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CASE REPORT

SIMULTANEOUS DISLOCATION OF THE SHOULDER AND CONTRALATERAL HALLUX INTERPHALANGEAL JOINT: A CASE REPORT EMPHASIZING THE NECESSITY OF COMPREHENSIVE EXAMINATION

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Abstract. *When diagnosing trauma patients, it is crucial to perform a meticulous clinical examination to avoid missing any underlying injuries. A thorough assessment of the patient is essential as more severe injuries can sometimes obscure others. This report describes an exceptionally rare case involving simultaneous shoulder and contralateral hallux dislocation. The goal is to emphasize the importance of comprehensive evaluation in patients with trauma suggestive of multiple injuries. Herein, we report an extremely rare and complex injury in a male patient in his 40's who presented with simultaneous dislocation of the shoulder and the contralateral interphalangeal joint of the hallux after a fall from a height of 3 meters. The patient was admitted to the emergency department with severe pain and a deformed right shoulder and contralateral great toe. The shoulder was repositioned under anesthesia, and the first interphalangeal joint was manually repositioned. This case highlights the critical role of a thorough examination in trauma patients to avoid overlooking subtle injuries and ensure appropriate treatment.*

Key words: *simultaneous dislocation, shoulder, great toe, thorough examination*

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INTRODUCTION

Shoulder dislocation is the most common type of joint dislocation and has been widely studied, accounting for approximately 50% of all dislocations [1]. In contrast, dislocations of the great toe are exceedingly rare and are poorly represented in the literature [2]. These dislocations typically result from high axial pressure and hyperextension of the great toe, often due to high-energy trauma such as motor vehicle accidents or falls from significant heights [3].

According to Miki et al., dislocations of the first interphalangeal joint (IPJ) of the foot can be classified into two types based on the radiographic and clinical findings [3]. Type 1 involves an elongated toe resulting from a ruptured volar plate trapped within the intra-articular space between the proximal and distal phalanges, while type 2 is characterized by the volar

plate being displaced over the head of the proximal phalanx [3]. The deformity is less apparent in the first type, whereas in the second type, the toe is locked in hyperextension, resulting in a visibly deformed appearance [2-4]. Simultaneous dislocation of the glenohumeral joint and the hallux IPJ is exceptionally rare. Due to its rarity, IPJ dislocation can easily be overlooked during the examination of a trauma patient [3, 4].

Herein, we present a scarce case of a male patient in his 40's who sustained simultaneous dislocations of the contralateral shoulder and the IPJ of the hallux following a fall from a height of 3 meters. Although such a combination of injuries is uncommon in clinical practice, to the best of our knowledge, this is the first reported case involving both pathologies.

CLINICAL CASE DESCRIPTION

A man in his 40's arrived at the emergency department after falling from a 3-meter height. The patient had no history of alcohol or drug use. Clinical examination revealed an abnormal configuration of the right glenohumeral joint, with the patient experiencing both spontaneous and palpatory pain in the affected area. The head of the humerus was palpable on the anterior aspect of the shoulder, a sign known as the Epaulette sign, which is a key indicator of anterior shoulder dislocation. Additionally, the patient reported pain in the great toe of his left foot (Fig. 1a). There were no signs of neurovascular damage in either the shoulder or toe.

Plain radiographs confirmed an anterior dislocation of the glenohumeral joint (Fig. 2a,b) and a type one dislocation of the hallux IPJ (Fig. 1b,c), as classified by Miki. The treatment consisted of closed reduction under venous anesthesia for both joints (Fig. 2c; Fig. 3). Post-reduction, the shoulder joint was immobilized with a Dessault bandage, a type of shoulder immobilizer that provides support and restricts movement, and the IPJ was immobilized with a finger-to-finger bandage, a type of splint that stabilizes the injured finger by attaching it to an adjacent finger, for 30 days. Follow-up examinations were conducted on the 7th, 14th, and 30th days, with no evidence of recurrent dislocations.

