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Dorsal lunate fracture-dislocations of the carpus (About 14 cases)

Al Rachini A, Lamzaf O, Lamrani MO, Bardouni A, Berrada MS, El Yaacoubi M
Ministry of Health, AVICENNE Hospital, Morocco.

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ABSTRACT

Our work is a retrospective study of 14 cases of dorsal lunate fracture-dislocations of the carpus, listed in the service of traumatology and orthopedics of the Ibn Sina Hospital between 2010 and 2014. The back lunar dislocation of the carpus , the most common intra-carpal dislocations, interest in most cases of adult male youth, and whose injury was caused in half the time by accident from the public highway.The diagnosis is only radiological because the clinic can not be evocative.Surgical treatment was recommended at the outset in all cases. The dorsal approach was performed in 10 cases, and the volvar approach was used earlier in one case. Patients were reviewed at a mean of 30 months for clinical evaluation of functional results according to the score of Allieu and Witvoet. The results were satisfactory in all cases reviewed, and only three were lost to view. In conclusion and in light of a literature review, we believe that surgery alone provides a satisfactory reduction and repairs bone and ligament injuries, the only guarantee of a favorable outcome to avoid the long term most serious complication: osteoarthritis of the wrist.

Introduction

Dislocations peri-lunar show only isolated ligament injuries. Fracture-dislocations are often trans-scaphoid-retro-lunar fracture dislocations. This disease involves multiple ligament and / or bone complex lesions.

The natural history of the disease is a patient who presents with edema and with a sore wrist after a fall on the palm of the hand. Apart from pain, the clinical signs are frustrated. This is why, this lesion may go unnoticed in the absence of radiographs of good quality and good performance by a qualified doctor. scarcity of this lesion entity that most series are sparse and sometimes with inadequate monitoring which did not allow the authors to give a therapeutic consensus.

This paper reports a series of 14 cases of retro-lunar dislocations that were collected in the trauma unit of Ibn Sina Hospital in Rabat, over a period of 4 years, with a decline from 6 months to 4 years.

Material and methods

Our work consists in retrospective study concerning 14 cases of retro-lunar dislocation of the carpus, treated in orthopedicand trauma service of Ibn Sina Hospital in Rabat, we were able to collect on a 4-year period from 2010 to 2014 with a decline of 6 months to 4 years.

Among these 14 cases, 11 were reviewed. The comparison of our series with other studies in the literature allows a more objective evaluation of the results at different levels: epidemiological, clinical, paraclinical, therapeutic.

Results

Age is the prerogative of the young adults, the average age of our series is around 26 years.

In our series, 9 cases were male and 2 female cases. Three causes were found for these retro-lunar carpal dislocations: 9 cases of fall, all on hand in hyperextension. One accident of the highway. 1 case of sports injuries.

We find that the lesion was left in 5 cases, right in 5 cases and bilateral in one case.

In our series, 10 cases were diagnosed initially, and there was one case of fracture dislocation overlooked.

In our study, surgical treatment seems to be by far the best for peri-lunar dislocation of the carpus, it was recommended immediately for all cases. The dorsal incision was used in 10 cases, and the anterior was recommended in only 1 case. Monitoring in our patients did not reveal any specific effects.

Discussion

The age of our patients is around 26 years, which agrees well with the data from the international literature.

The predominance in young adults can be explained by the conditions of injury: falls, traffic accidents, sports injuries and the strength of the distal radius at this age.

During trauma, the maximum stress is absorbed by the carp, and there be a maximum of capsular ligament and bone damage at this level. While in the relatively elderly (beyond fifty), the wrist injuries, performs more readily fractures of the lower end of the radius, which is less resistant because of osteoporosis. It is the same in the child, which has first and foremost, fracture-separation of the lower end or the distal quarter of the forearm, in this case the ligaments are much stronger than bone.

The majority of studies show that peri-lunar dislocation of the carpus usually affect the young man. This is the case in our series.

In our series, the fall is the most common of these dislocations cause, this is correlated with data from the literature. Although the right side is instinctively thrown forward into fall. There were no predominance of the injured side in numerous studies. But in our series, there is the achievement of the left side in 5 cases, and 5 cases for the right side and only 1 bilateral involvement.

