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Post Operative Floating Shoulder Rehabilitation: A Rare Case

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ABSTRACT

We present a case of shoulder instability following a traffic accident. Allman Type I midshaft clavicle, IDEBERG type scapular wing with multiple ribs fractures were diagnosed following radiologic examination. There were no signs of ligamentous injury. Mechanical instability was noted at the shoulder due to breakage of the supportive bony skeleton. The patient was treated surgically with plate and screw fixation. Surgical fixation allowed early postoperative physiotherapy and rehabilitation. This rare injury and its treatment options are discussed in the light of current literature.

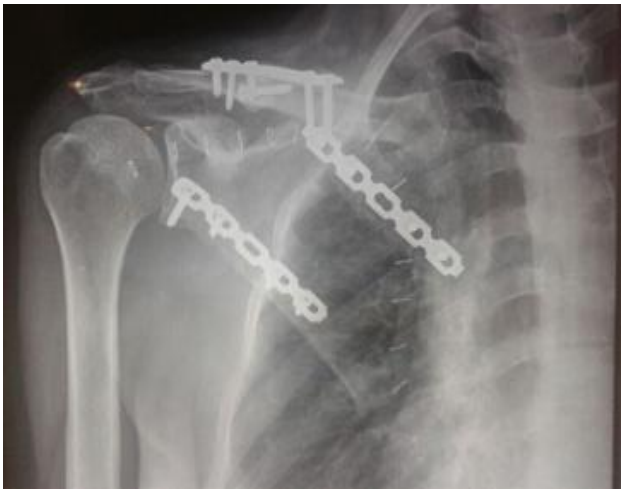
Key Words: *Floating shoulder, Scapula, Clavicle, Multiple ribs*

CASE REPORT

A 50-year-old man presented at the emergency services unit following a road traffic accident. After stabilization of vital signs for almost 2 weeks since there was subarachnoid hemorrhage of left temporo-parietal region and right side moderate pleural effusion along with pneumothorax. The patient was sent to the orthopedics department because of a swollen right shoulder joint. It's typicalfor high energy trauma to the shoulder girdle, but there was no otherneurovascular problems noted. Allman Type I midshaftclavicle, Ideberg/DeCloux Type I scapular wing fractures and 6th, 7th, 8th, 9th ribs mostly at postero-lateral aspect were diagnosed following radiologic examination. There were no signs of ligamentous injury on CT scan. The patient was hospitalised with a diagnosis of rightfloating shoulder. Patient was treated by openreduction and internal fixation of the bony skeleton. After reduction, internal fixation of the fractured clavicle was accomplished using 8 hole

Dynamic compression plateand the scapula was exposed via a Modified Judetposterolateralincision approach. A custom-made 5 holescapula reconstruction plate was used for rigid fixation of the superomedial wing of scapula.

Pre-Operative X-ray



Post-Operative X-ray

After 3 days of post surgery patient was referred for the Physiotherapy, Gentle active assisted movements were started along with cryotherapy to reduce the pain and edema. Patient was advised to use Shoulder sling throughout the day for almost two weeks.

1st week: Supine assisted arm elevation limit to 90 degrees

- Isometric exercises: internal and external rotation at neutral
- Elbow and forearm exercises
- Ball squeeze exercise
- Scapular retraction
- Diaphragmatic breathing exercises

2nd week: Pendulum exercises

- Supported wall slide stretch
- Supine Cross-Chest Stretch
- Side lying internal rotation (sleeper stretch)
- External rotation at 90° Abduction stretch

After two weeks,the patient was allowed to use his arm freely. No postoperative complications were noticed and Patient was discharged on 18th post operative day. The patient returned to work and daily life activities after 1 month. Pre-intervention Disabilities of the Arm, Shoulder and Hand (DASH) Questionnaire was 98; Active flexion was 40^0 and abduction was 45^0. At the postoperative 2nd week, the patient's score on the Disabilities of the Arm, Shoulder and Hand (DASH) Questionnaire was 45; active flexion was 110° and abduction was 100^0.

DISCUSSION

Scapular fractures are indicative of high-energy direct trauma to the shoulder with traffic injuries as the most common cause of such injuries. Typically, ipsilateral clavicle and scapular neck fracture combinations are described as floating shoulder. However, recent biomechanical studies

show that coracoacromial andacromioclavicular capsular ligament disruption is required for a floating shoulder diagnosis. Ipsilateral fractures of thescapular neck and the clavicular shaft does not warrant a floating shoulder injury unless ligamentous injury is also present.Direct anteroposterior andscapular Y radiographic views are helpful for diagnosis offloating shoulder. In case of suspicion without radiographicconfirmation, computerized tomography (CT) can be helpful.Patients diagnosed with floating shoulder injuries should undergo surgical treatment.

Internal fixation of the fractured clavicle is recommended to prevent late deformity and this is sufficient for maintaining stability of the shoulder girdle and preventing scapular mal union. Immediate post operative physiotherapy helps in improving ROM, decreasing incisional pain and improving quality of life. Cryotherapy helps in reducing inflammation and pain. Hence, after internal stabilization of scapula and clavicle fracture, with the help of physiotherapy ROM can be regained and functional improvements can be achieved.

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