



ISOLATED COMPLEX DORSAL DISLOCATION OF THE MIDDLE FINGER METACARPOPHALANGEAL JOINT

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SUMMARY : *Complex dislocations of the metacarpophalangeal joints are rare injuries. When they occur, they are relatively common in the thumb, index and little fingers. Isolated complex dislocation of the metacarpophalangeal joint of the middle finger is extremely rare because of the inherent anatomical stability in that joint. We are reporting a case of isolated complex dorsal dislocation of the middle finger.*

CASE REPORT

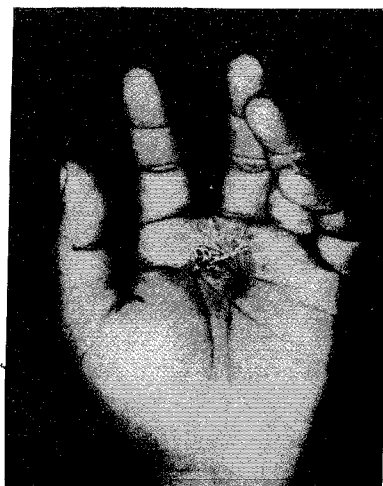
A 33 year old man injured his left middle finger in an accidental fall at home when the finger hit a stone. He had a 2cm transverse laceration in the palm over the metacarpophalangeal joint of the middle finger. The finger was deformed and he was unable to bend it. He sought treatment at a peripheral hospital. Skiagrams taken at that time revealed dorsal dislocation of the middle finger. (Fig 1). The wound was sutured under local anaesthesia and reduction of the dislocation was attempted. After multiple attempts it was presumed that a successful reduction had been achieved and the patient was given a ball bandage and sent home. No post reduction skiagram was taken. The patient returned to the hospital a week later for suture removal. The finger appeared to be still deformed

and a skiagram taken at that time with the ball bandage revealed that the dislocation was still unreduced. He was then referred to our centre for further management.

On examination he had a 2cm sutured wound in the palm over the metacarpophalangeal joint of the middle finger with puckering of the adjacent skin (Fig 2). On palpation, the head of the third metacarpal was easily felt in the palm and the base of the proximal phalanx was felt on the dorsum. The patient was able to flex the distal and proximal interphalangeal joints to 30 degrees each but there was no movement at the metacarpophalangeal joint. Blunting of sensation was present over the volar aspect of the middle finger on both sides.

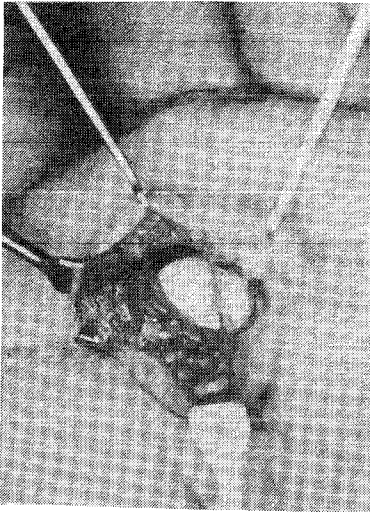


(Fig-1)



(Fig-2)

Under brachial block, irreducibility was confirmed. The sutures on the volar side were removed and the wound was extended on either side. Extreme caution was exercised not to cause injury to the digital nerves. The head of the metacarpal had button holed through the palmar fascia. The flexor tendons were on the ulnar side and lumbricals were on the radial side. Transverse fibres of the palmar fascia on the volar side and the natatory ligament on the dorsal side were tightly holding the neck of the third metacarpal. Digital neurovascular bundles were very superficial and were found to be bruised (Fig.3). Volar plate had



