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Case Report

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Isolated ulnopalmar dislocation of 5th carpometacarpal joint: a rare case report

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ABSTRACT

Isolated volar dislocations of the fifth carpometacarpal joints are an uncommon injury. They are classified as ulnopalmar or radiopalmar dislocations. It can be easily missed on standard radiographs. A high degree of suspicion and accurate reduction is pivotal in restoring the functional outcome of the hand. In our case report, a forty year old man presented with ulnopalmar dislocation of the fifth carpometacarpal joint and was treated with open reduction and K wiring. We review the literature and discuss the available methods of management.

Keywords: Carpometacarpal dislocation, Open reduction, K wiring

INTRODUCTION

Isolated dislocation of the carpometacarpal (CMC) joints is generally caused by high velocity injuries. It is sometimes associated with damage to neurovascular structures. Isolated dislocation of the 5th CMC joint is a rare injury. A high degree of suspicion is required along with careful examination for injury of the ulnar nerve.[1] We present a case of an ulnopalmar dislocation of the fifth CMC joint and its management. The patient provided written informed consent for print and electronic publication of this case report. The mechanism of this injury, clinical presentation, and treatment options are discussed, with a review of the literature.

CASE REPORT

A 40 years old man presented to the outpatient department (OPD) with history of fall from bike three days back, complaining of pain in the left hand. On examination there was swelling of the dorsum of the hand (Figure 1), with tenderness around the base of the fifth digit and restricted movements of the fingers. On examination, the ulnar nerve was found to be intact.

Figure 1: Clinical photo of left hand at presentation in outpatient department.

Radiographs of the hand, AP and oblique view (Figure 2) revealed an ulnopalmar dislocation of the fifth CMC. Closed reduction was attempted with traction and manipulation in the minor OT and an ulnar gutter slab was applied and post reduction computed tomography (CT) scan was done (Figure 3).

Figure 2: Pre op x-ray hand oblique and anteroposterior (AP) view.

Figure 3: CT images of the hand with 3D reconstruction, showing ulnopalmar dislocation of the 5th CMC.

CT imaging revealed that closed reduction had failed and hence decision was taken for open reduction and Kirshner wire fixation.

Figure 4: Intra operative photo showing dorsal incision.

Under axillary block, a dorsal approach was taken and the joint was exposed (Figure 4). Volarly displaced metacarpal was seen and reduction was done. Two K wires were used, one K wire passed from base of 5th metacarpal to the hamate and the other K wire from base of 5th metacarpal to 4th metacarpal.

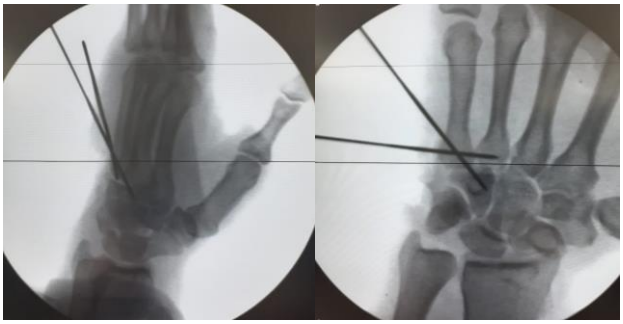

Figure 5: Intra operative C arm images.

Post-operative period was uneventful, x-rays were done and patient was discharged with an ulnar gutter slab.

Figure 6: Post-operative x-ray of hand, AP and oblique view.

Follow up at 3 weeks: K wires were removed and physiotherapy for mobilization was initiated.

At 6 weeks follow up, patient had good range of motion of digits, with minimal pain and resumed his work.

Figure 7: Six week follow up x-rays.

DISCUSSION

Isolated fifth carpometacarpal dislocation is a relatively rare injury, first reported in 1918 by McWhorter et al.[2] Case reports have suggested that this particular injury is easily missed and requires a high degree of suspicion. They are classified as dorsal and volar dislocations. Dorsal

dislocations are more common and are usually seen in the 4th and 5th CMC joints.[3] Volar dislocations are further classified depending on radial or ulnar displacements. In radiopalmar dislocation, the base of 5th metacarpal is completely stripped off of the ligaments but in ulno palmar dislocations, the pisohamate ligament and tendon attachment of extensor carpi ulnaris remains intact.[4]

The injury is thought to be a direct blow transmitted to the dorsal and ulnar aspect of 5th metacarpal base.[5] The clinical features are, swelling of the dorsum of hand along with tenderness at base of 5th digit and axial shortening.[6] The deep branch of the ulnar nerve courses around the hamate and lies volar to the joint, making it vulnerable to injury in both dorsal and volar dislocations.[7-9] Along with standard AP and lateral view radiographs, a lateral view in 30 degrees pronation can provide a better view of the 5th CMC joint.[10]

Ulno palmar dislocations have been treated successfully with closed reductions without fixation as well as open reduction and K wiring.[4,11,12] In our case, closed reduction was attempted, however the dislocation wasn't reduced. Hence open reduction and K wiring was done.

CONCLUSION

Isolated pure dislocation of the 5th CMC joint is a rare injury. A high index of suspicion is required to make a diagnosis. It can be easily missed on plain x rays. Careful examination of the patient, proper X-rays and a CT scan when in doubt would be helpful in diagnosing these rare injuries.

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