

CASE REPORT

Olgu Sunumu

Nafis VURAL

Konya Ereğli State Hospital,
Department of Emergency
Medicine, Konya, Türkiye
42nafisvural@gmail.com

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Nafis VURAL
Konya Ereğli State Hospital,
Department of Emergency Medicine,
Konya, Türkiye

ORCID ID: 0000-0002-3551-201X

Isolated Displaced Glenoid Fracture Caused by Minor Trauma: A Case Report

Minör Travmanın Neden Olduğu İzole Deplase Glenoid Fraktürü: Bir Olgu Sunumu

ABSTRACT

The glenoid is a shallow structure in the shoulder joint, facing the humeral head and located lateral to the scapula. Glenoid fossa intra-articular fractures account for only 1% of scapular fractures and are associated with high-energy trauma. An 84-year-old female patient admitted to the emergency department with the complaint of pain in her left arm and inability to move her arm as a result of falling over her shoulder from her own level. On the shoulder radiograph of the patient, a suspicious area that could be a fracture in the glenoid rim was observed. Computer tomography revealed a displaced fracture line starting from the glenoid rim and extending to the medial wall of the scapula. Velpeau bandage was applied to the patient. Elderly female patients should be carefully examined and necessary imaging should be performed, even if they are exposed to a low-energy trauma to the shoulder girdle (such as falling from one's own level). Computed tomography, which is one of the advanced imaging methods, should be applied when a suspicious image of a glenoid fracture is found on the radiography.

Key Words:

Scapular fracture, Isolated glenoid fracture, Emergency department, Minor trauma

ÖZ

Glenoid, omuz ekleminde humerus başına bakan ve skapulunun lateralinde yer alan sığ bir yapıdır. Glenoid fossa eklem içi kırıkları, skapular kırıkların sadece %1'ini oluşturur ve yüksek enerjili travma ile ilişkilidir. Kendi seviyesinden omzunun üzerine düşmesi sonucu sol kolunda ağrı ve kolunu hareket ettirememeye şikayeti ile 84 yaşında kadın hasta acil servise başvurdu. Hastanın omuz grafisinde glenoid rimde kırık olabilecek şüpheli bir alan izlendi. Bilgisayarlı tomografide glenoid kenardan başlayan ve skapula medial duvarına uzanan deplase bir kırık hattı izlendi. Hastaya Velpeau bandajı uygulandı. Yaşlı kadın hastalar, omuz kuşağına düşük enerjili bir travmaya (kendi seviyesinden düşme gibi) maruz kalsalar dahi dikkatle muayene edilmeli ve gerekli görüntüleme yapılmalıdır. Gelişmiş görüntüleme yöntemlerinden biri olan bilgisayarlı tomografi, radyografide şüpheli glenoid kırığı görüntüsü bulunduğu anda uygulanmalıdır.

Anahtar Kelimeler:

Skapula fraktürü, İzole glenoid fraktürü, Acil servis, Minör travma

INTRODUCTION

The glenoid is a shallow structure in the shoulder joint, facing the humeral head and located lateral to the scapula. The glenohumeral joint is a complex joint with low stability. The shoulder ligaments and rotator cuff muscles provide most of the joint stabilization (1). Fractures of the scapula are rare and occur in less than 1% of all fractures and only 3% to 5% of shoulder girdle injuries (2). Glenoid fossa intra-articular fractures account for only 1% of scapular fractures and are associated with high-energy trauma (3).

Since the scapula is surrounded and protected by thick skeletal muscles, it is very difficult to damage. Scapular fractures, including the glenoid, occur secondary to high-impact blunt trauma and are generally associated with injuries to other anatomical adjacent structures (4). Fractures caused by low-energy trauma are only seen in anterior shoulder dislocations associated with glenoid rim and avulsion fractures (2).

Cases of scapula fractures occurring with various mechanisms have been reported before. In this article, we present a case of isolated glenoid fracture caused by a minor trauma such as falling from one's own level.

