

(CASE REPORT)



Translunate fracture-dislocation: a rare and challenging wrist injury

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Abstract

Translunate fracture-dislocation is an exceptional wrist injury with some rare cases published that requires prompt diagnosis and management, we present the management and the evolution of 35-year-old man with translunate fracture dislocation and after 6 months follow-up.

Keywords : Wrist, translunate, fracture, dislocation.

1. Introduction :

Perilunate dislocation and lunatum fracture is an exceptional wrist injury called translunate fracture-dislocation that can occur separately or together with a rare cases published. When they occur together, they present a challenging treatment problem that requires prompt diagnosis and management to prevent long-term complications.

Perilunate dislocation occurs when the carpal bones in the wrist dislocate, while a lunatum fracture occurs when the small crescent-shaped bone at the end of the wrist is fractured (1). Both injuries are uncommon, and a combination of both is even rarer. However, when they occur together, they can lead to significant complications such as post-traumatic arthritis and joint dysfunction.

In this article, we present a case of a 35-year-old patient who presented a translunate fracture-dislocation, as well as a review of the literature on the diagnosis, management, and outcomes of this rare and challenging wrist injury.

2. Case report :

A 35-year-old male presented to the emergency department with a history of fall from a height of 5 meters. The patient complained of severe pain and swelling in the right wrist. On examination, the wrist was deformed, and there was significant tenderness and swelling. Radiographic evaluation revealed a perilunate dislocation with a fracture of the lunatum bone (Figure 1).

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Figure 1 : Standard radiographic : a translunate fracture-dislocation

The patient was immediately taken to the operating room for closed reduction of the dislocation under general anesthesia. The wrist was then immobilized with a splint, and a computed tomography (CT) scan was obtained to assess the fracture pattern and plan further management.

The CT scan showed a type IIIB lunatum fracture, which is a comminuted fracture involving more than 50% of the articular surface of the bone (Figure 2). Due to the severity of the fracture, open reduction and internal fixation were planned.

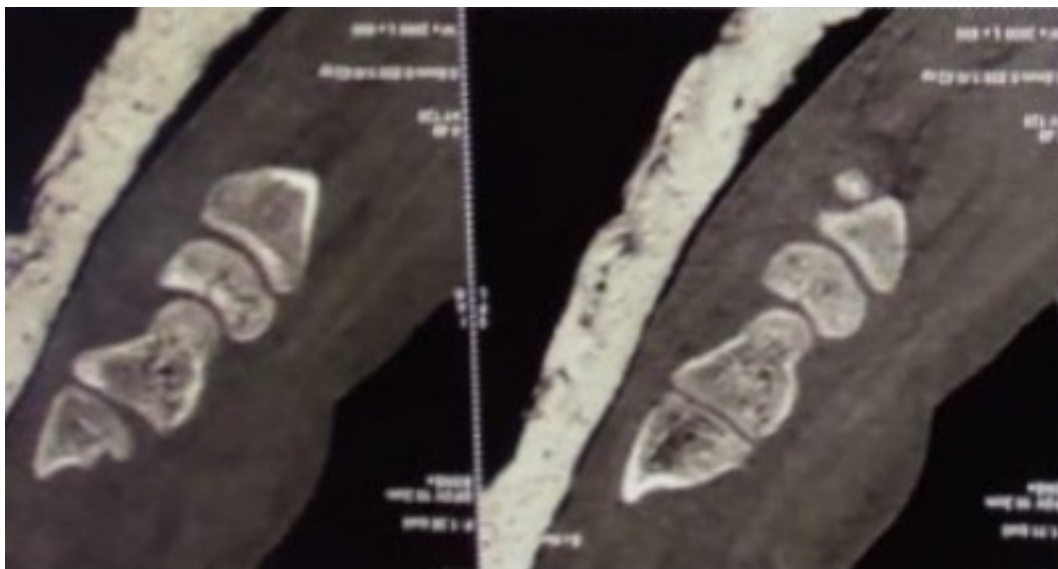


Figure 2: The CT scan showed lunatum fracture after reduction

The patient underwent open reduction with a posterior approach (Figure 3) and internal fixation of the lunatum fracture using Herbert screws 2.0. And a triple pinning scapho-lunate, scapho-capitate and triquetro-lunate and repair of the scapho-lunate and triquetro-lunate ligament (Figure 4,5). The patient was then placed in a splint for several weeks, followed by a rehabilitation period to restore wrist strength and function and ablation of the pinning in the 6th week (Figure 6).

