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Poster Presentation | Day 1  
December 05, 2022

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## *Orthopedics 2022*



3<sup>rd</sup> International Conference on

# ORTHOPEDICS

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## Fracture neck of femur patients: Barriers to treatment of osteoporosis in the very elderly

Jay Chillala, R Noble and A Ahmed

Manchester University NHS FT, UK

**Statement of the Problem:** The risk of refracture after a fracture is very high with the fracture risk approximately doubled. Patients who sustain a hip fracture should be considered for bone health treatment at an early stage and ideally treated pre-discharge. Waiting times for those patients not treated on the ward can be up to four months due to clinic appointments, difficulty obtaining blood tests and other factors, therefore, putting these patients at high risk of fracture and lower survival.

The purpose of our audit was to look at barriers in the orthogeriatric rehabilitation ward to treatment before discharge.

**Methods:** Data were analyzed from 128 patient records of patients admitted to the Elm Orthogeriatric unit in Trafford Hospital, Manchester after a fractured neck of femur operation and reasons for nontreatment.

**Findings:** Less than 50% of patients received osteoporosis treatment before discharge despite data showing that the majority of patients had already had a bone health treatment discussion. This included reasons such as awaiting bloods, lack of vitamin D loading, awaiting family discussion in patients with no capacity and dental review.

**Conclusion:** Certain reasons such as lack of vitamin D loading and blood investigations not being sent are easily correctable with a proforma and pathway in the absence of a fracture liaison service other factors such as dental review due to poor oral status will need further discussion and perhaps in-house investment.

### Recent publications

1. NOGG. National Osteoporosis Guideline Group UK. Clinical Guidelines for the prevention and treatment of osteoporosis 2021
2. Treatment of Osteoporosis after hip fracture is associated with lower all-cause mortality: A nationwide population study. Chih-Hsing Wu et al.
3. Management of osteoporosis in patients with hip fractures. A Rodgers et al. QJM: An International Journal of Medicine, Volume 93, Issue 8, August 2000, Pages 501–506

### Biography

Chillala has been involved in older people's research over several years with a lot of work involving falls, rehabilitation post-stroke and diabetes. Her current interest is orthogeriatric and bone health at Trafford Hospital.

e: Jay.Chillala@mft.nhs.uk

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# Accepted Abstracts

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## Systematic review on management and outcomes following proximal tibial peri-articular fracture-related infections

Shanmuganathan K<sup>1</sup>, Mahmoud A<sup>1</sup>, Hasan R<sup>2</sup>, Vris A<sup>2</sup>, Heidari N<sup>2</sup>, Bates P<sup>3</sup> and Iliadis AD<sup>2</sup><sup>1</sup>Centre for Neuroscience, Surgery and Trauma, UK<sup>2</sup>Limb Reconstruction and Bone Infection Service, UK<sup>3</sup>Trauma & Orthopaedics Department, UK

**Background:** Tibial plateau fracture related infection (FRI) is a common but dreaded complication following surgical management. The diagnosis and management of this condition poses a challenge to clinicians. To date, all systematic reviews on this topic evaluate the incidence and risk factors for tibial plateau FRIs.

**Objective:** This systematic review primarily aims to evaluate the current literature on the management strategies employed to eradicate tibial plateau FRIs and report on their outcomes. Furthermore, it aims to report variations in diagnosis and management of this complication.

**Methods:** A search was performed on Medline, Embase and Cochrane Library Central Register for Controlled trials using terms synonymous with tibial plateau, infection and fracture. Studies were reviewed for eligibility against a pre-defined inclusion and exclusion criteria. The quality of included studies was assessed using the Coleman Methodology Score (CMS). Data pertaining to study characteristics, diagnostic tool and management strategies was collected.

**Results:** A total of 13 studies met the inclusion and exclusion criteria. An additional study was identifying through snowballing of relevant literature. The average

CMS score was poor. Eleven studies had a level of evidence (LoE) of 3, whilst three had a LoE of 4. Of the 232 cases, 47 were superficial FRIs and 185 were deep FRIs. Most cases of superficial FRIs (94.8%) could be eradicated with antibiotics with or without debridement. Deep FRIs require a more aggressive approach, with antibiotic and debridement only eradicating 23.3% of infections. Deep FRIs are associated with an increased number of debridement procedures (mean 2.1) and additional procedures (mean 3.8). Eradication rates were 79.7%. Diagnostic strategies and functional outcomes were poorly reported across most studies. Non-union, bone loss and soft tissue coverage was associated with poor functional and clinical outcome scores.

