

# | Free Paper Session VII: Trauma

## 7.1

### OUTCOMES OF SURGERY VERSUS NON-OPERATIVE TREATMENT FOR TYPE 3 ACJ INJURIES

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## 7.2

### APPLICATION OF SHOULDER ARTHROSCOPY IN SHOULDER PERIARTICULAR FRACTURE & TREATMENT OF FRACTURE COMPLICATION: A SINGLE CENTER EXPERIENCE

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**Introduction:** Shoulder arthroscopy technique is well established for various soft tissue conditions. It can be extended to treatment of shoulder periarticular fractures and fracture related complications with availability of the expertise.

**Methodology:** This is a retrospective review of all patients suffering from shoulder periarticular fractures and fracture-related complications between September 2017 and June 2018. 2 patients had fracture dislocation of the shoulder. 5 patients having fracture proximal humerus with fixation done before suffered from adhesive capsulitis due to implant impingement, cutout or avascular necrosis. All patients underwent standard shoulder arthroscopy. All acute fracture dislocations were fixed with arthroscopic all-inside anchors. Adjunct procedures for the complication cases included arthroscopic capsular release, adhesiolysis, cartilage fibrillation debridement, loose body removal before removal of implants. All the patients were subjected to neutral shoulder immobilizer protection and standard rehabilitation protocol. The total operative time, pre-operative and Post-operative range of movement, rotator cuff power, constant shoulder function score, VAS pain score and wound complications were evaluated.

**Results and Analysis:** The mean operative time was 140 minutes. The active range of movement of patients improved from 80° (forward flexion), 63° (abduction), 30° (external rotation), to 110°, 110°, 45° respectively at 2-month. Patients' VAS pain score decreased from a mean of 6 to 3. Mean constant shoulder function score was 86 at 3-month post-operation. None of the 7 patients developed infection/required additional operation.

**Discussion and Conclusion:** Arthroscopic technique is a good and minimally invasive method for treating both articular fracture and managing fracture complication.

## 7.3

### EFFECT OF GLENOID SIZE ON OUTCOMES OF REVERSE SHOULDER ARTHROPLASTY

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**Introduction:** In reverse shoulder arthroplasty, sufficient glenoid bone stock is needed to ensure adequate purchase of screws. It is reported that 41% of Hong Kong female have glenoid widths measuring < 25 mm. In such cases with small glenoid, only 3 or even fewer screws can be inserted during operation, when compared with the conventional 4 screws. The aim of the study is to explore if a smaller glenoid size with fewer screws inserted would affect the outcomes of reverse shoulder arthroplasty.

**Methodology:** Patients who underwent reverse shoulder arthroplasty from 4/2017 to 3/2018, and who have undergone a pre-operative computed tomography (CT), were recruited. Number of screws was counted, and glenoid size was measured on CT as the maximum anteroposterior width. Outcomes were assessed in terms of complication rates (infection, periprosthetic fracture, instability, glenoid loosening and need for revision surgery), American Shoulder and Elbow Surgeons score, pain visual analogue scale, and ranges of motion. Chi-square test was used to compare the results.

**Results and Analysis:** A total of 11 cases were reviewed. The mean glenoid size was 28.2mm with a standard deviation of 2.52mm. 4 screws were inserted in 4 cases, 3 screws in 6 cases and 2 screws in 1 case. There was no correlation between glenoid size or the number of screws, and the complication rates and outcomes.

**Discussion and Conclusion:** Although a small glenoid with fewer screws does not affect short-term functional outcomes and complication rates, continuous follow-up is needed to correlate with long term outcomes.

## 7.4

### THE STUDY OF GLENOID ANATOMY IN RELATION TO REVERSE SHOULDER ARTHROPLASTY IN THE SOUTHERN CHINESE POPULATION

**AMY Slocum, YC Siu, KK Ling, CM Ma**

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**Introduction:** This study aims to describe the glenoid anatomy in the Southern Chinese population.

