDM) to the edge of greater tuberosity before suture bridging. Objectives: We evaluated early clinical results of a-SB technique using retear rate. Methods: 46 shoulders which were treated with SB technique and 67 shoulders treated with a-SB technique were evaluated retrospectively. We compared the retear rate one year after the surgery. Retear was defined as MRI Sugaya classification type 4 and 5. Results: In SB group, 6 shoulders were Sugaya type 4 and 6 were type 5. Retear rate was 26%. In a-SB group, 3 shoulders were type 4 and none of type 5, so retear rate was 4.5%. Retear rate of a-SB group was lower than SB group. It was statistically significant ($p < 0.05$). Conclusion: a-SB technique can reduce retear rate of ARCR.d4.

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IDENTIFYING THE RISKY DRILLING HOLES IN CLAVICULAR FIXATION WITH A 3.5 MM LCP RECONSTRUCTION PLATE BY MEASURING THE DISTANCES FROM SCREW TIPS AND PLATE TO THE NEUROVASCULAR STRUCTURE USING SUPERIOR AND ANTEROINFERIOR PLATES: A CADAVERIC STUDY

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Objectives: To examine the position and the distances from the 'risky' screw holes in superior and anteroinferior clavicular plating to the associated neurovascular structure (NV). **Methods:** The clavicles of fifteen fresh frozen cadavers were dissected. A fracture line was created at the midpoint of each clavicle. A pre-contoured 6-hole 3.5 mm LCP reconstruction plate (Synthes) was applied at the superior surface of the clavicle. Screws through the screw holes that could potentially injure the NV were identified and the distances from the plate and screw tips to the NV in the supine and beach chair positions were measured. Anteroinferior plating was also assessed following the same steps. **Results:** The risky holes of both superior and anteroinferior plates were found to be the 1st and 2nd medial screw holes in both the supine and beach chair positions. In the superior plating, the average distance from the screw tip to the NV at the 2nd medial screw hole in the supine position was 8.17 ± 3.12 mm, which was statistically significantly closer than in the beach chair position, while in the supine position the 1st and 2nd medial screw holes had statistically significantly further distances with the anteroinferior plating. **Conclusion:** In both superior and anteroinferior plating, the risky screw holes were the first and second medial screw holes in both the supine position and the beach chair position. In supine position, the distances from the screws and plate to the NV were wider in anteroinferior plating but these distances were closer in superior plating.

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NEW TECHNIQUE OF ULNAR NERVE STABILISATION DURING ANTERIOR TRANSPOSITION FOR CUBITAL TUNNEL SYNDROME

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Introduction: Ulnar nerve instability after anterior subcutaneous transposition is an uncommon but serious complication. We report a new technique in which the released roof of the cubital tunnel is used as a ligamentofascial flap to prevent the ulnar nerve from returning to its original position during anterior subcutaneous transposition. Methods: In this operative technique, the roof of the cubital tunnel is formed by a ligamentofascial band comprising of the cubital tunnel retinaculum and the antebrachial fascia. This technique creates a non-compressive ligamentofascial sling by using the released band. This band is incised medially to create a flap (3 cm x 3 cm) that is tailored to wrap around the ulnar nerve and is then attached loosely to the fascia overlying the flexor pronator muscles. Patients are encouraged to resume elbow motion immediately. Twenty-eight elbows in 26 patients were assessed for primary chronic cubital tunnel syndrome without restriction of excursion or fixed deformity. Of the 28 elbows, 13 had no specific aetiology (idiopathic) and 15 showed ulnar nerve (sub)luxation. Results: The average follow-up was 3 years. The elbow condition was graded as excellent or good in 93% and as fair in only 7%. However, severely affected elbows showed little improvement in condition. None of the cases required secondary surgery or had postoperative ulnar nerve instability. Conclusion: Our new technique that provides a wide non-compressive sling prevents nerve instability without compression, tenting, and kinking of the nerve, or restraining nerve excursion during elbow motion. This technique is simple and offers quick rehabilitation.