The lesion most commonly associated with dislocation-peri-lunar carpal scaphoid fracture is, it is found in August 1 case in our series, but other lesions may be seen as the fracture of the lower end of radius ,radial head fracture external cunéenne, and

Tele:
E-mail addresses: ali_rach@hotmail.com

metacarpophalangeal joint dislocation. The diagnosis of peri-lunar dislocation is only radiation, but the pictures are also often difficult to interpret. This explains the frequency of lesions initially unknown.

The goal of treatment is to maintain the normal functions of the wrist. Ie, good grip strength of the hand and a good arc of flexion-extension, with normal mobility of the fingers. (Fig.1)

Fig 1. Radiography showing a translunate fracture-dislocation of the right wrist

Surgical treatment seems to be, in our series, the most suitable for peri-lunar dislocation of the carpus.

The single dorsal approach was used in 10 cases, allowing the reduction midcarpal, the anterior approach in one case. (Fig. 2) [16-20]

Fig 2. Radiography showing the fracture-dislocation after surgery

In our study, all patients had a good outcome also we analyzed our series with a decline from 06 months to 04 years, while some effects appear only after several years of trauma. We also note the presence of 03 cases not reviewed. [21-23]

International studies have shown that neither the presence of associated fractures, neither age nor the mechanism or injured side are significantly determining the prognosis of these lesions. For cons, the latch of the lunate (above 90 °), the appearance of necrosis of the lunate, and especially the time between the accident and the reduction of the dislocation, play an important role in determining the outcome .

It is also evident that the reduction it is bloody or closed, is a factor, an important state, knowing that most international studies emphasize the importance of open reduction.

The opinions of the various authors differ regarding the factors determining the prognosis of LPLC. This can be explained by the lack of recoil and limited series. [24-27]

Statistical point of view, we were able to clarify some elements influencing prognosis knowing that other factors in individual cases may give bad results.

Conclusion

Retro-lunar carpal dislocations are the most common intercarpal dislocations. They are a serious wrist injury occurring most often in young adults with one hand hyperextension and ulnar deviation. The intracarpal supination is the determinant of capsular ligament injuries to the posterior dislocation.

The diagnosis is mainly based on plain radiographs of the wrist front and especially strict profile.

The scaphoid fractures are common compared to other associated lesions. Retro-lunar dislocation and trans-scaphoid-retro-lunar poorly or untreated, progress to osteoarthritis after carpal instability or nonunion of the scaphoid.

Early diagnosis and anatomical reduction retro-lunar dislocation seem the best guarantee of a favorable outcome.

Closed reduction usually leaves persisting imperfections that only surgery can correct, while ensuring a good stabilization and possibly scaphoid pining.

Bibliography

[1] **WATSON H., OTTONI L., PÏTTS E.C., HAND AL A.G.** Rotary subluxation of the scaphoïd : a spectrum of instability . J Hand Surg (Br), 1993, 18(B), 1: 62-64.

[2] **MATHOULIN C., SAFFAR P., ROUKOZ S.** Les instabilités luno-triquétrales. Ann chir Main et Mb Sup., 1990,9, 1:22-28.

[3] **R INO D.E., PALMER A.K., LEVINSOHN E.M.** The rôle of radiology in the diagnosis of subluxation and dislocation of the distal radio-ulnar joint. J surg (Am)., 1993, 18(B),6: 725-729

[4] **SCHIUND F.A., ALEMZADEH S., ST ALLENBERG B., BURNY F.** Le poignet normal contro-latéral constitue-t-il la meilleure référence pour les mesures radiologiques du poignet pathogique ? Communication, 30°congrés de la S.F.C.M (GEM)Paris, 7-10 décembre 94.

[5] **COTT.H, KOZIN. MD** Perilunate Injuries: Diagnosis and treatment American academy of orthop.surgeon, 1998, March/April.vol :6, n°2.

[6] **SUCJ, CHANG.MC, LIU. Y, LO.WH .** Lunate and perilunate dislocation. Chung Hua. 1. Hsueh Tsa Chih (Taipei) 1996 nov., 58(5) : 348-54.

[7] **NOUE. G, IMAEDA. T** Management of trans-scaphoid perilunate dislocations. Herbert screw Fixation, ligamentous repair and early wrist mobilization. Arch. Ollhop. Trauma. Surg. 1997; 116(6-7) : 338-40

[8] **ERZBERG.G** Les luxations périlunaires du carpe. Enseignement de la chirurgie de la main, 1996, vol 8, 1-14.