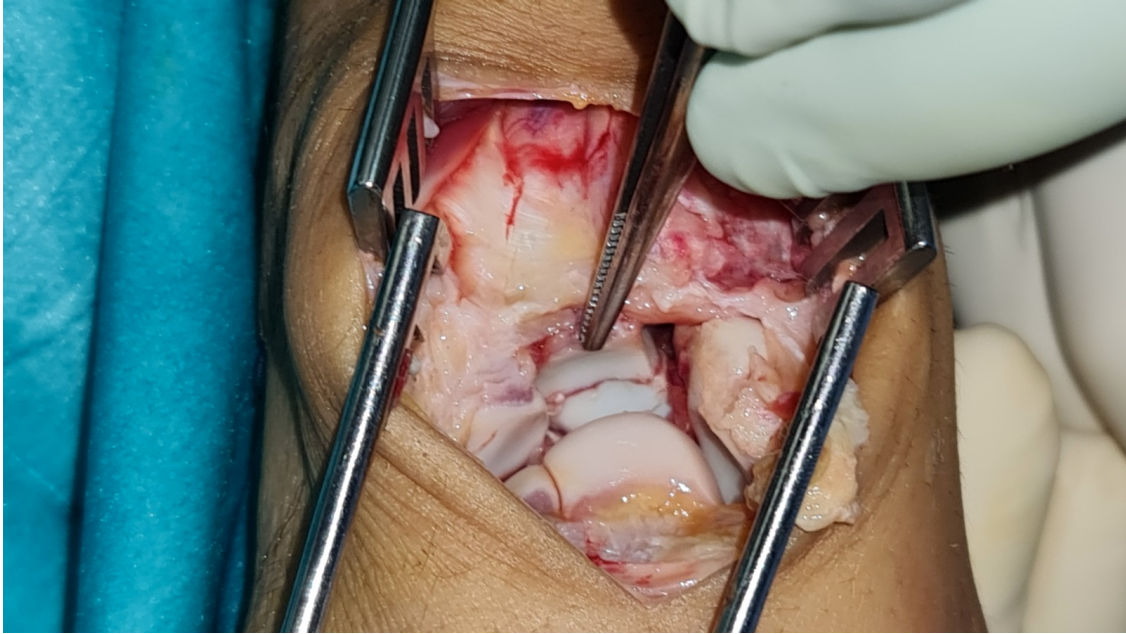


Figure 3 : Posterior approach that shows the lunatum fractures

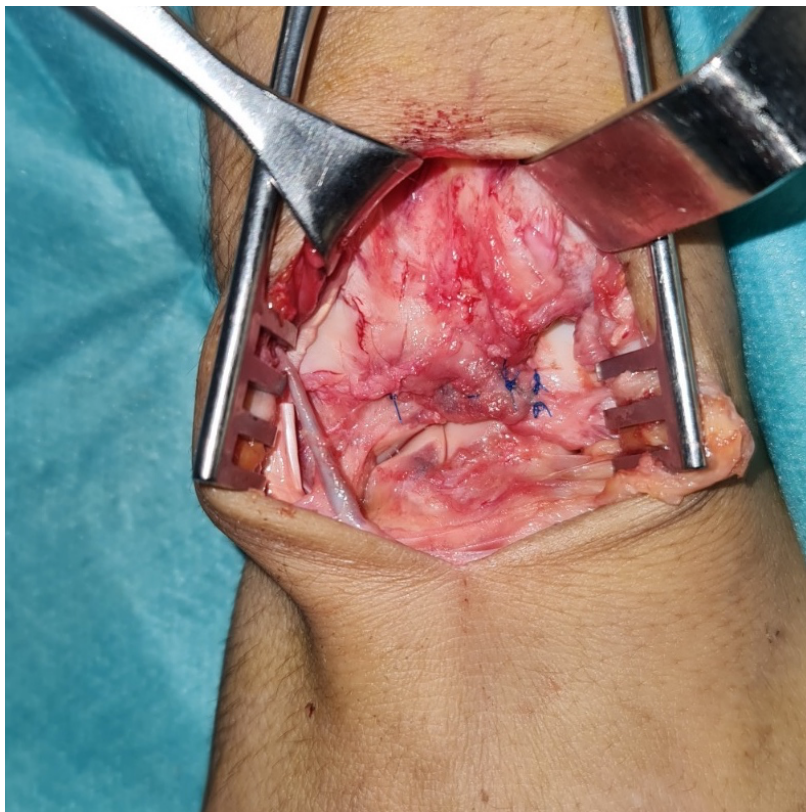


Figure 4 : Repair of the scapho-lunate and triquetro-lunate ligaments.