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BIOMECHANICAL ANALYSIS OF ROTATOR CUFF WITH 3D MODELING

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Objective The purpose of this paper is to establish a finite element analysis model of rotator cuff, which can be used to simulate the rotator cuff injury and evaluate the biomechanical effect of rotator cuff surgery. **Methods** The main steps are as follows: Use DICOM CT images of a right shoulder of a Chinese to establish scapula, humerus and clavicle models; Combined with MRI images and anatomical knowledge, the rotator cuff is separated and modelled; The models are introduced into the finite element analysis software Abaqus6.12, and simulate the anatomical position of the shoulder in 30°internal rotation , 30°external rotation , 30°abduction, 30°adduction, 30°flexion and 30°extension. Obtain the rotator cuff muscle stress changes, compare them with the experimental results of the clinical body. **Results** When the shoulder is in 30°flexion, supraspinatus average stress is 52.2KPa, infraspinatus and teres minor average stress is 223KPa and subscapularis average stress is 90.4KPa. When the shoulder is in 30°extension, supraspinatus average stress is 105KPa, infraspinatus and teres minor average stress is 78.2KPa and subscapularis average stress is 55.7KPa. The results of biomechanical analysis of the rotator cuff model are similar to those of the cadaver experiment. **Conclusions** The rotator cuff model system can simulate the common activities of the shoulder joint and obtain the corresponding rotator cuff muscle stress, which can be used for the simulation of rotator cuff injury and surgery.

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A NOVEL METHOD OF TENDO-ACHILIS REPAIR

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Introduction; Rupture of the Achilles tendon is a considerable cause of morbidity with reduced function following injury. There is a little difference in outcome between the techniques of open and non-operative treatment using an early active rehabilitation program. Method; during the period from Jan 2012- till sept. 2018 , 32 Cases 18 Males,12 Females Age ranges 32Yr-68 Yrs, all are post-traumatic cases including iatrogenic. All had mini-invasive percutaneous repair using the tape used by the gynaecologist for cervix circulage. POP for four weeks, then physiotherapy. Result; all did well except one lady had wound dehiscence. We discuss this techniques and outcomes of repairs of the Achilles tendon.

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DOES THE PRESENCE OF A PARTIAL ROTATOR CUFF TEAR AFFECT FUNCTIONAL OUTCOME AFTER CAPSULAR RELEASE IN PATIENTS WITH A FROZEN SHOULDER?

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Frozen shoulders are common - some are idiopathic, while others are secondary to rotator cuff tears or trauma. We aim to determine if the presence of a partial rotator cuff tear in a frozen shoulder results in poorer functional outcome after capsular release. Prospectively collected data of patients with frozen shoulders who underwent arthroscopic capsular release between 2012 and 2016 was reviewed. There were 15 patients who had a partial rotator cuff tear (Tear group) and 62 patients who had no rotator cuff tear (Intact group). Functional scores were collected pre-operatively and at three, six and twelve months after surgery. There were no significant differences in preoperative demographics and function. Post-operatively, there were no significant differences at three months. At six months, patients in the Intact group had better internal rotation compared to the Tear group (Intact- 6.06 vs Tear - 3.59, $p=0.002$). At twelve months, patients in the Intact group had better internal rotation (Intact – 7.11 vs Tear – 4.61, $p=0.005$), lesser pain (Visual Analogue Score Intact – 1.91 vs Tear – 4.20, $p=0.019$) and better Constant Shoulder Score (CSS) (Intact – 67.9 vs Tear - 53.9, $p=0.023$) and better University of California Los Angeles Shoulder Score (Intact – 27.9 vs Tear – 23.3, $p=0.02$) and better CSS relative to the unaffected shoulder (Intact- 91.6% vs Tear – 63.6%, $p=0.008$). In conclusion, patients with an intact rotator cuff attain better functional outcome after capsular release compared to patients who have a concomitant partial rotator cuff tear.

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MINIMAL INVASIVE PLATE OSTEOSYNTHESIS OF HUMERAL SHAFT FRACTURES

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This study assesses clinical outcome and complications in patients with humeral shaft fractures treated by using Minimal Invasive Plate Osteosynthesis. Background: plate osteosynthesis of comminuted humeral fracture is a challenging operation. Minimally invasive plate osteosynthesis (MIPO) is an emerging procedure for the treatment of humeral shaft fractures. It preserves soft tissue and the periosteal circulation, which promotes fracture healing. Patients & Methods: Thirty patients with humeral shaft fracture were included in this study and they were treated with MIPO technique. The patients were admitted in the orthopaedic department during the period from March 2012 to April 2016 with follow up period 27 months (range 18-36 months). The 3rd degree open fractures, High velocity gunshot injuries, and Pathological fractures were excluded from the study. We recorded operative time, intraoperative radiation exposure, intraoperative blood loss, union time, postoperative complications, and shoulder and elbow functions. Shoulder function was assessed by UCLA scoring system, and elbow function was assessed by Mayo elbow performance index. Results: Primary union was achieved in 28 patients. Mean time to union was 15.3 weeks. Mean operation time was (80 min). Bone grafting was performed in two patients. There was one case of deep infection. There were two cases of postoperative radial nerve palsy. Functional outcome was satisfactory. Conclusions: MIPO technique achieves good results in simple and complex fractures of humeral shaft. Although MIPO potentially has the radiation hazard, it reduces the perioperative complications with a shortened operation time and minimal soft tissue dissection