

Isolated Dislocation of the Carpal Scaphoid: An Exceptional Case Report

Issa Fathi*, El mehdi Ouissaden, Ahmed El Bardouni, Mustapha Mahfoud, ET Mohamed Saleh Berrada

Department of Orthopedic Surgery, Ibn Sina Hospital, University Mohamed V, Rabat, Morocco

DOI: [10.36347/sjams.2019.v07i08.046](https://doi.org/10.36347/sjams.2019.v07i08.046)

| Received: 15.08.2019 | Accepted: 26.08.2019 | Published: 30.08.2019

*Corresponding author: Issa Fathi

Abstract

Case Report

Isolated dislocation of the carpal scaphoid is a rare and exceptional carpal lesion. We report a case of radiopalmary dislocation isolated from the scaphoid, diagnosed on clinical and radiological elements. The treatment consisted of posterior open reduction and fixation with two Kirschner pins under image intensifier control with plaster immobilization for 45 days. The evolution, at 2 years of decline, is favorable with a total recovery of the function of the wrist.

Keywords: Carpal scaphoid, luxation.

Copyright © 2019: This is an open-access article distributed under the terms of the Creative Commons Attribution license which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use (NonCommercial, or CC-BY-NC) provided the original author and source are credited.

INTRODUCTION

Luxation of the lunate represents the most frequent dislocation of carp bones. Isolated dislocation of the carpal scaphoid remains an exceptional lesion of the carp whose context is often traumatic. The review of the literature confirms this rarity: only 13 cases published since 1930 [1-13]. The diagnosis as well as the treatment must be urgent. The treatment is mostly surgical based on several criteria. The prognosis depends on the delay of the therapeutic management, and the quality of the reduction but remains generally good. We report the case of a simple isolated carpal scaphoid dislocation and not associated with other carpal lesions.

Case Report

This is a 50-year-old right-handed patient with no notable pathological history; victim of a road accident: collision of two motorcyclists causing a closed trauma of the left wrist. The Clinical examination found a painful and tumefied wrist with a vicious attitude of blocked cubital inclination, as well as a total functional impotence and protrusion of the scaphoid relief in front of and outside the radial styloid. Neurological and vascular examination was normal. The radiological examination (Fig-1) shows a dislocation of the scaphoid, the proximal pole is placed outside the radial styloid. On the profile we note an antero-external displacement and verticalisation of the

scaphoid without displacement or fracture of the other bones of the carp with respect of the ulnar styloid.

The patient was admitted to the operating room in emergency (2 hours after admission) and benefited from an open reduction under locoregional anesthesia with a traction maneuver in the axis of the 3rd finger and direct pressure on the scaphoid with extension of the thumb and ulnar inclination. The reduction was maintained by two Kirschner pins: a scapholunate and a scapho-capital under image intensifier control (Fig-3). Subsequently the scapholunate ligament was sutured by PDS wire (Fig-2). The immobilization was ensured by plaster taking the arm, the forearm and the hand for 45 days, followed by a reeducation of 3 months. The removal of the pins was done at the 4th month. After a 2 years recoil, the wrist is painless with complete recovery of the articular amplitudes (Fig-4). Control radiographs show demineralisation of the wrist without signs of scaphol necrosis. The follow-up does not find any instability of the wrist (Fig-5):

- Flexion about 80 degrees
- Extension to around 70 degrees
- Adduction to 40 degrees
- Abduction at around 20 degrees
- Pronation and supination are equal.

The patient returns to his activity and is satisfied with the result.



Fig-1: Facial and lateral radiographs showing isolated antero-external dislocation of carpal scaphoide



Fig-2: Scapholunate ligament tracing postero-externally



Fig-3: Control under image intensifier and fixation by two pins



Fig-4: Radiological control after the removal of the pins



Fig-5: The articular amplitudes of the wrist after 2 years

DISCUSSION

As in our case, these dislocations occur on a closed wrist, the sudden hyperextension and ulnar deviation causes the rupture of the scapoidal and scapholunate ligament, the scaphoid is then ejected in radial and palmar direction [14].

The knowledge of the anatomical and biomechanical properties of the peri-scaphoid ligaments is essential to understand the mechanism of dislocation: stabilization of the proximal pole is ensured by the scapholunate ligament, scapholunate ligament and radioscapholunate ligaments. On the other hand, the trapezio-scaphoidal and scaphocapital ligaments are stabilizers of the inferior pole [15].

Indeed the reductibility as well as the stability of the carp depend on the importance of the ligamentous lesions. Therefore, the treatment of these dislocations of carp can be either by reduction and plaster for 6 weeks or by reduction and fixation in the open by a generally posterior approach.