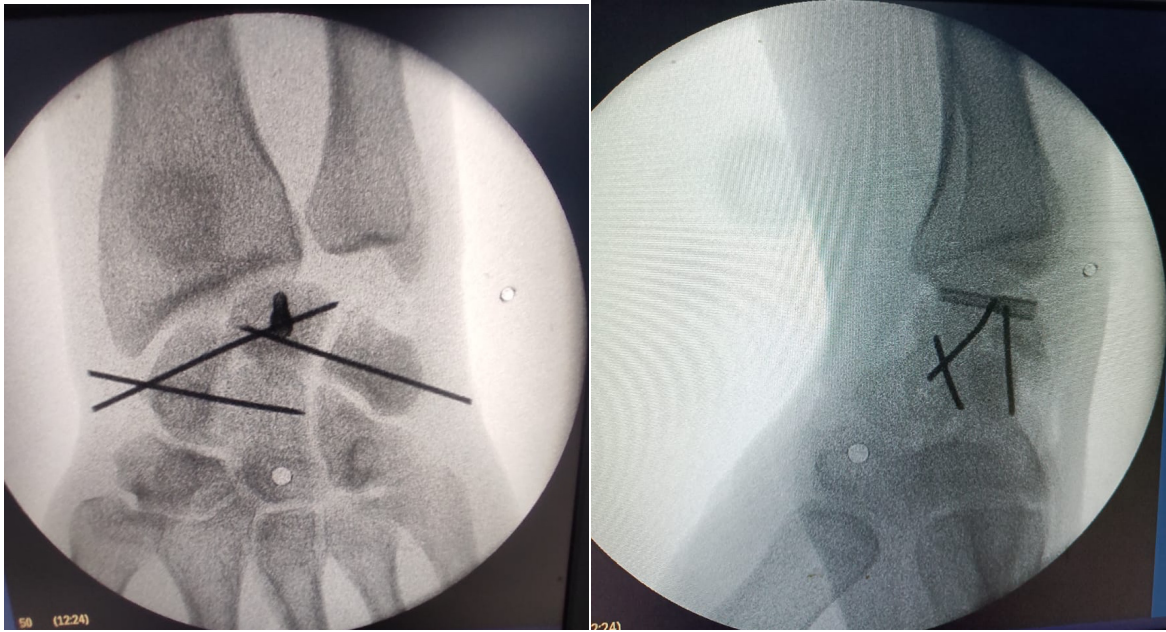


Figure 5 : The scopic control

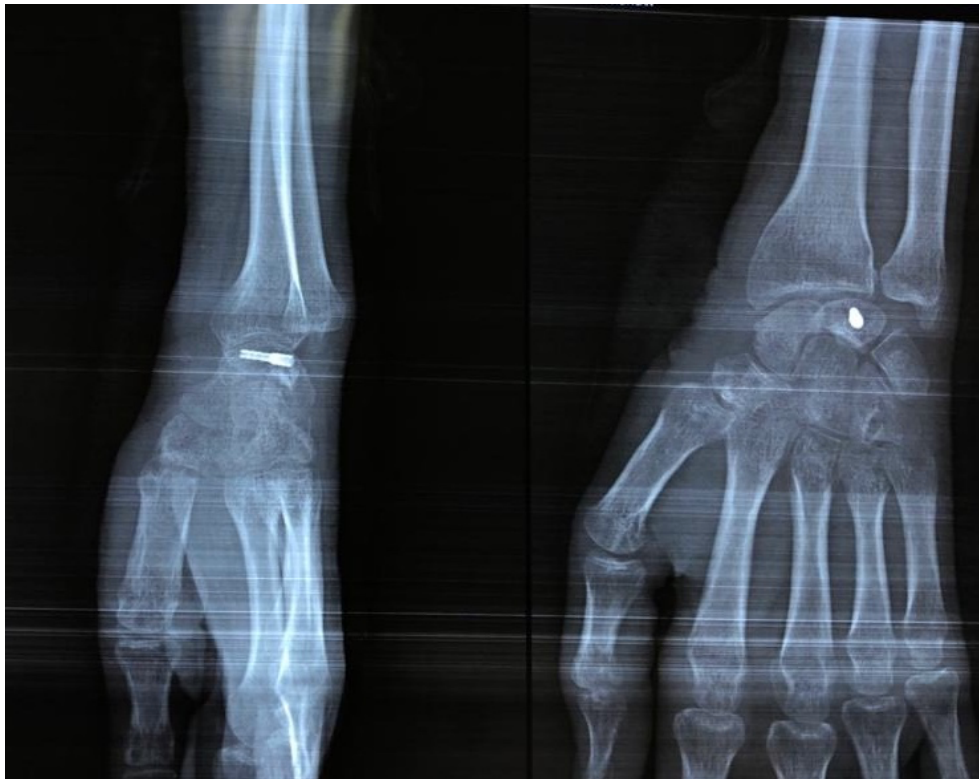


Figure 6 : Standard radiographic after 6 months.

3. Discussion :

Perilunate dislocation are rare and represent 5 to 10% of wrist injuries (2,3) and lunate fractures represent 2% to 3,9% from all carp fractures (4,5), they can lead to significant complications if not managed promptly and appropriately. The management of this injury requires a multidisciplinary approach involving orthopedic surgeons, hand surgeons, radiologists, and physical therapists.

Perilunate dislocation associated with lunatum fracture is an exceptional and complex wrist injury, with no case is described in the literature

Teisen (6) found 17 patients in 31 years with semi lunate fractures. The diagnosis of perilunate dislocation associated with lunatum fracture requires a high index of suspicion, especially in cases of high-energy trauma to the wrist. The initial evaluation should include a thorough history and physical examination, as well as radiographic evaluation. Standard radiographs, including anteroposterior (AP), lateral, and oblique views, can provide information on the location and severity of the dislocation and fracture. CT scan is useful for assessing the fracture pattern and planning the surgical approach.

Classification:

Perilunate dislocations are classified based on the direction of the displacement of the lunate bone. The most common classification system is the Mayfield (7) classification, which divides perilunate dislocations into four types based on the location of the lunate bone in relation to the radius:

Type I: The lunate bone is displaced dorsally (posteriorly) and is in contact with the radius. Type II: The lunate bone is dislocated dorsally and is not in contact with the radius.

Type III: The lunate bone is dislocated volarly (anteriorly) and is in contact with the capitate bone.

Type IV: The lunate bone is dislocated volarly and is not in contact with the capitate bone.

