

Bilateral Clavicular Fracture with Unilateral Scapular Fracture

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ABSTRACT

The aim of this report is to present a rare case of bilateral clavicular fracture with a unilateral scapular fracture of a young patient following high-velocity trauma without any comorbidity. Clavicle fracture is common however, simultaneously, both clavicle and scapular fracture is a rare entity. The incidence of bilateral clavicle fracture is 0.43% of clavicle fractures with an overall incidence of between 0.011 and 0.017%. According to our knowledge, no similar case has been reported. We present a case of 35 years old male who encountered a high energy trauma with a resulting right-sided comminuted midshaft clavicle fracture with the ipsilateral displaced scapular body fracture and left-sided midshaft clavicular fracture. He underwent open reduction and internal fixation. The range of movements of both acromioclavicular joints was satisfactory after three months of follow-up. Open reduction and internal fixation resulted in a good outcome.

KEY WORDS

Bilateral clavicle, Fracture, ORIF, Scapula

INTRODUCTION

Clavicle fracture accounts for 2.6-4% of fractures and approximately 44% of all shoulder girdle injury.^{1,2} The incidence of bilateral clavicle fracture is 0.43% of clavicle fractures with an overall incidence of between 0.011 and 0.017%.² Fracture of midshaft account for 69-82%, lateral (21-28%) and medial (2-3%).³ Scapular fractures are the consequences of high velocity trauma. The mode of injury includes comprehensive force across both or a direct blow to the shoulder girdle.⁴ Despite conservative management in displaced clavicular and scapular fracture, satisfactory functional results and bone union is obtained with open reduction and internal fixation (ORIF).^{4,5}

CASE REPORT

A 35 year young male patient presented to our emergency department after sustaining road traffic accident. He was examined thoroughly and was shifted to trauma ward for further assessment and treatment. The patient was

hemodynamically stable with a Glasgow Coma Scale score of 15. On physical examination, his bilateral shoulder movements were restricted with some superficial abrasions over right shoulder and small lacerated wounds on the nose without neurovascular injuries. The bilateral clavicular fracture was an initial clinical diagnosis. His right shoulder movement was gradually decreasing and tenderness was noted on examination. X-Rays (fig. 1) showed displaced left midshaft clavicular fracture and comminuted right midshaft clavicular fracture with displaced right scapular fossa fracture. Additionally, Computed Axial Tomography (CT) was performed for further detailed examination. (fig. 2) To get the better outcome of displaced clavicular and scapular fracture, open reduction and internal fixation (ORIF) was planned and preoperative investigations were carried out. The patient was operated for both clavicles and internal fixation was done for right scapula in a single setting with interfragmentary screws and held with anatomical locking plates with the use of standard AO techniques and

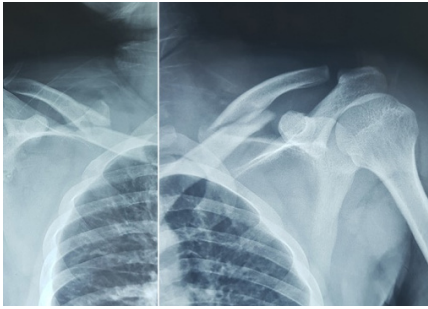


Figure 1. First X-Ray showing left midshaft clavicular fracture and comminuted right midshaft clavicular fracture with displaced subscapular fossa.



Figure 2. Computed Axial Tomography (CT) showing the clear displacement of right subscapular fossa with comminuted clavicle fracture.

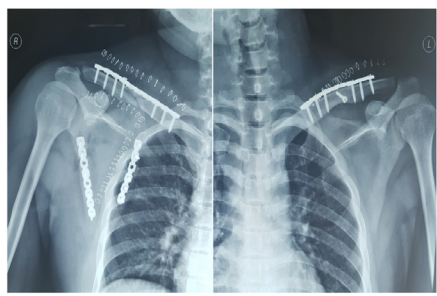


Figure 3. Immediate post-operative X-Ray showing the use of anatomical locking plates.



Figure 4. 6th week post-operative follow up showing pain free and full range of motion of both upper limbs.



Figure 5. 12th week post-operative follow-up X-Ray showing complete union signs with proper reduction.

principles (fig. 3). The total time for surgery was 2 hours and 50 minutes with 300 ml blood loss approximately. Intraoperative and post-operative periods were uneventful and the patient was discharged after 3 days with an arm sling for the right upper limb with strict immobilization of left arm. The patient was reviewed on regular interval postoperatively. Regular wound dressing was done till 5th postoperative day followed by alternate day. During that period wound was clean and no infection signs were noticed. Sutures were removed on 10th postoperative day. Physiotherapy was started after 4 weeks. At 6 weeks, a pain free and full range of motion of both upper limbs was noticed (fig. 4) and at 12 weeks, X-Ray showed signs of complete union with proper alignment (fig. 5). The patient was fully satisfied with the treatment option.

DISCUSSION

Latest research shows that, bilateral clavicle fracture with the unilateral scapular fracture is a very rare presentation.⁶ The mechanism of bilateral clavicular fracture and scapular fracture are usually associated with a high energy trauma and therefore are associated with other concomitant injuries.^{3,4,6} Bilateral displaced clavicle fracture and scapular fracture can also form a part of more complex disruption of the shoulder girdle and stability of the shoulder complex can be achieved by stabilization of the clavicle by internal fixation.^{1,7} Since scapular fractures are related to high energy traumas such as first rib fracture, clavicle fracture, they may be a part of polytrauma. Such patients must be thoroughly examined for the thoracic cage injuries and

blunt abdominal trauma as well. On scapular examination, deformity may lead to hematoma formation and rotator cuff injury that can be characterized by weakness in the movement of the shoulder joint and is associated with a higher mortality rate.⁸ For the diagnosis of a scapular fracture a high quality X-Ray and CT are preferred. 3-D reconstruction images, when used in conjunction with axial images, provides very valuable information and aids in determining the appropriate treatment modality. So, it must be used along with CT.⁹ Surgical intervention is the demand of advancing time for bilateral clavicle and associated fractures for better and satisfactory outcome with minimum chance of complications. So, ORIF for bilateral clavicle fracture are per se an indication for surgical stabilization.¹⁰ Operative management is a better choice for such cases to achieve a good outcome as conservative treatment can lead to various complications.

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