**Conclusion:** Tibial plateau fracture-related infections are a challenge to diagnose and manage. The pathogenesis of superficial, deep, acute and chronic FRIs are varied, therefore different therapeutic approaches need to be taken to successfully eradicate each pathology. Further studies with homogenous definitions and robust methodology are required to better evaluate the management strategies of this condition.

e: [kanatheepan@doctors.org.uk](mailto:kanatheepan@doctors.org.uk)

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## Practical application of augmented/mixed in surgery of abdominal cancer patients

Mikhail Korzhuk<sup>1</sup>, Grebenkov VG<sup>1</sup>, Rumyantsev VN<sup>1</sup>, Gheleznyak IS<sup>1</sup>, Surov DA<sup>1</sup>, Koskin VS<sup>1</sup>, Ivanov VM<sup>2</sup>,  
Krivtsov AM<sup>2</sup>, Strelkov SV<sup>2</sup>, Smirnov Ayu<sup>2</sup> and Shipov Ryu

<sup>1</sup>SM Kirov Military Medical Academy, Russia

<sup>2</sup>Peter the Great technical University, Russia

Advanced abdominal and pelvic cancer remains a complex oncological problem. Recurrence rate is high. The key to successful and safe surgical procedures (SP) is careful planning and intraoperative navigation (ION), including augmented/mixed reality (AR/MR). Medical use of AR/MR changed from a training tool [2–5], to the instrument that is used before and during SP. The benefit provided AR/MR at preoperative planning and ION is extremely in demand for SP of cancer patients. Study of results of AR/MR applying is relevant.

**Methodology & Theoretical Orientation:** Clinical part consists 8 patients. Seven suffered from recurrent malignancies in the abdomen and pelvis. The technical part includes AR/MR hardware/software complex: PC, Microsoft Hololens-2 glasses, positioning markers (PM) and software set: 3D-Slicer for DICOM data analysis and segmentation, two custom software. The first one served for creating 3D-models with PM and uploading 3D-models to the glasses. The second allowed to superimpose the 3D-model and patient [13].

**Findings:** Using AR/MR we performed SP (7 cases). One patient not operated due cancer generalization. We used invasive bone pin PM (3 times), non-invasive skin magnetic PM (4) (Fig 2.) SPs' durations were 90-390 minutes. All SPs achieved their goals. No major complications encountered. The most demonstrative patient had cancer invasion to the sacrum and coccyx (Fig. 3). He needed two PMs (Fig 2a) according abdominal stage (Fig 4a) and sacral resection stage (Fig 4b). For operated patients AR/VR allowed to verify the radicalism of SPs, to improve ION close the zone-of-interest, to reduce SPs' duration, thereby reducing the complication rate and improving the rehabilitation period. We plan to discuss a range of difficulties we encountered and resolving measures later.

**Conclusion & Significance:** We considered the use of AR/MR as a perspective method of preoperative planning and ION in abdominal cancer patients.

e: gensurg@mail.ru

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## Arthroscopy-assisted reduction and internal fixation for tibial plateau fractures

**Po Hua Huang**

Chang Gung Memorial Hospital, China

The goal of surgical treatment for tibial plateau fracture is to reconstruct the articular surfaces, to obtain a stable fixation for early motion and repair all concomitant lesions. With the assistance of arthroscopy, the articular surface can be readily seen and the intra-articular structures can be thoroughly examined while the fragments are fixated with minimal soft tissue dissection. The purpose of this study was to evaluate the functional and radiographic results and the complications of arthroscopically assisted reduction for tibial plateau fractures. Forty-three patients were treated with arthroscopically assisted reduction for tibial plateau fracture, with an average follow-up period of 2 years from 2014 to 2017. Evaluations were performed clinically and radiologically with modified Rasmussen's criteria.

According to the Schatzker classification, the fractures types were as follows: type I, 1 (2%); type II, 9 (21%); type III, 7 (16%); type IV, 7 (16%); type V, 14 (33%); and type VI, 6 (14%). The mean age at operation was 46.7 years (range,

17 to 66 years). Thirty-one of 43 patients (72.1%) in our series had associated intra-articular lesions. The mean postoperative Rasmussen clinical score was 28.1 (range, 18 to 30) and the mean radiologic score was 16.0 (range, 11 to 17). Good or excellent clinical and radiologic results were achieved in 93% of patients. Secondary osteoarthritis was noted in 5 injured knees (11.6%). All 43 fractures were successfully united. No complications directly associated with arthroscopy were noted.

With the assistance of arthroscopy, the advantages included direct visualization of intra-articular fractures, accurate fracture reduction, reduced morbidity in comparison to arthrotomy, simplified diagnosis and treatment of meniscal and ligamentous injuries and thorough joint lavage and removal of loose fragments. Arthroscopic surgery for tibial plateau fractures is a safe, reproducible and effective procedure that provides precise diagnosis and effective treatment.

e: 881106@cgmh.org.tw