

Base of Metacarpal Fracture in Paediatric Patient

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INTRODUCTION:

The incidence of thumb metacarpal fracture in children is rare. Its occurrence is typically seen involving the base of 1st metacarpal bone. Fracture in this region can be classified into four different types: Type A, metaphyseal fracture; Type B, Salter-Harris 2 fracture with lateral angulation; Type C, Salter-Harris 2 fracture with medial angulation; and Type D, Salter-Harris 3 fracture (paediatric Bennett fractures). Literature has suggested that stable and acceptable fracture following closed manipulation can be treated with short arm cast. Otherwise, percutaneous pinning or open reduction with internal fixation is recommended.

REPORT:

We treated an 11 years old boy who presented following a sports injury. He was playing goalkeeper when his left thumb was hit by the football. Plain radiographs showed base of left 1st metacarpal bone fracture (Type 2). His fracture was unstable with persistent angulation and displacement following initial attempt at closed manipulation and reduction. He was later scheduled for closed manipulation and percutaneous pinning at post trauma day 3. Intra-operatively, reduction was achieved by longitudinal traction of thumb in supination along with volar directed pressure applied at the base of 1st metacarpal. Fracture was subsequently stabilized using two crossed 1.4mm Kirschner wire supplemented with short arm cast. Total period of immobilization was 4 weeks in which both cast and Kirschner wire were removed during clinic visit at 1 month. Then he was referred to OT for hand function exercises



Figure 1: Xray left hand pre operative



Figure 2: Xray left hand post operative

CONCLUSION:

Displaced fracture at the base of 1st metacarpal bone is rare in children. Based on the potential of remodelling, indication for aggressive treatment remains controversial. Our decision to proceed with percutaneous fixation was on the basis of angulation >30 degrees, displacement of more than $2/3$ rd as well as to prevent further secondary displacement.

REFERENCES:

1. Closed reduction of severe angulated Rockwood and Wilkins' Type C Thumb metacarpal base fractures in children: case series. BMC Musculoskeletal Disorders. Fei Q, Dehai Q, Lei C. 2021.