SIMULTANEOUS UNILATERAL RADIAL SHAFT FRACTURE WITH DISTAL AND PROXIMAL RADIOULNAR JOINT DISLOCATION, AN EXTREMELY RARE CASE REPORT

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SIMULTANEOUS UNILATERAL RADIAL SHAFT FRACTURE WITH DISTAL AND PROXIMAL RADIOULNAR JOINT DISLOCATION, AN EXTREMELY RARE CASE REPORT (Abstract): Till now we know two fracture pattern in forearm fracture dislocation, Galeazzi fracture dislocation which is defined as fracture of radial shaft with distal radioulnar joint (DRUJ) dislocation and Monteggia fracture dislocation which is ulnar fracture with radial head dislocation. During this case report we present a case with simultaneous distal and proximal radioulnar dislocation and radial shaft fracture which is extremely rare fracture pattern and could be a new entity in forearm bones fracture dislocation. Keywords: RADIAL SHAFT FRACTURE, RADIAL HEAD, DISTAL RADIO ULNAR JOINT (DRUJ)

The fracture of radial shaft simultaneously with proximal and distal radioulnar joint dislocation in an extremely rare event in children and adults. This pattern doesn’t conform to Galeazzi, Monteggia and Essex-Lopresti fractures (1-3). We did not found any other similar cases during our search. During this case report we present a case with simultaneous distal and proximal radioulnar dislocation and radial shaft fracture.

CASE REPORT

A 52 years old man admitted in our emergency ward after a motor vehicle accident. The patient was motorcycle rider and had a crash with a car. There was sever pain and restriction in range of motion in both right wrist and elbow joint. Also patient had a severe pain and deformity in right forearm. Supination and pronation in elbow and wrist were absent. Also flexion and extension in both joint were painful.

In plain radiography a radial shaft fracture, anterolateral dislocation of radial head and dorsal dislocation of ulnar head with mild ulnar plus was apparent. No other fracture was determined (fig. 1).

Patient was transferred to operation room and open reduction with Dynamic compression plate was done, the elbow joint was checked with fluoroscopy which was reduced after radial shaft fixation. Then a long arm cast in neutral flexion of elbow and forearm supination was applied (fig. 2). A long arm cast was applied in supination of forearm and neutral position of elbow. The post-operative radiographies were acceptable. After four weeks the cast was removed and physiotherapy started. Radiographs were taken at 3rd, 6th and 12th weeks and then at 3 monthly intervals until 10 months.
The fracture was united and patient was able to 80° extensions and 75° flexion at wrist, 80° of supination and pronation at the forearm during 12th week visit.

Fig. 1. Pre-operative lateral (A) and Anteroposterior (B) x-rays. The dislocation of distal and proximal radioulnar joints (arrows) and the radial shaft fracture are apparent.

Fig. 2. Post-operative x-rays. Lateral (A) and anteroposterior (D) X-rays of distal radioulnar joint (DRUJ) and lateral (C) and anteroposterior (D) X-rays of elbow joint. The radial shaft is fixed with 3.5 DCP plate, distal and radioulnar joint are reduced.
Simultaneous unilateral radial shaft fracture with distal and proximal radioulnar joint dislocation, an extremely rare case report

DISCUSSION
During this case report we presented a patient with dislocated distal and proximal radioulnar joint simultaneously with radial shaft fracture. This pattern was not reported in any previous case reports. Distal radioulnar joint dislocation often is associated with unstable radial fracture which was firstly described by cooper in 1822 and named as Galeazzi fracture-dislocation after Ricardo Galeazzi’s presentation case series in 1934 (1). Also isolated radial head dislocation is associated with proximal ulnar fracture which was described by Giovanni Battista Monteggia, in 1814 (2). The Essex-Lopresti injury is characterized by a fracture of the radial head with concomitant disruption of the distal radioulnar joint (DRUJ) and rupture of the interosseous membrane (IOM) (3).

There are few case reports on simultaneous dislocation of proximal and distal radioulnar joint (4-9). In these cases, there are either pure dislocation of distal and proximal radioulnar joints (4, 6-9) or simultaneously with elbow dislocation or radial head fracture (5). But there is no report on proximal and distal radioulnar joint dislocation with radial shaft fracture (10-13). This case is the first report of such a fracture pattern.

It seems that hyper pronation is the causative force for the simultaneous dislocation of proximal and distal radioulnar joint. When the patient falls onto dorsiflexed wrist, pronated forearm and extended elbow, he might rotate the body over the affected limb which is fixed to ground. This rotation can cause much pronation that can disrupt triangular fibrocartilage complex and also varus force that cause disruption of annular ligament. But fracture of radial shaft during each stage of this process can interfere the described mechanism and prevent to dislocate the proximal or distal radioulnar joints. In our case the fracture of radial shaft was fixed with Dynamic Compression Plate. The radial and ulnar head were reduced after plating of radial shaft. A long arm cast was applied in supination of forearm and neutral position of elbow. The post-operative radiographies were acceptable and final outcomes was favorable during follow-ups.

REFERENCES

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**BIOLOGICS IN RHEUMATOLOGY: BRITISH GUIDE UPDATE**

On August 24th, in *Rheumatology*, the British Society for Rheumatology (BSR) and British Health Professionals in Rheumatology (BHPR) Standards, Guidelines and Audit Working Group published an updated guideline for prescribing biologics to the patients with axial spondyloarthritis (including Ankylosing Spondylitis). The group recommended the inclusion in biological therapy not only patients with Ankylosing Spondylitis meeting the modified New York criteria, but also those with non-radiographic disease, but only in cases with real evidence of inflammation on MRI or a raised C-reactive protein. Also, they advised the clinicians to switch from one TNF-inhibitor to another anytime during the treatment, reducing the time between BASDAI measurements to 4 weeks. Regarding the problem of choosing one TNF-inhibitor or another for axial spondyloarthritis, the studies the group reviewed did not demonstrate an important difference in terms of efficacy between infliximab, golimumab, etanercept, certolizumab and adalimumab. Response evaluation of the treatment in patients with TNF-inhibitors should be realised every 3 to 6 months, and the responsive ones must be reassessed every 6 months after. It is important to acknowledge that the non-responsive patients (those with no clinical response by 6 months or if the response is not maintained at two consecutive assessments) should be discontinued. The working group did not answered though to an important issue, if the anti-TNF therapy could prevent radiographic progression or not. (Hamilton L, Barkham N, Bhalla A et al. BSR and BHPR guideline for the treatment of axial spondyloarthritis (including ankylosing spondylitis) with biologics. *Rheumatology*. 2016 . doi:10.1093/rheumatology/kew223.233-6)

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