



Case report

Isolated scapula fracture: Ice hockey player without trauma

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HIGHLIGHTS

- We tried to present a rare fracture of scapula.
- We showed a different aspect for scapula fracture.
- Care has to be taken for diagnosing of an isolated scapular fracture.

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ABSTRACT

Introduction: Scapular fractures are generally occur from in high-energy traumas and are associated with a high incidence of morbidity and mortality.

Presentation of case: We present an unusual scapular fracture that occurred with a rare mechanism. A 23-year-old male patient who led an active sports life for 10 years and played ice hockey for the last 5 years. In a competition, he felt a sudden pain in his right scapula after hit the puck. He did not experience any direct trauma to his shoulder and there was no evidence of any pathological fracture. The fracture was isolated in the scapular body and it was classified as type 4, according to Hardegger classification. The was patient immobilized with a Velpau bandage for three weeks and then treated with physiotherapy for shoulder rehabilitation.

Discussion: The fracture mechanism was likely a disharmonious contracture of the agonist and antagonist muscles of the shoulder joint while hitting the puck.

Conclusion: Scapular fractures are generally seen along with other injuries, but in this case we wanted to emphasize that care has to been taken to diagnose an isolated scapular fracture while assessing shoulder pain.

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1. Introduction

The scapula connects the upper extremities to the axial skeleton. It is flat and triangular shaped [1]. It is almost completely covered by muscles and fractures of the scapula occur frequently due to traffic accidents, falls, and crushing injuries associated with high-energy traumas [2]. The majority of scapular fractures (61–98%) are associated with other injuries. Therefore, scapular fractures correspond to a high morbidity and mortality [3]. Although most common scapular fractures result from blunt trauma, electric shock or seizures may also be rare causes of scapular fractures, as muscles and ligaments of the humeral head with the glenoid fossa are

pulled due to indirect mechanisms and isolated scapula fractures are rare [4].

We present an isolated scapular fracture of an ice hockey player after hitting puck without direct trauma.

2. Case

The patient is a 23-year-old male who plays ice hockey for 5 years. He has played different sports for about 10 years. He had no medical condition in the past. He felt pain in his right shoulder after hitting the puck during an ice hockey competition and was admitted to the emergency room. He did not state that any blunt trauma occurred.

Pathological and metabolic causes for the fracture of the patient were also investigated. Calcium and D-vitamin levels were normal

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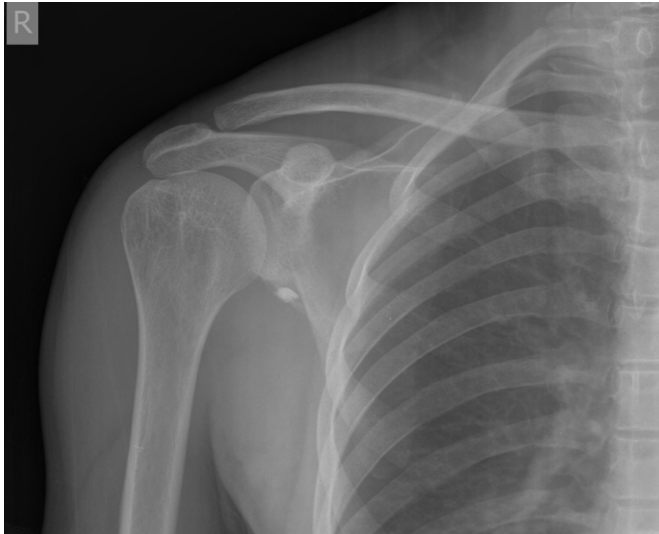


Fig. 1. Anteroposterior radiograph of the patient's shoulders.

and tumor markers were negative. Any pathological etiologies wasn't found. The fractures was seen in the body of the scapula and it was a transverse fracture so; it was evaluated to be type 4 according to Hardegger classification (based on displacement and involving glenoid) (Figs. 1 and 2). The patient was neurovascularly intact.

After evaluating the type of fracture and the degree of displacement, conservative treatment was deemed most appropriate. Non-steroid anti-inflammatory agents given for 72 h with gastroprotective agents. A Velpau bandage was applied to the patient for 6 weeks and after the patient was followed up and assessed using the Constant-Murley scoring system. The union was seen after 6 weeks and the patient returned to his active sport life after 3 months (Fig. 3a and b). No physiotherapy applied to the patient. The Constant-Murley score of the patient (based on pain, range of motion and muscle strength) was 68 points at 6 weeks, 93

