Unusual Case of Carpometacarpal Dislocation of All the Four Fingers of Ulnar Side of Hand

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Introduction

Carpometacarpal dislocations of the fingers of ulnar side of the hand are a relatively uncommon injury. They are documented largely by reports of single cases or group of small cases [1]. Diagnosis of this unusual form of injury requires high index of suspicion, careful examination and good radiography. Dislocations at the finger carpometacarpal joints are usually high-energy injuries seen commonly in boxers and motorcyclists [2]. Considerable swelling of the back of the hand may mask the characteristic hump at the root of the hand. The diagnosis can be easily missed due to other serious injuries. These injuries account for less than 1% injuries of hand and are frequently overlooked or missed. Disability of the hand is severe in untreated or in those where treatment is delayed.

Case Report

A 29 year old serving soldier presented to a tertiary care service hospital with gross swelling of left hand following an

injury sustained while boxing. He was managed with analgesics and crepe bandage initially for two weeks before reporting to the hospital. X-ray of the left hand AP and lateral views revealed carpometacarpal dislocations of all the four fingers of the ulnar side of the left hand. An oblique view of the left hand was taken to confirm the diagnosis. Open reduction of all the four carpometacarpal joints of second, third, fourth and fifth fingers was done after four days of admission. After internal fixation of the third and fourth carpometacarpal joints using K-wires, stability was achieved. Post operatively volar POP slab was given till suture removal at two weeks, followed by short arm cast for four weeks. K-wires were removed after four weeks. Satisfactory reduction was maintained on re-examination after six weeks following cast removal. Full range of motion of the hand was achieved showing a good result.

Discussion

Carpometacarpal dislocations of the all the four fingers of the ulnar side of the hand are seen following high-energy trauma. The increased mobility on the ulnar side

Fig. 1 : Pre-operative radiograph showing dislocation CMP joints of ulnar four fingers

Fig. 2 : Post-operative radiograph showing reduction of CMP joints with K-wire in situ

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may predispose to the noted greater frequency of injury. Stability at the finger carpometacarpal joints is provided by a system of four ligaments. They are the dorsal metacarpal, palmar metacarpal and the two sets of interosseous ligament. The index metacarpal has a particularly stable configuration through its wedge-shaped articulation with the trapezoid [3].

These injuries are frequently missed initially because of the gross swelling of the hand and overlap on the lateral x-ray obscures accurate depiction of the injury pattern. Therefore, at least one variant of an oblique view is required for diagnosis in those cases with high index of suspicion [4].

The treatment of carpometacarpal dislocation may be summarized as follows: (a) no treatment – accept deformity (b) closed reduction – manipulation, reduction and external immobilization or manipulation, reduction with fixation and external immobilisation (c) open reduction – operative relocation without fixation but with external immobilisation, operative relocation with internal fixation and external immobilisation or primary arthrodesis [1]. Open reduction and internal fixation with K-wires are indicated in multiple dislocations, irreducible dislocations and in late presentations. For acute single injury pattern, closed reduction or closed reduction with K-wire fixation is only indicated.

Injury to the ulnar nerve is frequently seen due to its close proximity to fifth carpometacarpal joint [5]. It can also lead to sympathetic dystrophy and persistent dislocation can lead to stiffness of the hand.

Carpometacarpal dislocation of all the fingers of ulnar side of the hand is a rare form of hand injury. It is important to diagnose and treat this injury to avoid considerable morbidity associated with this condition. Even though these injuries can be treated by different methods, better results are seen in open reduction and internal fixation with K-wires. It will help in accurate reduction of the dislocations and early functional recovery.

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