

**PERILUNATE DISLOCATION OF THE IMPURE CARPUS: ASSOCIATION OF AN ANTELUNATE DISLOCATION AND A SCAPHOID FRACTURE AND RADIAL STYLOID****Mouktabis Soufiane\*, M. Akanou, T. Ahuary, A. Negrachi, J. Mekkaoui, M. Boufettal, R. A. Bassir, M. Kharmaz, M. O. Lamrani and M. S. Berrada**

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**ABSTRACT**

Our work consists of study a case Volar perilunate fractures-dislocations of the carpus, treated in the service of Traumatology and orthopaedics of the hospital Avicenne rabat. Volar perilunate dislocations and fractures-dislocations of the carpus are very rare, and interest in most cases the young male victim of a violent trauma. The diagnosis is based on clinical examination and particularly on a standard radiographic wrist with at least 3 implications so as not to underrate the lesion. The therapeutic aim is to obtain a satisfactory and stable reduction, an effective restraint by screwing fractures followed by a passive and active physical therapy; these are the only conditions of a favorable prognosis. The rarity of this lesion entity means that most of the series are of low impact and sometimes with insufficient follow-up, which has not allowed the authors to agree on a therapeutic consensus.

**KEYWORDS:** Our work consists of study a case Volar perilunate fractures-dislocations of the carpus, treated in the service of Traumatology and orthopaedics of the hospital Avicenne rabat.

**INTRODUCTION**

Anterolunate dislocations and dislocations-fractures of the carpus are very rare lesions. They are not well known, and can go unnoticed in 15 to 50% of emergency cases. The importance of these exceptional injuries lies in the severity of the sequelae, which are dominated by chronic wrist instability and, in the long term, by osteoarthritis.<sup>[1]</sup>

We report a clinical case of antelunate dislocation-fracture of the carpus in the department of traumatology and orthopedics of the Ibn Sina University Hospital in Rabat.

**OBSERVATION**

The patient was 21 years old, male, without profession, right-handed and without any notable pathological history. Victim of public road accident with landing on the right wrist in palmar flexion. On admission, the patient was conscious, stable, with significant pain and functional impotence of the right hand and wrist, edema of the right wrist with a cyanotic and cold hand, without associated skin or vascular lesions.

**Radiologically**

Front and side views of the right wrist showed an anterolunate dislocation of the right carpus and fracture of the scaphoid and radial styloid. (Fig 1) A CTscan of the right wrist with reconstruction was requested to better assess the injury.(Fig2)

Emergency surgery was performed with an external fixator, and the patient underwent reduction of the lunate dislocation via a dorsal approach, and reduction of the scaphoid and radial styloid fracture with fixation with two scapho-radial and radial wires. Additional plaster cast immobilization with an intrinsic splint. The pins were removed after two months, followed by rehabilitation of the wrist and hand.

**RESULT**

The patient had no residual pain, his mobility was 40° in flexion, 65° in extension, 20° in radial tilt, 35° in ulnar tilt, 80° in pronation and 70° in supination. Her power take was slightly decreased compared to the healthy side.

**DISCUSSION**

Anterior perilunate dislocations of the carpus are Exceptional lesions, much rarer than their posterior

counterparts. Their frequency would be between 3 and 6% of wrist traumas, and 10% of carpal traumas.<sup>[2,3,4,5]</sup>

generally occur in young adult males following a violent trauma (MVA, fall from a high place), this is the case of our 21 year old patient who was victim of a road accident. The predominance in young subjects can be explained by the violence of the causal trauma and the resistance of the lower extremity of the radius at this age.

The mechanism of occurrence is most often a direct impact on the back of the hand in palmar hyperflexion, where the capitulum would push the lunate backwards.<sup>[3]</sup> This mechanism explains the rarity of anterior perilunate dislocations compared to posterior dislocations which occur in extension, due to the instinctive palmar support during falls.<sup>[6]</sup>

Simple profile views confirm the diagnosis by the loss of bone between the capitate and the lunate and determine the direction of displacement (anterior or posterior). The Herzberg<sup>[7]</sup> radiological classification is the most relevant to date, and is to codify the therapeutic targets and the approach to be used.

