Bilateral anterior fracture dislocation of shoulder joint-
A rare presentation

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Abstract
Introduction- Bilateral anterior fracture dislocation of shoulder is a very rare injury. Bilateral anterior dislocation has been less commonly reported as compared to bilateral posterior dislocation of shoulder joint. We are reporting a rare case of bilateral anterior fracture dislocation of shoulder joint.

Case History- 34 year male presented with 10 days old injury to both shoulder following giddiness. He sustained two distinct impacts over the shoulder. Radiographs showed bilateral fracture dislocation of shoulder joint. Three part fracture on right side and two part fracture (Greater tuberosity) left side. He underwent open reduction and fixation for right shoulder and closed reduction followed by open fixation of greater tuberosity fracture.

Discussion- Bilateral anterior shoulder fracture dislocation is rarely reported as compared to posterior dislocation. These injuries are typically occurs with two separate impacts. Commonest mechanism of injury is trauma unlike posterior dislocation. These injuries need prompt reduction of joint and appropriate management of associated fracture for good post-operative outcome.

Conclusion/clinical message- Although rare bilateral anterior fracture dislocation needs urgent reduction followed by fixation of associated humerus fracture.

Keywords: Anterior dislocation, Fracture.
Fig 1: Radiograph showing bilateral fracture dislocation of shoulder joint

Fig 2: Post-operative clinical photograph.

Fig 3: Three part fracture on right side fixed with plate.

Fig 4: Greater tuberosity fracture on left side fixed with cancellous screw.

Sutures were removed on day 10. Active assisted abduction and external rotation was started after 2 weeks. Both the fractures united at 3 months. The abduction (90 degree) and external rotation (20 degree) were regained on right side. Left shoulder he regained almost complete range of motion without any evidence of recurrent anterior instability.

3. Discussion

Bilateral shoulder dislocation was first described in 1902 in patients in whom excessive muscular contractions occurred as a result of Camphor overdose. Posterior shoulder dislocations usually occur following unbalanced muscle contractions (electric shock, epileptic seizure etc) [3, 4]. The reason why the shoulder dislocates anteriorly after trauma is that as the arm extends and abducts impingement of the greater tuberosity on the acromion levers the humeral head out of the glenoid [1]. Moreover the rotator cuff pushes downwards the humeral head which is finally displaced anteriorly by the flexors and external rotators. The posterior dislocations are more common after seizure since the contraction of the relatively weak external rotators and the posterior fibres of the deltoid are overcome by the more powerful internal rotator. The succeeding adduction and internal rotation usually causes the humeral head to dislocate posteriorly [4]. One suggestion about bilateral anterior dislocation following a seizure is that this may occur not during the muscle contractions but from the trauma of the shoulders striking the floor, after the collapse [4]. Bilateral occurrence of anterior shoulder dislocation is rare because almost always one extremity takes the brunt of the impact during the traumatic episode [5, 6].

Dinopoulos et al. in 1999 found that only 28 cases had been reported since 1966 [5]. With the ever increasing availability of publications, a further search revealed another 17 patients reported from 1999 to 2002 [5-8]. This would suggest that bilateral anterior shoulder dislocation is perhaps not as rare as previously thought. Unlike the posterior dislocations, the anterior dislocations occurred more commonly following trauma rather than seizures. Of note is that of the 44 cases reported, five were diagnosed late [8]. Bilateral anterior dislocations associated with fractures of proximal humerus have been less frequently reported [5, 9, 10, 11].

The mode of trauma in described in such injury was reported to be seizures, fall from stairs, motor vehicle accident, and industrial accident [5]. Literature suggests that some of the patients with bilateral anterior fracture dislocation have been treated initially by closed reduction and immobilization without due attention towards the fracture which was diagnosed late [5]. The method of surgical management ranged from reduction and immobilisation in minimally displaced fractures to fixation using multiple k-wires and open reduction and plate osteo-synthesis.

Associated fracture of the greater tuberosity occurs in 15% of the anterior dislocation cases and indicates an associated rotator cuff tear [12, 13]. If the greater tuberosity fracture is displaced the diagnosis of a rotator cuff tear is almost certain. This may cause long term instability and functional impairment if the fragment is not anatomically reduced. Thus internal fixation after the reduction must be the rule in cases with more than 5 mm displacement. In one case tuberosity was fractured on one side and full thickness rotator cuff tear on another side [14]. These rare injuries are often associated with neural complication and rarely with vascular compromise [16, 17]. Neural injuries vary from axillary nerve injury to brachial plexus injury [17]. Some of these fractures have been missed during initial closed reduction and resulted into compromised shoulder function [18]. Late presentation in some cases required open reduction of dislocation [18].
4. Conclusion
This report suggests that bilateral anterior fracture dislocation of shoulder joint is a rare injury with not many reported cases in literature. Inability to diagnose a fracture associated with anterior dislocation at presentation is not uncommon. Prompt diagnosis and appropriate management leads to a satisfactory outcome with regaining of functional and acceptable range of motion.

5. References