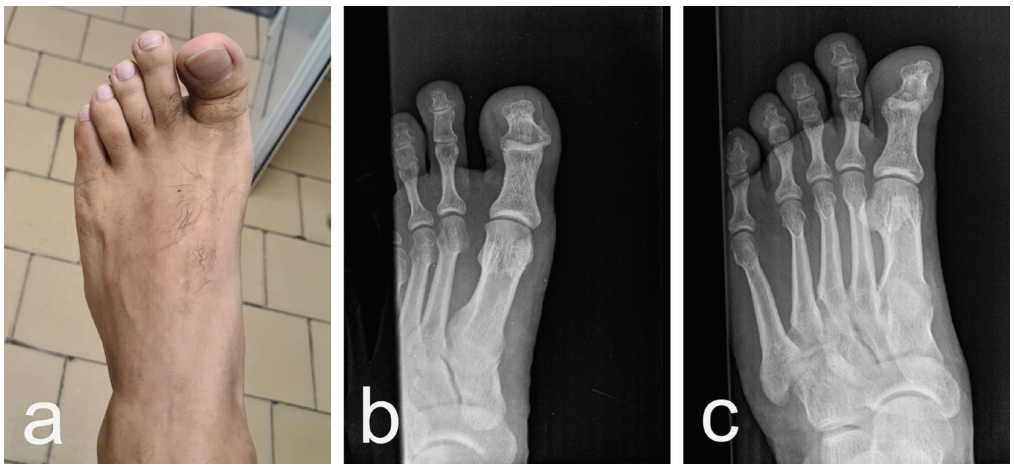

Fig. 1. a – Photograph of the injured toe; **b** – X-ray of the injured toe in AP view; **c** – X-ray of the injured toe in oblique view

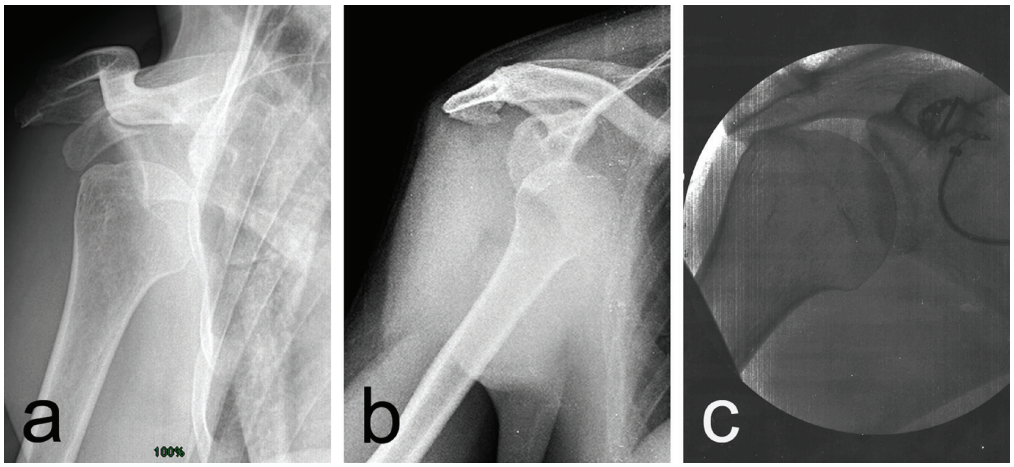

Fig. 2. Preoperative X-rays of the injured shoulder (**a, b**) and post-reduction X-ray in AP view under C-arm (**c**)