Orthopaedic reduction is often insufficient to re-establish intracarpal relationships. Most authors currently advocate surgical treatment<sup>[8]</sup>, the therapeutic goal being to obtain a satisfactory and stable reduction, an effective restraint by screwing the fractures followed by passive and active rehabilitation, the only conditions for a

## ICONOGRAPHY

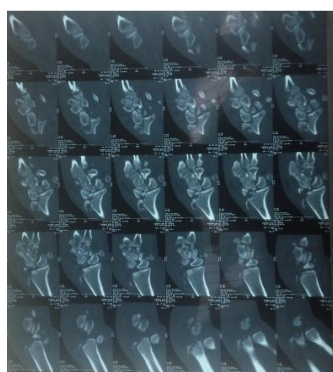


**Fig 1: A.**

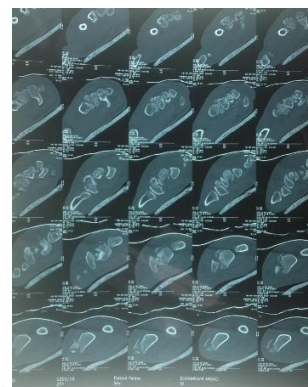


**Fig 1: B.**

**Fig 1 A, B:** Preoperative views of the right wrist from the front and in profile showing an anterolunate dislocation of the right carpus and fracture of the scaphoid and styloid of the right carpus and fracture of the scaphoid and styloid.



**Fig 2-A.**



**Fig 2-B.**

favorable prognosis. In the late stage, resection of the first row of the carpus is an alternative.<sup>[9,10]</sup>

The prognosis of anterolunate dislocations and fractures of the carpus is generally favorable, whatever the orthopedic or surgical treatment, provided that the diagnosis is made urgently, the dislocation is reduced and effective restraint is provided.<sup>[11]</sup>

The literature review shows that the poor prognostic factors are related to the presence of a skin opening according to Herzberg<sup>[7]</sup>, a delay in diagnosis and therefore in treatment<sup>[12,13]</sup>, the presence of a non-ossified scaphoid fracture<sup>[14]</sup>, posterior enucleation of the lunate with rupture of its two brakes, which is a source of necrosis of this bone according to Goiaed<sup>[15]</sup>, and the presence of lunocapital subluxation, which is a predisposing factor for the injury.<sup>[16]</sup>

## CONCLUSION

Anterior perilunate dislocations of the carpus are very rare but serious lesions that are often poorly understood, especially in terms of treatment, the modalities of which, whether orthopedic or surgical, are controversial.

The prognosis of this injury is generally favorable provided that the diagnosis is made urgently, the dislocation is reduced and effective restraint is provided, with appropriate rehabilitation.



Fig –C.

Fig 2 A, B, C: CT scan with reconstruction of the right wrist showing an anterolunate dislocation of the right carpus and fracture of the scaphoid and radial styloid fracture.

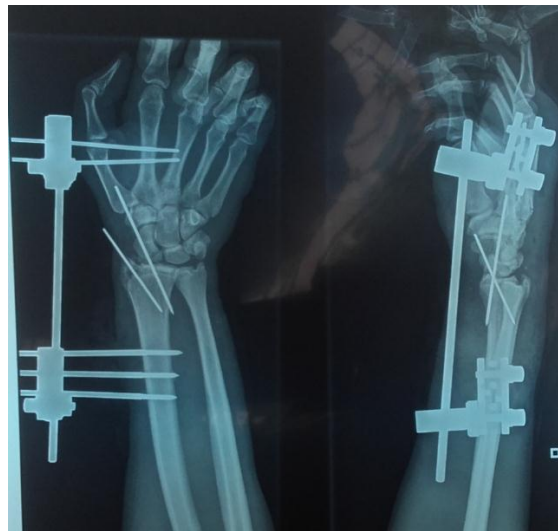


Fig. 4: Post-operative views of the right wrist after reduction of the dislocation and embrochage.

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