



Neglected floating fifth metacarpal: a case report

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Simultaneous dislocation of the metacarpophalangeal and carpometacarpal joint has been previously reported. Floating metacarpals occur when the metacarpal head displaces volarly and the base displaces towards the dorsal side. A closed dislocation at both ends of the fifth ray is unusual. In this study, we report a neglected case of floating fifth ray and its management along with a review of the literature.

Key words: Bipolar dislocation; fifth ray; floating metacarpal; open reduction.

Simultaneous dislocation of the metacarpophalangeal (MP) and carpometacarpal joint (CMC) has been previously reported.^[1-4] A closed dislocation at both ends in the fifth ray is an unusual injury.^[1,2]

We report a neglected case of bipolar dislocation of the fifth ray and its management, along with a review of the literature.

Case report

A 46-year-old male presented to the outpatient department with swelling of the left hand, deformity and impaired motion of the fifth finger of the left hand for the previous two months. The patient experienced a fall from a moving vehicle, landing on his outstretched left hand. The patient was initially treated with a splint from a bone setter.

On examination, tenderness on the ulnar side of wrist and hand, with swelling and deformity of the dor-

sum of the hand was detected. The fifth ray was fixed in 35 degrees of hyperextension at the MP joint with only jog of motion possible at the MP joint. Plain radiograph of the left hand showed dorsal dislocation in the fifth MP (head of the fifth metacarpal dislocated to the volar side) and dorsal dislocation of the CMC joint (base of the fifth metacarpal dislocated to the dorsal side) (Fig. 1). Closed manipulation was not attempted due to the elapsed period between injury and presentation.

Open reduction of the MP joint using a dorsal approach was performed with the patient under regional anesthesia. Exposure was difficult due to adhesions and fibrosis. The sesamoid bone was entrapped in the joint and reduction was feasible only after its removal. The reduction was secured by a K-wire in a position of 45 degrees of flexion at the MP joint. The CMC joint was then approached through another direct dorsal incision. Severe fibrosis around the articulating surfaces was sharply dissected to allow

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Fig. 1. (a) Anteroposterior, (b) oblique, and (c) lateral radiographs of the left hand showing a floating fifth metacarpal with a volarly displaced fifth metacarpal head and dorsal displacement of the base of the first metacarpal. Sesamoid bone interposition is seen in the fifth metacarpophalangeal joint.

visualization of the joint. The fifth MP was transfixed to the 4th and 3rd metacarpals. The elbow was supported with a slab positioned in the intrinsic plus position (Fig. 2). K-wires were removed at 6 weeks. The

patient was put in a removable splint and underwent physical therapy for an additional 4 weeks.

The patient was asymptomatic at the 8th month follow-up. Grip was 75% as compared to the opposite



Fig. 2. (a) Oblique and (b) anteroposterior radiographs showing K-wire fixation of the metacarpophalangeal joint of the fifth ray and transfixed fifth metacarpal with the fourth and third ray.



Fig. 3. (a, b) Follow-up radiographs showing well-maintained spaces of the metacarpophalangeal and carpometacarpal joints.

side and the MP joint range of motion ranged from 10 to 70 degrees. Radiographs showed good alignment with no osteoarthritic changes of the involved joint (Fig. 3).

Discussion

Single dislocation of the fifth metacarpal is rare and an isolated, closed floating metacarpal has been reported in the literature only six times.^[1] Late/neglected dislocation has not previously been reported in the literature. The fifth metacarpal is a saddle joint and is supported by the pisometacarpal ligament, intercarpal ligament and carpometacarpal ligaments.^[5] Fifth metacarpal dislocations are caused by high-energy traumas. The underlying mechanism is either a direct blow on the ulnar and palmar aspect of the hand or indirect forces along the metacarpal shaft, leading to ligament disruptions. Our patient fell from a moving vehicle onto his outstretched hand. Traumatic force resulted in hyperextension of the MP joint leading to a volar dislocation of the head of the metacarpal. The force continued along the metacarpal shaft causing ligament disruption and levering the base of the metacarpal dorsally.^[3]

The neglected nature of our case indicated open reduction. Though there are some case reports on floating metacarpal, no neglected cases have been reported to our best knowledge.^[1-5] In fresh injuries, successful closed reduction has been reported.^[1,2] In our case, however, the fibrosis around the head and base of the fifth metacarpal caused difficulty in reduction. Given the sesamoid entrapment in the MP joint, it is

likely that even immediate closed reduction would not have been successful. Interposition of the volar plate necessitated open reduction and pinning in few cases.^[1] Regular radiological monitoring is essential as the lack of repair of collateral ligaments may result in the volar subluxation of the MP joint in cases of closed reduction without pinning.

In conclusion, our case showed that even in cases of neglected floating metacarpal injury, good results can be achieved by open reduction and internal fixation. However, awareness and timely recognition of such injuries is of paramount importance to avoid surgical intervention, disability and complications of the hand and proper physiotherapy regimen is necessary to achieve good postoperative function.

Conflicts of Interest: No conflicts declared.

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