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CE Lkassimi

Anatomy Laboratory, Faculty of Medicine, Hassan 2 University, Casablanca, Morocco

S Rouadi

Anatomy Laboratory, Faculty of Medicine, Hassan 2 University, Casablanca, Morocco

M Fadili

Anatomy Laboratory, Faculty of Medicine, Hassan 2 University, Casablanca, Morocco

A Rajaalah

Department of Orthopedics P32, Hassan 2 Casablanca University, Morocco

O Bensitel

Department of Orthopedics P32, Hassan 2 Casablanca University, Morocco

K Jebbouri

Department of Orthopedics P32, Hassan 2 Casablanca University, Morocco

A Rafaoui

Department of Orthopedics P32, Hassan 2 Casablanca University, Morocco

A Messoudi

Department of Orthopedics P32, Hassan 2 Casablanca University, Morocco

M Rahmi

Department of Orthopedics P32, Hassan 2 Casablanca University, Morocco

M Rafai

Department of Orthopedics P32, Hassan 2 Casablanca University, Morocco

Corresponding Author:

CE Lkassimi

Anatomy Laboratory, Faculty of Medicine, Hassan 2 University, Casablanca, Morocco

Carpometacarpal dislocation of the 4th and 5th finger

A Rajaalah, O Bensitel, K Jebbouri, A Rafaoui, A Messoudi, M Rahmi, M Rafai, C Elkassimi, S Rouadi and M Fadili

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Abstract

Carpometacarpal dislocations are a rare lesion, we report a case of palmar carpo-metacarpal dislocation of the fourth and fifth finger, treated urgently by reduction and stabilization with closed-focus pinning. Post-operative immobilization with an intrinsic splint was performed for six weeks, with rehabilitation starting in the fourth week. Functional outcome was satisfactory.

Keywords: Dislocation, carpo-metacarpal, pinning

Introduction

Carpometacarpal dislocations of the thumbs are uncommon injuries. The first case was reported by Rivington in 1873 ^[1].

Treatment consists of the reduction of the dislocation then stabilization with pins in case of an unstable lesion and additional plaster cast immobilization.

Patient and observation

A 25-year-old patient, worker, right-handed, was admitted to the emergency room following a 2-m fall with landing on the ulnar edge of the right hand causing a closed trauma of the hand with pain and functional impotence.

Clinical exam revealed edema and deformity of the palmar aspect of the right hand (Figure 1). Radiographies (Figure 2) revealed a dorsal carpo-metacarpal dislocation of the 4th and 5th fingers, associated with a fracture of the base of the 4th metacarpal.

Our patient underwent emergency surgery under local anesthesia. Closed reduction was done successfully and then a synthesis using pins (Figure 3)

A wrist immobilization in the intrinsic plus position for 6 weeks, after which the pins were removed. Active rehabilitation of the fingers was started in the fourth postoperative week. At 10 months, the outcome was satisfying with satisfactory muscle strength and full recovery of the mobility of the wrist.



Fig 1: Aspect of the hand showing significant edema and deformity of the 4th and 5th fingers



Fig 2: The radiographies revealed a dorsal carpo-metacarpal dislocation of the 4th and 5th fingers with a fracture of the base of the 4th metacarpal



Fig 3: Postoperative radiograph of the right hand after osteosynthesis of the associated dislocation and fracture by pinning

Discussion

The carpo-metacarpal joint is a stable joint [2, 3] and the authors agree on the high force required to break the joint cavity [4].

Carpometacarpal dislocation of the fingers is therefore a very unusual injury. It occurs in young adults. Violent traumas such as road traffic accidents are the main culprits. Nevertheless, weaker traumas like punches, suggest a dislocation of the mobile metacarpals [5].

This type of lesion should be diagnosed as an emergency on a X-ray of the hand and wrist in strict profile. The outcome is good, though the interpretation of X-rays is sometimes complicated. It is necessary to make a profile X-ray showing the displacement of the metacarpal bases

In addition, some authors have recommended a follow-up CT study [2]. Percutaneous pinning after reduction is a successful treatment when there is no vascular or nerve compression. Pinning of the carpo-metacarpal spaces can be oblique, intramedullary or transverse [5]. The outcome of these carpo-metacarpal injuries treated in emergency is positive and causes few sequels [6-8].

A number of complications have been described in the literature, such as persistent hand pain, decreased grip strength, subluxations, and secondary displacement [9].

Conclusion

A large number of carpo-metacarpal dislocations go undiagnosed, either due to poor clinical examination or because they are part of a polytrauma. They are often concomitant with fractures of the carpal bones. If they are treated urgently and correctly, their prognosis is good.

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