**Methodology:** Plain CT-scans of the shoulder taken from 2012 to 2018 were analysed. The glenoid shape was classified into 'pear', 'elliptical' and 'inverted pear'. The axial configuration of the glenoid was classified into 'posterior-prominent', 'neutral' and 'anterior-prominent'. The maximum glenoid widths and heights were measured. The glenoid version was calculated using the trans-scapular axis as reference. Bone defect, if present, was quantified using the 'best fit circle' method. Data were analysed using the SPSS system.

**Results and Analysis:** 212 patients were included. 83.5% of glenoids were pear-shaped while 16.9% were elliptical. 94.8% of glenoids had posterior-prominent axial configurations while 5.2% had neutral axial configurations. None of the glenoids were inverted pear in shape or had anterior-prominent axial configuration. The mean maximum glenoid height was 32.75mm. The mean maximum glenoid width was 26.87mm. 57.5% of the glenoids were anteverted. The mean angle of version was 2.78 degrees anteversion. 4 glenoids had bone defects. There were statistically significant differences in the mean heights, widths and versions between genders.

**Discussion and Conclusion:** Similar to previous studies, majority of glenoids were pear-shaped. The mean maximum glenoid width in our study was within the range reported from prior studies, while the mean maximum glenoid height was smaller. The mean glenoid version in our study was more anteverted. The glenoid anatomy in the Southern Chinese population is unique and may have implications in implant design and surgical planning.

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## 7.5

### GLOBAL RECALL OF A RADIAL HEAD PROSTHESIS: CASE SERIES, LITERATURE REVIEW AND POSSIBLE CAUSES

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**Introduction:** In December 2016, there was a class II medical device recall by US FDA about a radial head prosthesis due to loosening at the stem-bone interface. This prosthesis had been used in our locality but the exact causes were still unknown. We reviewed the clinical courses, radiological progression of this system, and analyzed potential reasons of early loosening.

**Methodology:** Total 4 cases were performed in our centre from 2015-2016 and all were included. We studied the demographics, postoperative functional performance and radiological changes.

**Results and Analysis:** All 4 cases showed X-ray features of loosening between 3-11 months. Progressive radiolucency was present around stem region together with cortical thinning. Patients were followed up for 24-35 months, all have satisfactory elbow function and good range of movement. None of them have elbow instability, and none were revised.

**Discussion and Conclusion:** Articulation related to radial head is complex and difficult to reproduce. Features that simulate normal radial head anatomy like anatomical radial head, offset with radial shaft, and radial head tilt are absent in this system. Failure to reproduce normal biomechanics lead to stress concentration at bone-implant interface and affect bone ingrowth. Resultant incongruency may produce excessive stress, wear and eccentric loading that lead to early loosening. However, loosen stem in a previously press-fit design can accommodate certain degree of stress incongruency and provide valgus stability and radial length. This may explain the painless loosening in all our patients.

## 7.6

### RETROSPECTIVE REVIEW ON OUTCOMES OF ACUTE ANKLE FRACTURE: THE ROLE OF ARTHROSCOPIC - ASSISTED FIXATION & ADJUNCT PROCEDURES

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**Introduction:** Ankle fracture is a common orthopaedic injury and unstable fracture is generally treated with open reduction and internal fixation. However, the clinical outcome is often unsatisfactory despite anatomical reduction achieved. There is increasing evidence showed concomitant chondral lesions and soft tissue injuries were associated with worse clinical outcomes. With the advance in arthroscopic surgery, the intraarticular pathologies can be readily addressed simultaneously with fracture fixation.

**Methodology:** A retrospective review of acute ankle fracture with operative treatment from 5/2017 to 5/2018 in our unit was carried out to evaluate the prevalence of soft tissue injuries and clinical outcomes in these patients.