[9] **PERGIS.E, MARIS.J, THEO DORA TOS.G, PAVLAKIS.D, ANTON iOl.N** Perilunate dislocations and fracture-dislocations. Closed and early open réduction compared in 28 cases. (Acta orthop. Scand. Suppl. 1997, oct; 275 :55-9.

[10] **BARROS. JW, OLIVEIRA. DJ, FERNANDES. CD** Bilatéral transscapholunate dislocations. J Hand. Surg. (Br), 1997 Api; 22(2) : 169-72.

[11] **KEVIN A.HILDEBRAND, PATTERSON. SD, ROTH.JH** Dorsal perilunate fracture-dislocations: Multidisciplinary évaluation. ASSH. Meeting. 1999.

[12] **VOGELE. T, WOZASEK. GE, GOHR1TZ. A, VECSEI. V** Conservative versus surgi cal therapy of perilunar dislocation and dislocation fractures .p Handchir.Mikrochir.Plast.Chir. 1999, Jul ; 31(4) : 248-52.

[13] **MELONE CP. Jr, MURPHY. MS, RASKIN. KB** Perilunate injuries. Repair by dual dorsal and volar approaches. Hand.clin. 2000, Aug, 16(3) : 439-48.

[14] **SOTEREANOS. DG, MITSIONIS. GJ, TOMAINO. MM ,**Perilunate dislocation and fracture dislocation: a critical analysis of the volar-dorsal approach.

J. Hand. Surg. (Am), 1997 ;jan :22(1) : 49-56.

[15] **INOUE.G, SHIONOY A.K**

Late treatment of unreduced perilunate dislocations. Journal of Hand SUl'gery (British and European Volume, 1999) L 24B n02, 221-225.

[16] **lACOUR.C, DE PERETTI.F, BARRAUD.O, GIBOIN.P, PEQUIGNOT.J.P, ARGENSON.C.**

Luxations périlunaires du carpe. Intérêt du traitement chirurgical. Revue de chirurgie orthopédique, 1993,79,114-123.

[17] **FIKRY.T, LAMINE.A, I-IARFAOU1.A, DKHISSLM, ESSADKI.B, ZRYOXJIL.B, TRAFEH.M**

Luxations périlunaires du carpe. Etude clinique (à propos de 39cas) Acta Orthopaedica Belgica, vol 59,3, 1993

[18] **LUKASIEWICZ.M, VOCHE.Ph, DUPUY.M, DAUTEL.G, MERLE. M**

Luxations et fractures luxations périlunaires du carpe. : Conduite thérapeutique d'après une série de 16 cas. SO.F.C.O.T. 68eme Réunion annuelle, 1993, 159-160

[19] **GHAZALÏ.M**

Les luxations rétro-lunaires du carpe (A propos de 2 cas). Thèse de médecine, Rabat, n072, 1996.

[20] **INOUE.G, KUWAHATA.Y**

Management of acute perilunate dislocations without fracture of the scaphoid. Journal of Hand Surgery (British and European Volume, 1997) 22B, n°5, 647-652.

[21] **ALLIEU.Y et BENICHOU.M**

Séquelles des traumatismes du carpe. EMC. (paris), 14046 FIO, 4-1989.

[22] **SAFFARP.**

Dislocations of the carpal bones. Rev Part 1994 Nov 15; 44 (18): 2442-5.

*[23]**WI* **TVOET *J* ., ALLIEU *Y.***

Lésions traumatiques fraîches du semi-lunaire. Rev Chir Orthop 1973,59 suppl.l: 98-125

[24] **FIKRY T., LAMINE A., HA RFA OU A., DKHISSI M., ESSAKI B., ZRYOUIL B., TRAFEH M.**

Crapal perilunar dislocation, Clinical study (a propos of 3 cases). Acta Orthop Belg 1993;59 (3) :293-300.

[25] **INOUE G., SHIONOYA K.**

Late treatement of unreduced perilunate dislocations. J.Hand Surg (Br) 1999 Apr. 24 (2) :221-5.

[26] **HAZALÏ.M**

Les luxations rétro-lunaires du carpe (A propos de 2 cas). Thèse de médecine, Rabat, n072, 1996.

[27] **INOUE.G, KUWAHATA.Y**

Management of acute perilunate dislocations without fracture of the scaphoid.

Journal of Hand SUl'gery (British and European Volume, 1997) 22B, n°5, 647-652.