

**IPSILATERAL BOTH-BONE FOREARM FRACTURE ASSOCIATED WITH TRANS-SCAPHO-LUNATE FRACTURE-DISLOCATION: A RARE OCCUPATIONAL INJURY CASE REPORT**

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**ABSTRACT**

**Background:** Combined both-bone forearm fractures associated with carpal fracture-dislocations are exceptionally rare and usually result from high-energy trauma. Careful assessment of the entire upper limb is mandatory to avoid missed injuries. **Case Presentation:** We report the case of a 42-year-old right-handed male with no significant medical history who sustained a closed injury to the left upper limb following a fall from height during a work-related accident. On admission, the patient was conscious and hemodynamically stable. Clinical examination revealed deformity of the left forearm with complete functional impairment, without signs of compartment syndrome or distal neurovascular deficit. Radiographic evaluation showed a displaced mid-diaphyseal fracture of both bones of the left forearm, associated with a small ulnar fragment, with no involvement of the proximal or distal radioulnar joints. Wrist radiographs demonstrated a trans-scapho-lunate fracture-dislocation with proximal migration of the scaphoid fragment and an associated radial styloid fracture, reflecting the high-energy mechanism of injury. Computed tomography allowed better assessment of the lesions. Surgical management was performed in two stages: open reduction and internal fixation of both forearm bones using plates, followed by reduction of the perilunate dislocation, fixation of the scaphoid fracture, and stabilization with Kirschner wires. **Conclusion:** This case illustrates an exceptional pattern of upper limb trauma caused by a high-energy mechanism, highlighted by proximal migration of the scaphoid fragment. Early diagnosis and prompt surgical management are essential to achieve satisfactory outcomes and prevent long-term complications.

**Highlights**

- Extremely rare association of both-bone forearm fracture and trans-scapho-lunate fracture-dislocation.
- Proximal migration of the scaphoid fragment indicating a high-energy traumatic mechanism.
- Importance of systematic wrist imaging in forearm trauma.
- Favorable immediate postoperative outcome after surgical management.

**KEYWORDS:** Trans-scapho-lunate fracture-dislocation - Rare case report - Complex wrist injury- High-energy trauma - Ipsilateral injuries.

**INTRODUCTION**

Both-bone forearm fractures are common injuries in adults and usually result from high-energy trauma such as falls from height or road traffic accidents. These fractures are often managed surgically to restore forearm anatomy and function. However, their association with

carpal fracture-dislocations remains exceptional and may be overlooked during the initial assessment, especially in the presence of obvious forearm deformity.

Perilunate and trans-scapho-lunate fracture-dislocations are severe wrist injuries caused by high-energy

mechanisms and represent complex patterns of carpal instability. They are frequently associated with delayed diagnosis and poor outcomes if not promptly recognized and adequately treated. The coexistence of a both-bone forearm fracture and a trans-scapho-lunate fracture-dislocation in the same limb is extremely rare, with only a few cases reported in the literature.

We report a rare case of ipsilateral both-bone forearm fracture associated with a trans-scapho-lunate fracture-dislocation, characterized by proximal migration of the scaphoid fragment, reflecting the high-energy kinetics of the trauma. Through this case, we aim to highlight the importance of systematic wrist evaluation in forearm trauma and discuss diagnostic and therapeutic challenges.

### CASE PRESENTATION

A 42-year-old right-handed male with no significant past medical history was admitted to the emergency department following a closed trauma to the left upper limb after a fall from height during a work-related accident. On admission, the patient was conscious, alert, and hemodynamically and respiratorily stable.

Clinical examination (figure 1) revealed a deformity of the left forearm with complete functional impairment of the limb. There were no signs of compartment syndrome, and distal neurovascular examination was normal. No open wounds were noted.

Plain radiographs (figure 2) of the left forearm demonstrated a displaced mid-diaphyseal fracture of both bones of the forearm, with a small detached ulnar fragment, displaced posterolaterally. The proximal and distal radioulnar joints were preserved. Additional wrist radiographs revealed a trans-scapho-lunate fracture-dislocation associated with proximal migration of the scaphoid fragment and a fracture of the radial styloid. These findings suggested a high-energy mechanism of injury. Computed tomography was performed to better characterize the fracture pattern and carpal involvement.

The patient was taken to the operating room for surgical management. A two-stage procedure was performed. First, open reduction and internal fixation of both forearm bones were achieved using plates and screws through standard approaches.

In the second stage, despite the palmar migration of the proximal scaphoid fragment, a **dorsal surgical approach** was chosen to address the carpal injuries. Through careful **external manipulation**, the migrated proximal scaphoid fragment was mobilized and repositioned. Anatomical reduction of the scaphoid was

then achieved and stabilized using **two Kirschner wires**.(figure 3)

Given the associated **ligamentous injury and carpal instability**, additional stabilization was required. The lunate was stabilized with **scapholunate and lunotriquetral Kirschner wires**. Due to persistent instability, a **radiolunotriquetral Kirschner wire** was added to maintain carpal alignment. Finally, **ligament repair** was performed to restore carpal stability.

The immediate postoperative course was uneventful, with no complications reported. The limb was immobilized, and the patient was scheduled for further clinical and radiological follow-up.

### Ethical Statement / Informed Consent

**Ethical Approval and Consent to Participate:** Ethical approval was not required for this study as it is a case report. Written informed consent was obtained from the patient for publication of this case report and accompanying images.

**Consent for Publication:** Written informed consent was obtained from the patient for the publication of this case report and any potentially identifiable data.

**Conflict of Interest:** The authors declare that there is no conflict of interest regarding the publication of this article.