**Results and Analysis:** There were 28 cases treated with open reduction and fixation (ORIF) and 12 cases treated by arthroscopic – assisted (ARIF) mean. Danis- Weber type B fracture was the most common fracture type in both ORIF (67%) and ARIF (64%) groups. For concomitant injuries, syndesmosis instability was reported in 25% Vs 28.6% in ARIF and ORIF respectively. Ligament injuries were reported in 58.3% ARIF cases but only 7% in ORIF group. Osteochondral lesions were found in 6/12 ARIF cases but none in ORIF cases. Adjunct procedures including 3 ligament repair, 1 chondroplasty and 2 loose bodies removal were performed with ARIF. The mean operation time was  $132.5 \pm 37.4$  minutes in ARIF and  $100.9 \pm 46.8$  min in ORIF. There were overall better functional outcomes regarding to mobility, range of movement and postoperative pain in ARIF group.

**Discussion and Conclusion:** In conclusion, concomitant injuries are not uncommon in acute ankle fracture and arthroscopic-assisted surgery provides a useful and feasible mean to manage both ankle fracture and soft tissue injuries in the same operation.

## 7.7

### FUNCTIONAL OUTCOMES OF KNEE LIGAMENTOUS INJURIES POST TIBIAL SHAFT FRACTURES

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**Introduction:** Tibial shaft fractures are associated with knee ligament injuries. ACL is commonly injured in our series. There are little literatures on functional outcome in these group of patients.

**Methodology:** Patients who sustained tibial shaft fractures on follow up were reviewed, from June 2015 to March 2017, retrospectively. Demographic data were collected. Physical examinations of the knee were performed with contralateral normal knee as control. Patient-reported functional outcomes were obtained using KOOS scoring. Statistical analysis was performed.

**Results and Analysis:** Fifty-five patients sustained tibial shaft fractures were examined. There were 27.3% of patients sustained ACL injuries. Activity of daily living (ADL) were significantly affected in patients with ACL ( $p = 0.006$ ) and LCL ( $p = 0.024$ ) injuries. Patients with MCL injuries had significantly lower score for Sports section ( $p = 0.017$ ). However, Quality of Life (QOL) was not affected significantly in all types of ligament injuries.

**Discussion and Conclusion:** Young male motorcyclists were most prevalent (<20 years old). ACL injuries was higher compared to other series most likely due to mechanism of injury. ACL and LCL injuries had poorer ADL. MCL injuries affect the sports participation. Conclusion: ACL injuries are common in tibial shaft fractures and affected ADL significantly.

## 7.8

### ARTHROSCOPIC ASSISTED TIBIA PLATEAU FRACTURE FIXATION: EXPERIENCE OF A REGIONAL HOSPITAL

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**Introduction:** Fixation of tibial plateau fracture can be challenging. Traditionally it is fixed with open reduction and internal fixation. Arthroscopic-assisted fixation allows for a less invasive approach of fracture management when compared to traditional open approach. We would like to share our experience of arthroscopic-assisted fixation of tibial plateau and pir innovative PCL jig technique.

**Methodology:** This is a retrospective study of 8 patients with tibial plateau fracture (Schatzker II-V) treated with arthroscopic assistance (diagnostic +/- additional procedures) in Alice Ho Miu Ling Nethersole Hospital (AHNH) between November 2015 to February 2018. Outcome was evaluated by radiological images, active range of motion (AROM), Lysholm score, VAS pain score, and any complications. Plate fixation was performed in 6 patients. Screw fixation with transosseous suture was done in 1 patient (Ogden IIIA avulsion fracture). Screw fixation was done in 1 patient (Schatzker Type III). 6 patients received additional arthroscopic procedures such as meniscus repair and bone fragment/ free cartilage removal. 5 patients required tricalcium phosphate bone substitutes. Innovative PCL jig technique was used in 2 patients with posterolateral involvement (Schatzker type III and V respectively).

**Results and Analysis:** Fractures healed well at a mean of 10.1 weeks with no complication except one patient developed collapsed medial column at 2-month follow-up. Mean AROM was  $109^\circ$ ,  $123^\circ$ , and  $130^\circ$  at 3-month, 6-month, 12-month postoperatively. Mean Lysholm scores was 92. Mean VAS score was 4, 3, 2 at 3-month, 6-month, 12-month postoperatively.

