

## Irreducible Juxta-Epiphyseal Fracture due to Entrapment of Extensor Hood: A Case Report

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### ABSTRACT

A case of irreducible juxta-epiphyseal fracture of the proximal phalanx of the little finger is presented. The extensor hood was trapped under the proximal end of the distal fracture fragment and open reduction was necessary. An open reduction was performed using the dorsal approach, with good results.

**Key words:** *Juxta-epiphyseal fracture, Irreducible fracture, Phalanx, Extensor hood*

### CASE REPORT

A 4-year-old boy fell onto his left hand. Physical examination revealed swelling of the little finger, especially over the metacarpophalangeal joint. The little finger was angulated ulnarly, with limited motion. Initial X-rays revealed a displaced Salter-Harris type II fracture of the proximal phalanx of the little finger (Fig.1). A closed reduction was attempted, but was unsuccessful. Therefore, an open reduction was performed using the dorsal

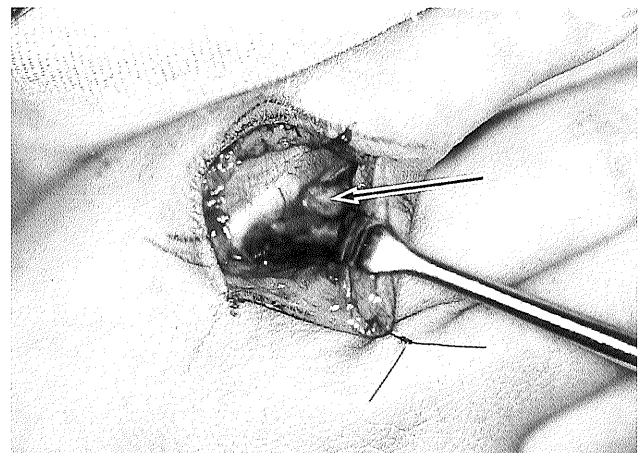


**Fig. 1.** Radiograph of the left hand showing a displaced Salter-Harris type II fracture of the proximal phalanx of the little finger.

approach on the 4th day after the injury. The extensor hood was interposed between two fragments (Fig.2). After the extensor hood was moved upward on the distal fragment, the two fragments were aligned anatomically, but the fracture site was unstable and required wire fixation (Fig.3). The wires were removed after 4 weeks. At the last follow-up, 2 years after surgery, the patient was using his left hand freely without overlap of the fingers, and the metacarpophalangeal joint of the little finger had a full range of motion. The injured epiphysis appeared normal in radiographs taken at the time.

### DISCUSSION

Epiphyseal fractures of the proximal phalanx are quite common. The most frequently seen is the



**Fig. 2.** Operative photograph showing that the radial side of the extensor hood is trapped under the proximal end of the distal fragment (arrow showing the proximal end of the distal fragment).



**Fig. 3.** Radiograph showing wire fixation of the fracture fragments.

Salter-Harris type II fracture, usually involving the ring and little fingers<sup>5</sup>). The majority can be treated by closed reduction and splinting, with only 3% requiring open reduction and internal fixation<sup>2</sup>). To the best of my knowledge, only five cases of irreducible juxta-epiphyseal fracture of the proximal phalanx have been reported previously in the literature in English<sup>1,3,4,6,7</sup>). The causes which blocked closed reduction in these cases include entrapment of the flexor tendon, infolding of fibrous tissue, and trapping of the distal frag-

ment in a buttonhole rent in the periosteum and the extensor hood. All these reported cases which required open reduction had good results. In the present case the cause was interposition of the extensor hood between two fragments and is a previously unreported one for open reduction. Open reduction in this case was performed using the dorsal approach, although the volar approach is generally performed on injuries where entrapment of the flexor tendons are indicated<sup>3,6</sup>). Therefore, the surgical approach must be selected according to the cause in each case.

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