After reduction, the persistence of a scapholunate diastasis greater than 2 mm is most likely in favor of ligamentous interposition. The operative indication is therefore posed. If the diastasis is less than 2 mm plus a carp that is stable, the treatment conservative would be sufficient and give good results.

The reduction of scapholunate diastasis and misalignment of scapholunar angulation remains difficult. Mayfield *et al.* describe this difficulty, so to close the scapholunar angle, a radial space is required and to obtain a correct scapholunar angulation an ulnar deviation is regularly required. Szabo, Andre, and Amamilo advocate scapholunar and scaphocapital percutaneous scribing after reduction [16, 17]. Horton *et al.* found that reconstruction of the scapholunate ligament provides an excellent anatomical and functional result. In case of failure we use capsulodesis and tenodesis. Arthroscopy of the wrist allows evaluation of individual ligaments and operative modalities [18]. Delayed diagnosis increases the likelihood of open reduction and affects the final outcome, due to stiffness and wrist arthritis. According to HIGGS the reduction must be open if the diagnosis is made after 6 weeks. On the other hand, for Walker, open reduction is necessary after 5 days or in cases of non-reducible dislocation [19].

CONCLUSION

Isolated dislocation of scaphoide remains a rare lesion that requires early diagnosis and management alone to ensure a satisfactory functional outcome. Treatment depends on the severity of underlying ligamentous lesions.

Contributions of the Authors

All authors have read and approved the final version of the manuscript

REFERENCES

1. LEE WE. Isolated radial dislocation of carpal scaphoid. *Annals of Surgery*. 1934 Sep 1;100(3):553-4.
2. Connell MC, Dyson RP. Dislocation of the carpal scaphoid: report of a case. *The Journal of bone and joint surgery*. British volume. 1955 May;37(2):252-3.
3. Fishman MC, Dalinka MK, Osterman L. Case report 309. *Skeletal radiology*. 1985 Mar 1;13(3):245-7.
4. Horton T, Shin AY, Cooney III WP. Isolated scaphoid dislocation associated with axial carpal dissociation: an unusual injury report. *The Journal of hand surgery*. 2004 Nov 1;29(6):1102-8.
5. Inoue G, Maeda N. Isolated dorsal dislocation of the scaphoid. *Journal of Hand Surgery*. 1990 Jun;15(3):368-9.
6. Leung YF, Wai YL, Kam WL, Ip PS. Solitary dislocation of the scaphoid: from case report to literature review. *Journal of Hand Surgery*. 1998 Feb;23(1):88-92.
7. Maki NJ, Chuinard RG, d'Ambrosia R. Isolated, complete radial dislocation of the scaphoid. A case report and review of the literature. *JBJS*. 1982 Apr 1;64(4):615-6.
8. Milankov M, Somer T, Jovanovic A, Brankov M. Isolated dislocation of the carpal scaphoid: two case reports. *Journal of Trauma and Acute Care Surgery*. 1994 May 1;36(5):752-4.
9. Murakami Y. Dislocation of the carpal scaphoid. *Hand*. 1977 Feb(1):79-81.
10. Richards RS, Bennett JD, Roth JH. Scaphoid dislocation with radial-axial carpal disruption. *AJR*. *American journal of roentgenology*. 1993 May;160(5):1075-6.
11. Ritchie DA, Gibson PH. Isolated dislocation of the scaphoid. *Injury*. 1988 Nov 1;19(6):405-6.
12. Sides D, Laorr A, Greenspan A. Carpal scaphoid: radiographic pattern of dislocation. *Radiology*. 1995 Apr;195(1):215-6.
13. Walker GBW. Dislocation of the carpal scaphoid reduced by open reduction. *Br J Surgery*. 1943; 30: 380-381.
14. Higgs SL. Two cases of dislocation of carpal scaphoid. *Proc Roy Soc Med*. 1930;23:1337-9.
15. Mayfield JK, Johnson RP, Kilcoyne RF. The ligaments of the human wrist and their functional significance. *The Anatomical Record*. 1976 Nov;186(3):417-28.
16. Szabo RM, Newland CC, Johnson PG, Steinberg DR, Tortosa R. Spectrum of injury and treatment options for isolated dislocation of the scaphoid. A report of three cases. *JBJS*. 1995 Apr 1;77(4):608-15.
17. Andre S, De Chauvin PF, Candau B, Tomeno B. Luxation radio-dorsale du scaphoide. A propos d'un cas. *Rev Chir Orthop*. 1981;67(5):577-80.
18. Amamilo SC, Uppal R, Samuel AW. Isolated dislocation of carpal scaphoid. *Journal of Hand Surgery*. 1985 Oct;10(3):385-8.
19. Takami H, Takahashi S, Ando M. Dislocation of the carpal scaphoid associated with median nerve compression: case report. *The Journal of trauma*. 1992 Dec;33(6):921-3.