

fragment is suitable. We also propose an algorithm for management of this lesion.

AP35. Pattern of associated soft tissue and carpal bone injury with distal radius fracture

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Background: Soft tissue and bony injuries are known to be associated with distal radius fractures. There are three intracarpal soft tissues of particular importance: the triangular fibrocartilage complex (TFCC), the scapholunate interosseous ligament (SLIL), and the lunotriquetral interosseous ligament (LTIL). Bony injuries mainly include carpal bone injury. The purpose of this study was to evaluate the spectrum and analyse the pattern of associated soft tissue, intrinsic/extrinsic ligaments and carpal bone injury with distal radius fracture

Methods: This prospective study included 18 patients (12 males and 7 females) with mean age of 34.2 (range 18 to 70 years) who sustained fracture of distal end of radius and reported to our hospital. These patients were evaluated using X ray, MRI and Arthroscopy. We evaluated the spectrum and analysed the pattern of associated soft tissue and carpal bone injury with distal radius fracture.

Results: Of the 18 distal radius fracture, isolated TFCC injury was present in 8 cases, SLIL tear in 2 cases and extensor carpi ulnaris tear in 2 cases. Two patients were having TFCC tear along with DRUJ instability. Two patients had TFCC tear as well as ulnar styloid fracture. Only two patients were negative for any kind of associated wrist injury.

Conclusion: Because associated wrist injuries are complicated in distal radius fracture at a relatively high frequency, assessment of associated injury using MRI or arthroscopy is beneficial. Associated wrist injury may result in residual wrist pain, decreased grip strength and a restriction of wrist range of motion. So TFCC tear and intracarpal ligament injury should be addressed at the time of primary fracture fixation.

AP36. Total hip replacement (THR) in non union of subtrochanteric fractures of the femur using distal fitting uncemented long stem

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Background: Management of resistant non union of subtrochanteric fracture of the femur is challenging. Deformity, poor vascularity from previous hardware, and high stresses in the subtrochanteric region all pose challenges to achieve successful bony union with reoperation. We describe our experience in management of 3 such cases with nonunion of subtrochanteric fracture of femur by THR. Good distal scratch fit of the implant gives rotational and angular stability to the fracture.

Material and methods: 3 patients with non union of subtrochanteric fracture were operated by THR and followed up for 2.5 years. The mean age of our patients was 63 years. There were 2 females and 1 male. In the entire patients fracture site was opened and cleared of fibrous tissue. Previous implant was removed and tissues were sent for culture and histopathological examination to

rule out infection. Thereafter uncemented THR was done through posterior approach using distal fitting uncemented long stem.

Results: All the patients had uneventful post operative period. Stitch removal was done after 15 days. Patients started ambulating with the help of a walker with toe touch from 2nd post operative day. All the patients had successful outcome. All patients could walk independently without any support at 3 months. Harris hip score at 2.5 years was 80.5, 81.2 and 82.4 which is considered as a good outcome.

Conclusion: THR is a good option in cases of non union of subtrochanteric fractures because it allows early ambulation and pain relief to the patient.

AP37. Study of the clinical and radiological morphology of pectoralis minor in subjects with shoulder impingement syndrome

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Purpose: Shoulder Impingement syndrome (SIS) is a common shoulder problem affecting younger age group patients. Pectoralis minor contracture has been implicated as cause of SICK scapula leading to impingement problem¹ by decreasing scapular posterior tilt². Only validated in cadaveric studies otherwise³, the aim of the current study was to document the morphologic changes in the pectoralis minor muscle in patients with impingement syndrome.

Methods: Twenty subjects with unilateral shoulder impingement (43.2 ± 9 years, 9 males) and 10 healthy volunteers (39.9 ± 5.5 years, 5 males) were recruited in the study. Sagittal, axial and coronal, T1-weighted MRI spin-echo and fat saturated inversion recovery sequences of chest wall was performed on both the sides. Ultrasound estimation of pectoralis morphology and girth were also made. Clinical assessments of scapular dyskinesis, length of pectoralis minor (distance from 4th rib to coracoid process) and posture (distance of acromion to bench in supine) were made. (Figure 2-5)

The morphological changes in the muscle and its girth were compared on across sides using paired t-tests and between groups using 2 sample t tests. Comparisons between clinical assessments and radiological measurements were made.

Results: All symptomatic subjects had scapular dyskinesis. As assessed by USG, the girth of pectoralis minor was significantly smaller on the affected side as compared to the healthy side in subjects with impingement ($p = 0.013$) but not in healthy subjects ($p = 0.56$). The length of the muscle assessed clinically was also shorter on the affected side in subjects with impingement ($p = 0.01$) but not in healthy subjects ($p = 0.8$).

In 6 out of the symptomatic subjects, USG revealed fibrous bands within the muscle. In 7 of the symptomatic patients, MRI revealed more hypointense signals suggesting fatty infiltration within the muscle.

Discussion and conclusions: The pectoralis minor showed shortness and atrophy on the affected side as compared to contralateral side and healthy controls. Additionally some subjects with impingement showed fibrous bands and fatty infiltration suggesting an altered morphology.

Clinicians should include rigorous stretching of the muscle to improve scapular kinematics.