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**Figure 1: Clinical photograph showing deformity of the left forearm at presentation.**



**Figure 2: Anteroposterior and lateral radiographs of the left forearm and wrist demonstrating a displaced both-bone forearm fracture associated with a trans-scapho-lunate fracture-dislocation, with proximal migration of the scaphoid fragment.**



**Figure 3: Postoperative control radiograph showing internal fixation of both forearm bones and reduction of the perilunate dislocation.**

## DISCUSSION

The association of an ipsilateral both-bone forearm fracture with a trans-scapho-lunate fracture-dislocation is exceptionally rare and reflects a high-energy traumatic mechanism. Forearm fractures are frequently encountered in adult trauma practice and are usually isolated injuries, whereas perilunate fracture-dislocations represent severe carpal injuries that occur independently following wrist hyperextension combined with axial loading and ulnar deviation.<sup>[3]</sup> The coexistence of these injuries in the same limb remains uncommon and has been only sporadically reported in the literature.

Perilunate and trans-scapho-lunate fracture-dislocations are well known for their diagnostic difficulty and high rate of missed injuries, particularly in the acute setting.<sup>[2]</sup> Several authors have emphasized the importance of a systematic evaluation of the wrist when assessing patients with forearm fractures, especially in the context of high-energy trauma.<sup>[6]</sup> In the present case, careful

radiographic analysis complemented by computed tomography allowed accurate diagnosis of this complex injury pattern.

The palmar migration of the proximal scaphoid fragment observed in this patient is a distinctive feature, reflecting the high kinetic energy of the trauma. Such displacement is rarely described in the literature and highlights the severity of ligamentous and osseous disruption.<sup>[6]</sup> Although palmar displacement may suggest a volar surgical approach, many authors advocate a dorsal approach for the management of trans-scapho-lunate fracture-dislocations, as it provides excellent exposure of the proximal carpal row and allows direct assessment and repair of the dorsal ligamentous structures.<sup>[2,6]</sup>

In our case, a dorsal approach was deliberately chosen despite the palmar migration of the scaphoid fragment. External manipulation enabled mobilization and anatomical reduction of the displaced fragment without

the need for a volar approach. Fixation of the scaphoid with Kirschner wires was sufficient to achieve stability while limiting additional soft tissue damage. Given the presence of significant ligamentous injury and carpal instability, temporary stabilization using scapholunate, lunotriquetral, and radiolunotriquetral Kirschner wires, followed by ligament repair, was performed. This strategy is widely supported in the literature to restore carpal alignment and prevent chronic instability and degenerative changes.<sup>[7,8]</sup>

Early surgical management is crucial in such complex injury patterns. Stable fixation of both-bone forearm fractures using plates remains the gold standard and allows early mobilization while restoring forearm rotation.<sup>[5]</sup> Similarly, prompt reduction and stabilization of perilunate injuries have been shown to improve functional outcomes and reduce the risk of complications such as nonunion, persistent instability, and post-traumatic arthritis.<sup>[1,4]</sup>

This case highlights the importance of individualized surgical decision-making based on the overall injury pattern rather than fragment displacement alone. It reinforces the need for a high index of suspicion for associated carpal injuries in high-energy forearm trauma and supports a comprehensive diagnostic and therapeutic approach.

## CONCLUSION

This case report describes an exceptionally rare association of an ipsilateral both-bone forearm fracture with a trans-scapho-lunate fracture-dislocation resulting from a high-energy occupational trauma. The proximal palmar migration of the scaphoid fragment reflects the severity of the injury mechanism and represents a distinctive feature of this case. Systematic clinical and radiological assessment of the wrist in forearm trauma is essential to avoid missed diagnoses. Early surgical management combining stable fixation of the forearm fractures, anatomical reduction of the scaphoid, temporary carpal stabilization, and ligament repair is crucial to restore carpal alignment and prevent long-term complications. A tailored surgical strategy, including a dorsal approach despite palmar fragment migration, can lead to favorable early outcomes.

## REFERENCES CORRESPONDANTES

1. Jupiter JB, Leibovic SJ, Ribbans W, Wilk RM. *The posterior Monteggia lesion*. J Orthop Trauma, 1991; 5(4): 395–402.
2. Herzberg G, Comtet JJ, Linscheid RL, Amadio PC, Cooney WP, Stalder J. *Perilunate dislocations and fracture-dislocations: a multicenter study*. J Hand Surg Am, 1993; 18(5): 768–779.
3. Mayfield JK, Johnson RP, Kilcoyne RK. *Carpal dislocations: pathomechanics and progressive perilunar instability*. J Hand Surg Am, 1980; 5(3): 226–241.

4. Rettig ME, Raskin KB. *Long-term assessment of scaphoid fractures and perilunate dislocations*. Hand Clin, 1997; 13(4): 555–571.
5. Anderson LD, Sisk D, Tooms RE, Park WI. *Compression-plate fixation in acute diaphyseal fractures of the radius and ulna*. J Bone Joint Surg Am, 1975; 57(3): 287–297.
6. Herzberg G. *Acute dorsal trans-scaphoid perilunate dislocations: open reduction and internal fixation*. J Hand Surg Am, 1992; 17(3): 522–528.
7. Apergis E, Maris J, Theodoratos G, Pavlakis D, Antoniou N. *Perilunate dislocations and fracture-dislocations. Closed and early open reduction compared in 28 cases*. Acta Orthop Scand Suppl, 1997; 275: 55–59.
8. Garcia-Elias M, Dobyns JH, Cooney WP, Linscheid RL. *Traumatic axial dislocations of the carpus*. J Hand Surg Am, 1989; 14(3): 446–457.