**Discussion and Conclusion:** Arthroscopic technique can yield favorable outcome in tibial plateau fracture (Schatzker II-V). PCL jig is a good adjunct for accurate and MIS fixation for both simple and complex postero-lateral tibial plateau fracture.

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## 7.9

### THE "INVISIBLE" WIRING TECHNIQUE WITH DISPLACED PATELLA FRACTURE

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**Introduction:** Operative treatment of displaced patella fracture dates back to Lister in 1877. Nowadays, steel wires remain the material of choice in tension-band technique despite complications like wire breakage, suboptimal placement or skin impingement. We propose using a high tensile strength braided tape-shaped Polyblend suture as an alternative that could minimize complications related to steel wires

**Methodology:** Between February 2014 and April 2018, fifteen patients with displaced patella fractures (three distal-pole; five transverse; seven comminuted fractures) underwent our proposed method. Open fracture reduction was performed to optimize anatomy before figure-of-eight fixation with FiberTape® (Arthrex). Nine patients also required Ethibond-2 cerclage for added stability. Post-operatively, an extension brace was given for wound resting, before progressing to mobilization exercises with a hinge-knee brace. At follow-ups, the knee's range-of-motion (ROM) and bone-healing status from radiographs were assessed.

**Results and Analysis:** The mean operation time was 84.5 minutes, and all surgeries were performed or supervised by the same senior surgeon. Eight patients were discharged from follow-up (mean follow up of 9.9 months) after achieving good ROM and fracture healing. One patient defaulted, and the remaining is still being followed up. There was no wound complication or knot impingement in all cases. One patient required MUA due to stiffness, and one experienced malunion due to poor compliance to rehabilitation protocol.

**Discussion and Conclusion:** Fixation using a high tensile strength braided suture may be an equally effective method in management of displaced patella fracture. However, larger sample size is useful to provide a definitive conclusion.

## 7.10

### ARTHROSCOPIC - ASSISTED PERCUTANEOUS WIRE FIXATION OF COMMINUTED PATELLAR FRACTURE

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**Introduction:** Patellar fracture represents about 1% of all fracture. Open reduction and internal fixation is the standard treatment for fracture with significant displacement, disrupted articular congruity or extensor mechanism. Severely comminuted fracture is sometimes treated with partial or total patellectomy and it is often associated with poor functional outcome. Moreover, wound complications and pain associated with open surgery, as well as joint stiffness due to delayed rehabilitation remain a clinical challenge especially in elderly with multiple comorbidities. Minimally invasive technique may be an alternative option in these patients.

**Methodology:** A case series with arthroscopic-assisted percutaneous osteosynthesis of comminuted patellar fracture was described. There were three patients (mean age 75.3 years) with fracture gap > 5mm included. All were treated with close reduction and fixation using figure-of-eight and cerclage wiring technique percutaneously. One patient with peripheral vascular disease was operated without tourniquet use. The quality of reduction and articular congruity were assessed by fluoroscopy and arthroscopy. Wound and fracture healing, range of movement and mobility level were reviewed.

**Results and Analysis:** All wounds and fracture were healed with no major complications (mean follow up 17.7 weeks). One patient reported mild implant irritation around scar site with mild knee pain. All implants were remained in situ with no loosening or breakage. All patients were able to walk independently with frame and the knee flexion range was 90-110 degrees.

**Discussion and Conclusion:** With the aids of arthroscopic and fluoroscopic modalities, percutaneous wire fixation of comminuted patellar fracture is safe and reliable treatment with promising functional outcome.

## 7.11

### COMPARING THREE DIFFERENT TECHNIQUES OF PATELLA FRACTURE FIXATION AND THEIR COMPLICATIONS

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**Introduction:** Patella fractures managed by fixation with metal implants often cause impingement and necessitate implant removal. Alternatively, we have adopted suture- and hybrid-fixation in the routine management of patella fractures at our trauma center. Here, we review their complications and outcomes as compared to traditional metal fixation techniques.

