

# A Common Missed Diagnosis Of Transphyseal Separation Of Distal Humerus: A Case Report

Teo GH; Ng TS

Department Of Orthopaedic, Hospital Melaka, Melaka

## INTRODUCTION:

Transphyseal separation of distal humerus is rare and commonly missed. It usually occurs in children younger than 2 years old. The diagnosis is challenging because the distal humeral epiphysis is not well visualized in plain radiograph at this age and often missed or misdiagnosed as elbow dislocation.

## CASE REPORT:

A 2.9 years old child fell on an outstretched hand and developed swelling on his right elbow. Examination revealed a swollen right elbow with limited movement. Neurovascular was intact. Plain radiograph was obtained and showed transphyseal separation of the distal humerus. The fracture was reduced by closed manipulation and stabilized with 2 lateral K-wire (1.6mm) percutaneously and 1 medial K-wire (1.6mm) inserted using open method to avoid ulna nerve injury. Post fixation the fracture was stable. The elbow was protected with backslab. K-wires were removed after a month and started on range of motion. At 2<sup>nd</sup> month of follow up, he regained full range of motion of the elbow. No neurological deficit.

## DISCUSSIONS:

The diagnosis of transphyseal separation in unossified epiphysis of infants often missed or misdiagnosed as elbow dislocation [1, 2, 3, 4]. It can occur in newborn due to difficult and instrumental deliveries [4]. 38% occur in child abuse and it must be ruled out [3, 5, 6, 7]. Posteromedial displacement of radius and ulna are the clue on radiograph. Other radiographic features include associated distal humeral metaphyseal fragment, a displaced medial epicondyle or capitellar ossification centers [6]. When diagnosis is uncertain, ultrasound is useful to confirm diagnosis and seldom required MRI [3, 4]. In fresh cases, many author prefer closed reduction and percutaneous pinning [3, 5]. The most common complication is cubital varus when neglected and may require osteotomy later [3, 5].



Figure 1: Posteromedial displacement of radius and ulna with metaphyseal fracture.



Figure 2: Closed reduction and percutaneous k-wire (1.6mm) inserted (2 lateral and 1 medial)



Figure 3: fracture united after 2 months

## CONCLUSION:

Transphyseal separation of distal humerus is rare and commonly missed or misdiagnosed on radiograph. The awareness of the anatomical relationship of the elbow in infants or neonates are very important in making an early diagnosis and appropriate management. Failure to identify this injury may result in deformity and impaired functional outcome.

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