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Case Report

Orthopaedics Section

Simultaneous Bennett's Fracture/ Dislocation and Dorsal Fracture/ Dislocation of Inter Phalangeal Joint of Thumb- A Case Report

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ABSTRACT

Simultaneous closed double dislocations of the hand are not a common presentation. We hereby report a 40-year-old male patient with an unusual presentation of Bennett's fracture/dislocation associated with dorsal fracture dislocation of the interphalangeal joint of thumb along with its management by Open Reduction and Internal Fixation (ORIF) with K-wires and physiotherapy. The patient had near normal functions after three months.

Keywords: Dislocation of hand, K-wires, Near normal functions, Thumb

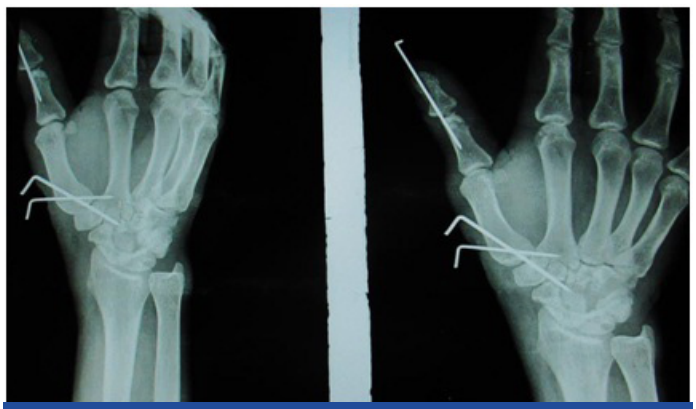
CASE REPORT

A 40-year-old male carpenter, had sustained a road traffic accident by means of fall by self from his bike, with the thumb of the right hand landing first on the ground. He presented to the accident and emergency department with swelling and deformity of the thumb volar aspect and deformity of the metacarpal base region of the dominant right hand.

On examination there was deformity and swelling around the joint. There was also swelling, deformity and tenderness around the base of first metacarpal region of the right hand. The movements of the thumb were restricted with normal vascular and distal perfusion status. There were no associated tendon injuries. Other finger joints were normal. The patient had no other associated injuries or medical illness.

A plain radiograph of the right hand including the anterio-posterior and oblique views [Table/Fig-1] revealed fracture dislocation of the first carpo-metacarpal joint (Bennett's) and unicondylar fracture dislocation and dorsal displacement of the interphalangeal joint of the 1st finger.

Under regional anaesthesia and tourniquet control, open reduction was done and the joint transfixed with one 1.5mm k-wire involving the distal phalanx and intact condyle of the distal articular surface of proximal phalynx. A 3cm incision made in the glabrous and non-glabrous junction starting 1cm from the radial styloid (Wagner's incision). Thenar muscles were reflected, fracture reduced and fixed with two k-wires 1.5mm each. One k-wire passing from the distal fragment to the trapezium and another transfixed with the base of the second metacarpal. Anatomic reduction and a stable fixation were obtained [Table/Fig-2]. Post-operative period was uneventful and sutures removed on the 12th post-operative day.



[Table/Fig-2]: Postoperative posterio-anterior and oblique X-ray of right hand showing anatomical reduction and fixation with K- wires.

[Table/Fig-1]: Posterio-anterior and oblique views of right hand showing Bennett's fracture dislocation with fracture and dorsal dislocation of interphalangeal joint.

[Table/Fig-3]: 11th month radiograph, posterio-anterior view and lateral view of the right hand showing fracture site well united.

A Bennet's plaster cast was applied for additional immobilization for five weeks. The interphalangeal fixation wire was removed after 3 weeks and passive mobilization started.

The carpo-metacarpal fixation wires were removed at the end of 4th week with guarded physiotherapy. Patient was followed for 11 months. The fracture united well with no malrotation/ malunion [Table/Fig-3]. He had a limitation of 10^0 in thumb abduction and flexion with 5^0 of palmar flexion limitation compared to the left hand but within functional limits. Since, patient had near functional range of movements of right hand and carried his activities of daily living and profession without difficulty, he was discharged from follow-up.

DISCUSSION

The first Carpometacarpal Joint (CMC), Metacarpophalangeal (MCP) and Interphalangeal (IP) joint is inherently unstable because of the bony anatomy [1]. The constant pull of abductor pollicis longus makes the fracture dislocations of CMC unstable [2].

Hyperabduction/ hyperextension injuries to thumb are very common and usually present as collateral ligament injuries, Bennett's or Rolando fractures, MCP dislocation, interphalangeal dislocation or its combinations like CMC and MCP joint [3,4], CMC and IP joint [5], MCP and IP joint [6], with Bennett's fracture dislocation and MCP/ IP joints [7] occurring very rarely and less frequently reported. Bennett's fractures can be managed non-operatively [8] or by operative methods like closed or open reduction and internal fixation with k-wires [9], tension band wiring [10], plates and lag screws [11]. Recently arthroscopic assistance also has gained importance [12]. These patients must be carefully monitored with serial radiography because of the problem of late displacement and varus angulation due to pull of APL [13].

Our case involved Bennett's fracture dislocation and IP joint of right thumb. Based on the geometry and fracture association we did an open reduction and internal fixation with k-wires. We followed the patient closely and the patient had near normal functions of the thumb.

CONCLUSION

Double dislocations of thumb involving Bennett's fracture dislocation and IP joint dislocation as a result of a hyperabduction/ hyperextension injury is a rare event. We had managed with open reduction and k-wire fixation. The patient had near normal thumb functions.

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