**Methodology:** Following appropriate exclusions, we identified 87 patients that underwent fracture fixation for patella fractures from 2014 – 2016 with a minimum of 6-months follow-up. Patients received either 1) suture fixation (fiberwire transosseous sutures and fiberwire anterior figure-of-eight tension band), 2) hybrid fixation (fiberwire transosseous sutures and metal figure-of-eight tension band), or 3) metal fixation. Outcome measures included the occurrence of any surgical complications (fixation failure, non-union, reoperations, infection), radiological complications (patella baja), implant-related complications (impingement, removal, breakage) and function (return to pre-morbid walking status, range of motion).

**Results and Analysis:** Suture fixation resulted in significantly less implant impingement (1/13, 7.7%) as compared to metal fixation (29/57, 50.8%;  $P < 0.01$ ). However, hybrid fixation resulted in similar rates of impingement (35.3%) and implant removal (41.2%) as compared to metal fixation. There was a significant increase in patella baja (13/17, 76.5%) and corresponding decrease in Insall-Salvati ratio (0.742; 0.682 – 0.802) for hybrid fixation as compared to the other two fixation methods ( $P < 0.05$ ). Incidence of fixation failure, non-union, and return to pre-morbid function was similar between groups.

**Discussion and Conclusion:** Suture fixation was favourable to metal fixation in select fracture configurations and avoids implant-related impingement. Hybrid fixation negates the advantages of pure suture fixation in having similar rates of impingement, and lowers the patella height.

## 7.12

### REIGNITING THE HEALING PROCESS IN ATYPICAL FEMORAL FRACTURES – THE UNIVERSITY HOSPITAL SOUTHAMPTON EXPERIENCE

**CJ Mitchell**

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**Introduction:** Atypical femoral fractures (AFF) can occur in osteoporosis patients receiving prolonged bisphosphonate therapy for prevention of fragility fractures. Postulated causes are microfractures and remodelling inhibition. AFF fixation is frequently associated with delayed union. We assessed the impact of drilling of AFF sites at the time of surgical fixation as a means of promoting fracture union.

**Methodology:** Patients presenting with AFF in our unit are routinely treated with intramedullary fixation. At the time of surgery the fracture site was percutaneously drilled under image intensifier guidance using a cooled, low-speed 2.5mm drill. Patients were regularly reviewed in outpatient clinic until plain radiographs confirmed radiographic union. Incidence of re-operation was documented.

**Results and Analysis:** 14 patients with a total of 16 fractures were identified from 2012-2017. Of these, radiographic union was available for 15 with a mean time of 162 days. One fracture was excluded as an outlier at 425 days to union. Mean time to radiographic union was 130 days for four patients treated with cold drilling and 176 days for ten patients treated without cold drilling. This compares favourably with published time to union for lower limb AFFs of 8.5 months (258 days).

**Discussion and Conclusion:** Our method is cost-effective, minimally-invasive and carries lower morbidity than osteotomy or hybrid fixation methods proposed for AFFs. Further investigation is warranted with a larger patient cohort and investigation of cellular changes associated with cold drilling.

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## 7.13

### EARLY RESULT OF COMPUTERIZED NAVIGATED SCREW FIXATION IN TREATMENT OF FRAGILITY PELVIC FRACTURE IN ELDERLY

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**Introduction:** Minimal invasive fixation of stable fragility pelvic fracture is becoming feasible with advancement of computerized navigation. However, the clinical outcomes compared with conservative care were seldom mentioned.

**Methodology:** This is a retrospective study comparing the clinical outcomes of fragility pelvic fracture treated conservatively or operatively using computerized navigation. Outcome parameters included pain score, analgesics requirement, length of hospital stay and complication(s).

