Isolated dislocation of the Fifth Carpometacarpal Joint: A Case Report.

Saddam Mazar,[1] Pir Zarak Khan,[2] Anisuddin Bhatti.[3]

[1]Orthopedic Resident Trainee Consultants Department of Orthopedics & Spine Surgery Dr. Ziauddin Hospital, Karachi.
[2]Intern / House Officer Department of Orthopedics & Spine Surgery Dr. Ziauddin Hospital, Karachi.
[3]Consultant, Surgeon Orthopedics, Department of Orthopedics & Spine Surgery Dr. Ziauddin Hospital, Karachi

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Corresponding author:
Saddam Mazar
E-mail: drmazar@gmail.com

ABSTRACT

Isolated Carpometacarpal (CMC) joints dislocations is an extremely uncommon injury. It is often missed in polytrauma patient. It can be associated with ulnar nerve damage and detailed neurologic assessment is often warranted to avoid long term deficit. Early closed reduction usually leads to a good outcome. This case report describes an uncommon dorsal dislocation of the fifth Carpometacarpal joint in 33-year-old man. It was reduced under local anesthesia and stabilized in an ulnar gutter splint. Post-reduction radiographs revealed satisfactory reduction and alignment. At 4 weeks and subsequent follow-up reduction was stable without sensory loss and gradually regaining good range of motion till last follow-up at 6 months.

Keywords: Carpometacarpal, Closed Reduction, Dislocation, Hand injury.

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INTRODUCTION

Isolated carpometacarpal (CMC) joints dislocations are rare injuries occurring in less than 1% of hand injuries usually following a high-energy trauma.[1,2] The acute hyperextension of CMC causing dislocation may also cause ulnar nerve damage due to its very close proximity. A high index of suspicion to exclude nerve injury is always warranted.[1]The patho-anatomic lesion with interposition of the torn of palmer capsule and ligaments warrants an early reduction. The late identification over 2 to 3 weeks usually needs an open reduction. The CMC dorsal dislocation is little more common than isolated volar dislocations.[2]

CASE PRESENTATION

A 33 year-old male, right hand dominant fall on outstretched right hand following his motor-bike accident. He was having severe pain and was unable to move his fifth finger and feeling numbness in fingers. There was swelling and gross tenderness along dorsal aspect of hypothenar eminence. Little finger was found in internal rotation & ulnar deviation. There was an abrasion in the flexor zone II of the right fifth finger. However the vascularity of the finger was normal except some numbness in finger. The radiographic examination revealed an isolated dorso-medial dislocation of the fifth metacarpal over carpal bone.(fig I) The fifth carpo-metacarpal dislocation was reduced under local anaesthesia and intravenous sedation. Dislocation was reduced with a maneuver of applying traction longitudinally and volarly directed force to the base of the fifth metacarpal while maintaining rotational alignment of the fifth digit towards normal. The reduction was maintained with an ulnar gutter splint. Post-reduction radiographs revealed an acceptable alignment of carpo-metacarpal joint surfaces.(Fig II) Following 6 weeks of immobilization and subsequent follow-up till 6 months, he was pain free and having stable joint and with full range of motion.

Figure I: Radiographs of right hand showing Capitate-metacarpal dislocation.

Fig II: Post-reduction radiograph of right hand showing stable reduction.

DISCUSSION

The CMC joint injuries represent 1 % of overall hand and wrist injuries and the incidence of CMC joint Posterior dislocation are reported as more than anterior.[3-5] These dislocations of CMC joints usually occur with high velocity trauma and often in poly trauma cases and due to a direct impact on the ulnar and dorsal aspects of the wrist.[1,5] In poly trauma cases this injury may be missed or misdiagnosed due to boggy swelling and overlapping bones which appear on radiographs.[2]

We could diagnose this injury with high index of suspicion due to pain, oedema, a bump around the joint and visible shortening of 5th metacarpal. That can been termed as "Muafi" hand posture test (clapping hand Position). A true AP, lateral and oblique radiographic view can confirm the diagnosis. This injury can be initially missed by junior team member due to improper view of X-rays. The radiographic signs include apparent shortening of metacarpals and loss of parallelism between CMC joints.4 In doubt of associated fractures of carpal bones or dislocations a computed tomography scan (CT) helps a lot. In such position of associated fractures, the open reduction is often advisable.[6-8]

Open reduction and internal fixation and closed reduction and percutaneous pinning have been common methods of treatment. Few examples of closed reduction with splint immobilization have also been reported.[4] Our case represents one of those conservatively treated with good outcomes as reported in literature.[7,8] We observed satisfactory outcome at 6 months follow-up of 5th CMC dorsal-ward dislocation with closed reduction. Hani[8] compared 5th CMC joint fracture-dislocation treated closed versus open reduction; with closed reduction having a larger probability of CMC joint re-dislocation. The recurrent dislocation has also been reported during follow-up within the first 10 days and closed reduction and percutaneous fixation has been advised in such cases.

The neglected or imprecise alignment of CMC dislocation after treatment can lead to a chronic dislocation with complicated regional pain syndrome, post traumatic arthrosis, median nerve dysfunction, carpal instability and tendon issues.[7,8]

CONCLUSION

Isolated 5th CMC joint dislocation is a relatively unusual injury that is often missed in the emergency room particularly in poly trauma cases. Early closed reduction usually results in good outcome. However, in unstable injury pattern percutaneous K-wire fixation is a recommended method to achieve pain free supple joint.

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