CASE REPORT

An 84-year-old female patient admitted to the emergency department with the complaint of pain in her left arm and inability to move her arm as a result of falling over her shoulder from her own level. On physical examination, the patient could not actively abduct, turn her shoulder inward or outward, and he felt severe pain when these movements were passively performed. The patient's peripheral pulses were intact and equal. The patient's sensory examination was normal. It was observed that there was no loss of flexion and extension strength at the wrist and metacarpophalangeal joint level of the patient.

On the shoulder radiograph of the patient, a suspicious area that could be a fracture in the glenoid rim was observed (Figure 1).

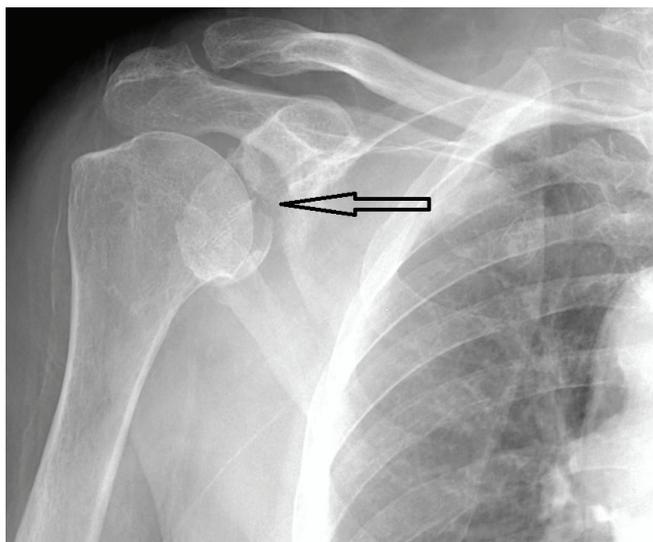


Figure 1: Shoulder radiograph: black arrow points to suspected fracture of glenoid rim.

Then, joint computed tomography (CT) was performed on the patient. CT revealed a displaced fracture line starting from the glenoid rim and extending to the medial wall of the scapula (Figure 2-3).

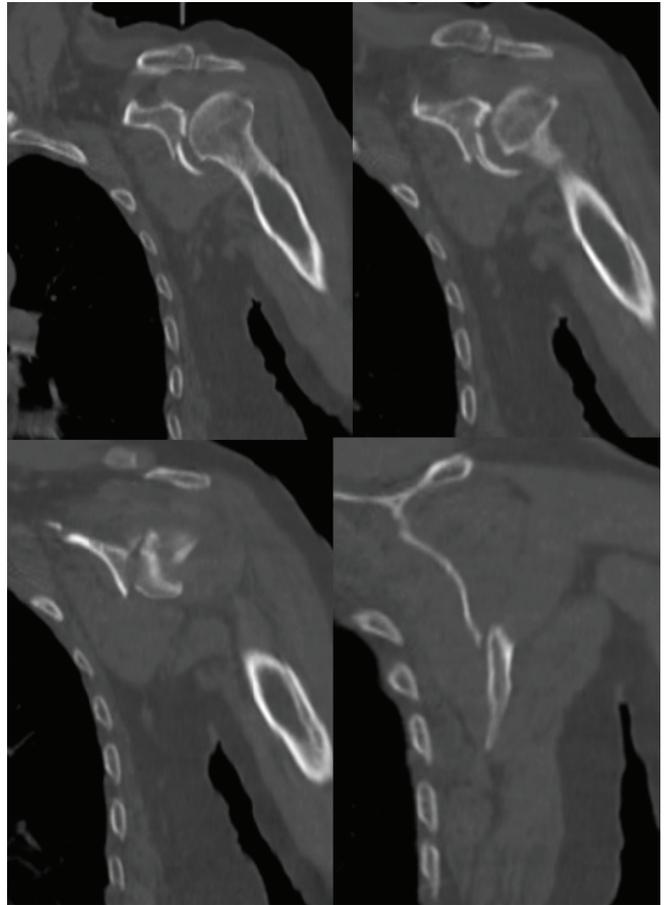


Figure 2: Joint CT coronal section: Displaced glenoid fracture.