Lunatum fractures are classified based on the extent of the articular surface involvement and displacement. The most widely used classification system is the Teisen (6) classification, which divides lunatum fractures into five types:

Type I: Fracture of the volar pole, possibly affecting the volar nutrient artery. Type II: Chip fracture not affecting the main blood supply. Type III: Fracture of the dorsal pole, possibly affecting the dorsal nutrient artery. Type IV: Sagittal fracture through the body of the lunate. Type V: Transverse fracture through the body of the lunate

The management of perilunate dislocation associated with lunatum fracture depends on the type and severity of the injury, as well as the presence of associated injuries (8).

Postoperative care involves immobilization with a splint or cast for several weeks, followed by a rehabilitation program to restore wrist function. The rehabilitation program usually includes range of motion exercises, strengthening exercises, and functional activities. (9)

Complications of trans lunate fracture-dislocation include post-traumatic arthritis, joint dysfunction, and nerve and vascular injury. Long-term follow-up is necessary to monitor for these complications and intervene if necessary. (10)

4. Conclusion :

In this rare case of translunate fracture-dislocation with scapholunate and lunotriquetral ligament damage that can be difficult to diagnose and hard to treat.

It can lead to multiple complications and dysfunction of the wrist.

Conformité aux normes éthiques

Déclaration de conflit d'intérêts

Aucun conflit d'intérêt.

Déclaration d'approbation éthique

Le présent travail de recherche ne contient aucune étude réalisée sur des sujets humains ou animaux par aucun des auteurs.

Déclaration de consentement éclairé

Le consentement éclairé a été obtenu de tous les participants individuels inclus dans l'étude.

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