

Hand Lisfranc Injury?: Complex 2nd to 5th Carpometacarpal Fracture Dislocation

Mohamed Ali N; Abdul Rashid MA, Arsad SR, Muhammad Nawawi RF
Hand and Microsurgery Department, Hospital Selayang, Selangor

INTRODUCTION:

Carpometacarpal fracture dislocation accounts about 0.2% of all hand injuries, in which up to 70% can be misdiagnosed¹. It is related to high velocity trauma such as crush injuries and motor vehicle accidents. In this case report we described a complex carpometacarpal fracture-dislocation of all medial four fingers which we equate to Lisfranc injury seen on the foot.

REPORT:

A right-hand-dominant, 26-year-old man presented with left hand pain and deformity after an MVA. Physical examination showed swelling and marked tenderness over left hand, deep laceration wound measuring 6x2 cm over flexor zone IV with reduced sensory of the median and ulnar nerve distribution. Initial radiographs and pre-operative CT images delineate fracture base of left 2nd - 5th metacarpals with CMCJ dislocation and fracture dislocation of left hamate, triquetrium, pisiform and capitate with capitolunate subluxation.

Wound debridement, open reduction and K-wiring of 2nd-5th left metacarpals and carpal bones were done. The volar carpal ligament of left hand was repaired using non-absorbable suture. Fracture alignment and reduction confirmed under fluoroscope. The hand was immobilised in volar slab till removal of K-wires at 6 weeks post operative.



Figure 1: Pre-operative CT imaging.

DISCUSSION:

CMCJ fracture-dislocation is rare thanks to its strong ligamentous support requiring significant force for disruption¹. The third CMCJ acts as a keystone due to its recessed location compared to other metacarpals' carpal articulation, analogous to second metatarsal of the foot¹. This injury can be classified according to direction of displacement, number of articulations involved and pattern or location of injury¹. This patient fracture pattern is dorsal displacement, the commoner type compared to volar or divergent patterns. Various surgical options are available but optimal treatment is still controversial. Open reduction offers the benefit of direct articular visualisation, avoidance of transfixation tendon via percutaneous pinning and allow drainage of hematoma¹.



Figure 2: Post-operative radiographs.

CONCLUSION:

CMCJ fracture-dislocation is uncommon, a high index of suspicion and careful assessment allow timely anatomical reduction and stable fixation for early mobilisation and satisfactory outcome.

REFERENCES:

1. P. Bhardwaj et al. Fracture Dislocations of the Carpometacarpal Joints of the Fingers. *Journal of Clinical Orthopaedics and Trauma*. 2020; 11: 562-569