**Results and Analysis:** Navigated screw fixation was performed in 12 patients from September 2017 to March 2018. A retrospective cohort of 42 patients who were treated conservatively was recruited. It showed a statistically significant reduction in analgesics consumption in the operative group at 1 week's (53.64 % vs 3.76%,  $p = 0.049$ ) and 4 weeks' time (75.30% vs 33.63%,  $p = 0.011$ ). The mean VAS score also showed significant improvement in 1 week's time (4.92 vs 6.55,  $p$  value = 0.004), 4 weeks' time (2.67 vs 5.12,  $p$  value = 0.000) and 3 months' time (1.17 vs 2.79,  $p$  value = 0.000) in the operative group. They were also beneficial from earlier return to pre-morbid walking status (24.17 days vs 53.03 days,  $p$  value = 0.002). However, there is no significant difference in the mean length of hospital stay. No surgical complication was noted.

**Discussion and Conclusion:** We are amongst the first to do the comparison on the clinical outcomes. Computerized navigation in treatment of pelvic fragility fracture can achieve better pain control, reduction in analgesics consumption and earlier return to pre-morbid walking status.

## 7.14

### THE APPLICATION OF EVIDENCE-BASED BUNDLE APPROACH TO REDUCE SURGICAL SITE INFECTION IN GERIATRIC HIP FRACTURE PATIENTS - A SINGLE CENTRE EXPERIENCE

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**Introduction:** Surgical Site Infection (SSI) is associated with increased morbidity & mortality, prolongation on length of hospital stay and cost of community healthcare. In 2010 and 2012, our centre experienced an unexpectedly high rate of SSI in geriatric hip fracture patients with hemiarthroplasty done. A multifaceted intervention program – "bundle approach" consisting of pre-operative microbiological screening, perioperative measures and post-operative wound care was implemented.

**Methodology:** Pre-operative MRSA screening was implemented. Intravenous vancomycin was given as prophylactic antibiotic of choice in those patients with positive MRSA screening. All patients will be bathed with chlorhexidine lotion 1 day before operation or on the day of operation. Standardized protocol of surgical site disinfection was implemented: a stringent first stage povidine iodine disinfection, second stage water-proof extremity draping and sterile plastic sheet wrapping of non-surgical region, third stage ChlorPrep and followed by circumferential iodophor impregnated plastic adhesive drape ('loban') covering the hip and thigh region. The surgical wound was dressed with Aquacel Adhesive tape after wound closure.

**Results and Analysis:** The total numbers of infected cases were 17 from 2008 to 2012 and 9 from 2013 to 2018(1st quarter). The rates of infection were 7.02% from 2008 to 2012 and 3.31% from 2013 to 2018(1st quarter). There was a statistically significant reduction in the number of infected cases of hemiarthroplasty after the implementation of bundle approach. ( $p = 0.0430$ )

**Discussion and Conclusion:** The bundle approach showed to achieve an effective and sustained decrease in SSI for the geriatric hip fracture patients.

## 7.15

### VIRTUAL ORTHO-GERIATRIC WARD IN A REGIONAL HOSPITAL – A REVIEW OF PHASE I

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**Introduction:** Geriatric hip fracture has a growing impact on the health care system and society with the aging population worldwide. Early ortho-geriatric involvement and early surgery for medically fit patients are the standards of care in managing fragility fracture as mentioned in blue book. A virtual ortho-geriatric ward was established in 2018 in Kwong Wah Hospital to provide a one-stop electronic platform for the cross-specialty pre-operative assessment and optimization by Geriatricians and Anesthetists. This study aims to evaluate the phase I of this implementation.

**Methodology:** A total of 138 patients (68 patients from January to March 2017; 70 patients from January to March 2018) were included in the review of phase I. The cancellation rate by anesthetist for medical optimization and the Key Performance Index of hip fracture surgery (operation within 2 days from admission) were compared.