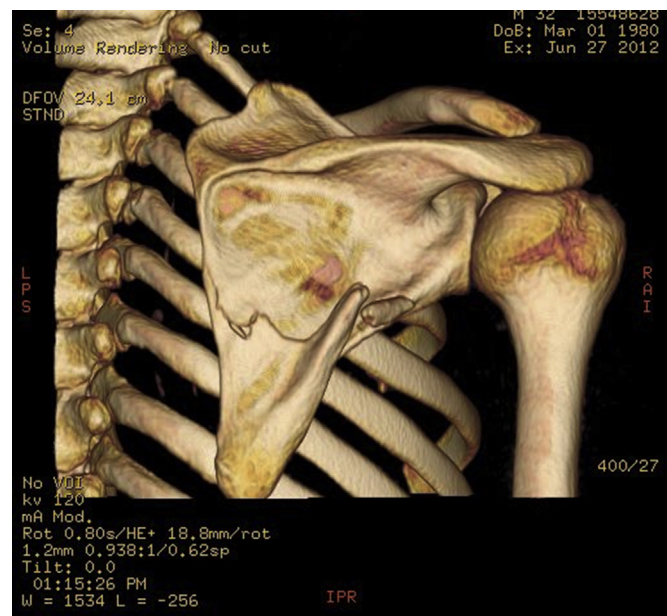


Fig. 2. Three-dimensional colored CT image of the patient's right shoulder.

points at 3 months and 100 points after 1 year. Range of motion of the shoulder was normal within 3 months. There was no additional shoulder pathology. The consent form taken from the patient for the publication as a case report.

3. Discussion

Scapula fractures are seen in high-energy and life-threatening traumas [5,6]. Trauma resulting from traffic accidents, falls and crush injuries can cause fractures of the scapula in its all anatomical regions [7]. Changes in injury type can occur depending on the position of the scapula and the thoracic motion of the patient. The scapula allows a maximum total length of 12 cm of movement of scapulothoracic motion with elevation or depression. It also can move in the chest wall with internal-external rotation. With upward or downward movement can occur due to the concomitant drop in the glenoid, which can also tilt. When the glenoid of the scapula moves upward, the vertical axis angle is nearly 60° between the vertebral edge of the scapula and the transverse axis [8].

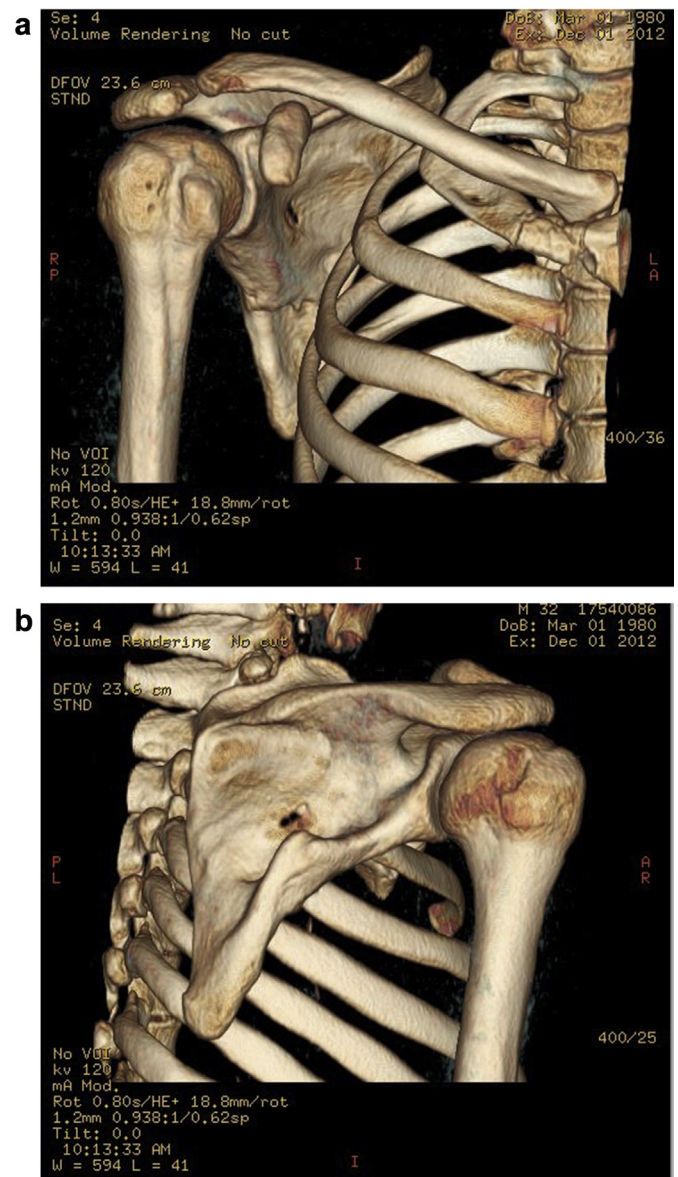


Fig. 3. Three-dimensional colored imaging of the scapula 6 weeks after the trauma.

Scapula fractures by indirect traumas, such as electrical stimulation and stress fractures, have been reported in the literature [9,10,11]. However, an isolated fracture of scapula with a mechanism of injury similar to this case has never been described.

The mechanism of the fracture is likely simultaneous disharmonious contraction of the agonist and antagonist muscles (especially the trapezius and latissimus dorsi muscles) localized in the chest through the arm.

4. Conclusion

Shoulder pain in sports players should be assessed carefully. As we can see in this case, this type of injury and mechanism should be kept in mind while assessing shoulder pain.

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