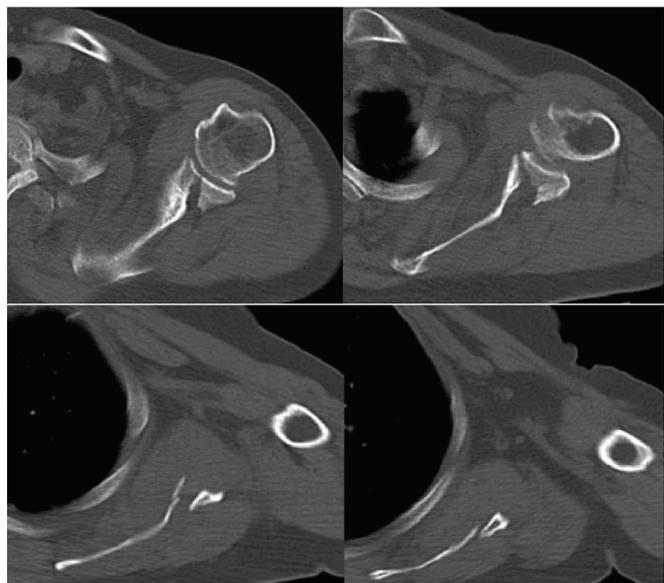


Figure 3: Joint CT horizontal section: Displaced glenoid fracture scapula extends to medial edge.

The patient was consulted to the orthopedic surgeon. Velpeau bandage was applied to the patient. The patient was given analgesic treatment. Orthopedic outpatient control was recommended to the patient.

DISCUSSION

A patient with a fracture of the scapula usually complains of pain and limitation of shoulder motion. Swelling and hematoma formation in scapula fractures may be mild due to closed fascial spaces. For this reason, the shoulder should be carefully examined in order not to miss the scapula fracture (5). Although our patient had similar complaints, there was no hematoma or swelling. Therefore, we resorted to radiological imaging methods. X-ray helps reveal glenoid fractures. However, if intra-articular involvement or severe displacement is suspected, use of computed tomography (CT) is recommended, as it aids in fracture classification and subsequent surgical decision (6).

Fractures of the scapula can first be divided into intra-articular and extra-articular fractures. Classification for intra-articular glenoid fractures created by Ideberg after a retrospective study is shown in Table I (7).

Table I: Ideberg classification of glenoid fossa fractures.

Type Ia	Anterior rim fracture Severe comminution
Type Ib	Posterior rim fracture
Type II	Fracture line through glenoid fossa exiting scapula laterally
Type III	Fracture line through glenoid fossa exiting scapula superiorly
Type VI	Fracture line through glenoid fossa exiting scapula medially
Type Va	Combination of types II and IV
Type Vb	Combination of types III and IV
Type Vc	Combination of types II, III, and IV
Type VI	Severe comminution

According to this classification, our patient's fracture is type 4 fracture. The results of this study showed that female patients with type 4 glenoid fractures had a mean age of 66 years and no other skeletal damage was found in this type of fracture. The age of the patient in our case is above this average. In addition, the occurrence of isolated glenoid fracture in our patient is also consistent with the literature.

It paves the way for fractures that can occur with such a minor trauma in osteoporotic conditions in elderly female patients. As a result of one study, 1/3 of elderly patients with fractures after minor trauma were subsequently diagnosed with osteoporosis (8). Our patient should be investigated in terms of osteoporosis after fracture treatment. More studies should be conducted for shoulder girdle fractures, especially isolated fractures, in the geriatric population, where they are vulnerable to injury by minor trauma.

CONCLUSION

Elderly female patients should be carefully examined and necessary imaging should be performed, even if they are exposed to a low-energy trauma to the shoulder girdle (such as falling from one's own level). Computed tomography, which is one of the advanced imaging methods, should be applied when a suspicious image of a glenoid fracture is found on the radiography.

Informed Consent:

All the participants' rights were protected and written informed consents were obtained before the procedures according to the Helsinki Declaration.

Conflict of Interest:

The authors have no conflict of interest to declare.

Financial Disclosure:

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