**Results and Analysis:** Comparing the three-months result between 2017 and 2018, the cancellation rate by anesthetist dropped from 20.6% to 12.9%. The Key Performance Index of hip fracture surgery improved from 37.3% to 51.4%.

**Discussion and Conclusion:** The virtual ortho-geriatric ward serves as a one-stop electronic platform to streamline the workflow of same day preoperative optimization. The early outcomes of fracture hip patients are satisfactory. Further implementation and long term follow up are needed to evaluate its clinical use.

## 7.16

### THE USE OF TERIPARATIDE IN OSTEOPOROTIC FRACTURES, ESPECIALLY IN CASES WITH COMPLICATIONS AFTER PROLONGED USE OF ANTI-RESORPTIVE AGENTS – A RETROSPECTIVE REVIEW

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**Introduction:** Anti-resorptive agents are the first-line treatment of osteoporosis, especially in secondary prevention after osteoporotic fracture. However, they are associated with some rare but serious complications, including jaw osteonecrosis and atypical femur fractures. Teriparatide, which promote bone formation, has been introduced as an alternative, particularly in cases refractory to anti-resorptive treatment, or cases with complications due to prolonged use of anti-resorptive agents. This study is to review the use of teriparatide in a local hospital over past 4 years.

**Methodology:** Cases who received teriparatide from a local hospital from 2014 to 2018 were reviewed. Treatment duration, previous fractures, previous anti-resorptive agents, presence of atypical fractures and corresponding treatment, reasons for teriparatide, effects of teriparatide on healing of atypical fractures were reviewed

**Results and Analysis:** 65 patients had received teriparatide. 71% had previous fractures. 79% had previously received anti-resorptive agents. Teriparatide was used in 36% due to severe osteoporosis, 43% due to unresponsive to anti-resorptive agents, 21% due to complications with anti-resorptive agents. 6 patients (8 femurs) had atypical femur fractures. 3 atypical fractures were early with visible crack but not displaced, and the crack disappeared after teriparatide without any other treatments. 5 atypical fractures were complete and displaced. All had delayed union after initial operation, with up to 4 operations received in one patient. After teriparatide, all atypical fractures healed.

**Discussion and Conclusion:** Teriparatide is getting more popular in cases that anti-resorptive agents are either ineffective or contraindicated. Particularly for atypical femur fractures which are notorious for non-union, teriparatide was shown to promote healing.

### **SARCOPENIA AND OSTEOPOROSIS IN CHINESE GERIATRIC HIP FRACTURE PATIENTS: PREVALENCE AND CORRELATION WITH DIFFERENT FACTORS AND FUNCTIONAL OUTCOME**

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**Introduction:** Sarcopenia and osteoporosis were prevalent among geriatric patients. Osteoporosis put them at high risk of hip fractures after fall, while sarcopenia might hamper their rehabilitation. The purpose of this study was to determine the prevalence of sarcopenia in Chinese geriatric hip fracture patients and to look for any association between sarcopenia and various patient factors, as well as the functional outcome after rehabilitation.

**Methodology:** In this retrospective observational study, data of 81 geriatric hip fracture patients admitted to Queen Elizabeth Hospital were studied. We measured relative appendicular skeletal muscle mass index (RASM) and T-scores with DEXA, pre-morbid and end-of-rehabilitation functional status with the Barthel index (BI).

**Results and Analysis:** Sarcopenia prevalence was higher in geriatric hip fracture patients than in community dwellers. RASM was positively correlated with body weight, BMI, T-scores and BI with statistical significance. RASM was also negatively correlated with length of stay in our locality, however, with no statistical significance. Length of stay was positively correlated with BI with statistical significance. CTI had shown no correlation with T-score.

**Discussion and Conclusion:** Geriatric hip fracture patients with risks factor such as low body weight and low BMI may benefit from early diagnosis and treatment of sarcopenia in order not to hamper their post-operative rehabilitation. Length of stay and functional outcome after rehabilitation appeared less affected by sarcopenic status, but more by other factors such as co-morbidities and carer availability.