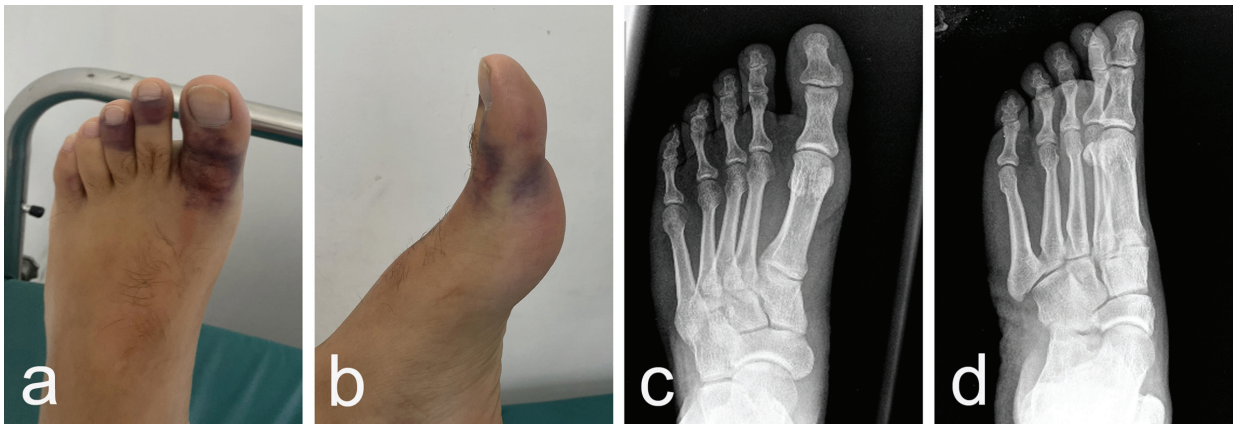

Fig. 3. Post-reduction photographs of the toe in AP view (**a**) and oblique view (**b**); post-reduction X-ray in AP view (**c**) and oblique view (**d**)

One year after the injury, the patient reported no complaints regarding either joint and exhibited a full range of motion in the glenohumeral joint, demonstrating the successful outcome of the treatment.

DISCUSSION

The shoulder is the most frequently dislocated joint, mainly because of its wide range of motion and unique anatomical structure. Most shoulder dislocations are anterior, accounting for up to 46% of all glenohumeral luxations, while posterior and inferior dislocations are significantly less common, comprising only 3% and 1% of cases, respectively [1, 5]. Given their high incidence, shoulder dislocations are well-researched and are typically straightforward to diagnose through clinical examination, with confirmation via plain radiographs [1, 5, 6].

Other injuries often accompany shoulder dislocations. For instance, Utkan et al. reported a case involving ipsilateral posterior elbow dislocation alongside an inferior shoulder dislocation. At the same time, Çobanoğlu et al. documented a case of posterolateral elbow dislocation combined with anterior glenohumeral dislocation [1]. Additionally, contralateral involvement can occur, as demonstrated in our case. Bilateral anterior shoulder dislocation has also been reported by Meena et al., further illustrating the complexity of such cases, typically resulting from high-energy mechanisms, such as falls from a significant height [1, 6, 7].

In cases of shoulder dislocation, additional imaging such as CT or MRI can be utilized to identify associated fractures of the humeral head or tubercles, as well as Hill-Sachs and Bankart lesions, and to assess soft tissue injuries [5, 6]. In our case, the limb's position and the positive Epaulette sign were key initial indicators of the dislocation, with X-ray images confirming the diagnosis. Various reduction techniques are available, including the Stimson maneuver, scapular manipulation, and external rotation, though no single method has demonstrated superiority; the choice of technique is typically left to the physician's discretion [8]. In this case, the anterior glenohumeral dislocation was reduced under anesthesia using traction and external rotation [8]. Following reduction, immobilization of the joint for at least 30 days is essential to ensure proper healing.

Dislocations of the hallux IPJ are among the rarest trauma cases seen in emergency departments. Diagnosis relies on clinical examination and imaging, with plain radiographs confirming the dislocation. Sonography and MRI are used to assess soft tissue damage, while CT scans may detect bone lesions [2, 3, 9]. Miki et al. classified IPJ dislocations into two types [3]. A review of the literature identifies 15 reported cases of type 1 dislocations, 42 cases of type 2, and an additional 5 unclassified cases [4].

The preferred treatment for IPJ dislocations is closed reduction [3, 9]. If necessary, percutaneous Kirschner wires can be used to maintain the reduced position. Open reduction becomes the next step when closed reduction is unsuccessful. The most common cause of failure in closed reduction is the intra-articular entrapment of sesamoid bones [2, 3, 9, 10]. Open reduction can be approached dorsally, plantarly, or laterally, with the plantar approach being advantageous for preserving the ligament and the sesamoid bone within it [3, 9, 10].

CONCLUSION

Hallux IPJ dislocation is an uncommon pathology, and it occurs alongside a contralateral glenohumeral joint dislocation infrequently. This case underscores the critical importance of conducting a thorough ex-

amination of trauma patients to avoid overlooking less painful but significant injuries that may be masked by more obvious trauma. Comprehensive evaluation and the appropriate selection of treatment strategies are essential for ensuring optimal patient outcomes and maintaining high standards of medical practice.

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Ethical statement: *This study has been performed in accordance with the ethical standards as laid down in the Declaration of Helsinki.*

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