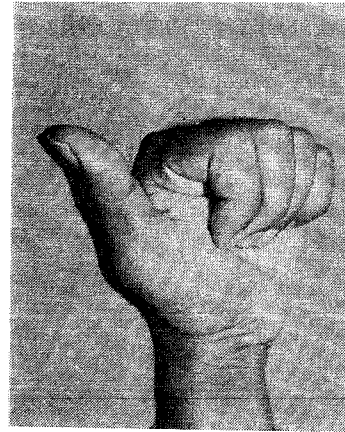
(Fig-3)

ruptured from its proximal attachment and was between the head of the metacarpal and the base of the proximal phalanx causing irreducibility. Some transverse fibres of the superficial palmar fascia were divided which helped to gain access to the posterior side. The deep transverse metacarpal ligament was found to be partially divided. They were divided further and this helped to deliver the volar plate easily to reduce the dislocation. The wound was thoroughly irrigated and closed over a drain. A dorsal extension block splint was given and the finger was mobilised from day one. He was under cover of intravenous antibiotics for 48 hours.

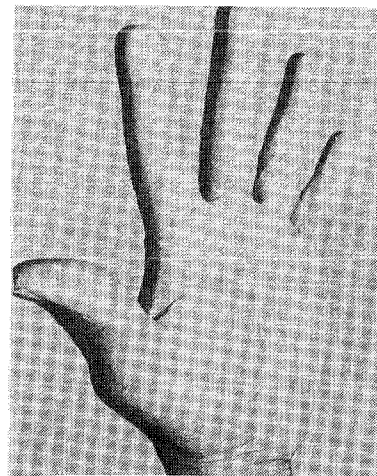
The wound healed well and he regained full range of movement in 8 weeks. At 18 months follow up he has full range of movement, good stability of the joint, good grip strength and normal sensation in the fingers (Fig.4a & b).

DISCUSSION

Complex dislocation means irreducible dislocation. In 1957 Kaplan reported 2 cases of complex dislocation of the metacarpophalangeal joint of the



(Fig-4a)



(Fig-4b)

index finger. Since then numerous reports have appeared on this type of dislocation in the MCP joints of the thumb, index and little fingers. Green and Rowland stated that "there are no case reports in the literature of isolated dislocation in the ring or long fingers"¹. In 1979, Imbriglia and Sciulli² reported 2 cases of open complex MCP joint dislocations, one each in the index and long fingers. In 1986, Nussbaum and Sadler³ reported the unique case of an isolated closed dorsal dislocation of the middle finger metacarpophalangeal joint. In 1988, May et al⁴ reported a closed complex dorsal dislocation of the middle finger metacarpophalangeal joint. Our case is an isolated complex dorsal dislocation of the metacarpophalangeal joint of the middle finger and is probably of the open variety. When the patient reached us, the volar wound had healed, but the head of the metacarpal was so superficial that it most probably communicated with the wound at the time of injury.

Isolated dislocation of this joint is extremely rare because of the stability afforded by the complete attachment of the volar plate to the deep transverse metacarpal ligament on either side. In the border digits the volar plate is attached to the deep transverse metacarpal ligament on one side and collateral ligament on the other side making them less stable when compared to the middle and ring fingers. Studies in the cadaver and clinical observations have proved that more than half of the attachment of the deep transverse metacarpal ligament to the volar plate must be divided before the joint could be dislocated.²

All previously reported cases have been correctly diagnosed within a few hours of the injury and have been appropriately treated operatively. This is the first case reported where there has been a delay in the appreciation of the problem for more than a week. Operative treatment done at this stage has also given excellent results.

Kaplan described a volar operative approach for this problem. Though the pathology and the structures causing irreducibility could be well visualised from the volar approach, injury to the neurovascular bundles is a real possibility because of their displaced and superficial location. Reports of inadvertent division of the digital nerves renewed interest in the dorsal approach. Of the 3 isolated complex dislocations reported in the MCP joint of the middle finger, Imbriglia and Sciulli² and Nussbaum and Sadler³ used volar approach. May et al⁴ used a dorsal approach and said that it provided adequate exposure without risking injury

to the digital nerves. When using a dorsal approach, the volar plate is slit in the midline till reduction is feasible. In our patient since there was already a wound in the palm, we preferred the volar approach. The digital nerves lie very close to the skin, being tented by the metacarpal head and extreme caution must be exercised. Early post-operative mobilisation of the finger with guarded extension gave a good result.

References

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