

Double "Thurston-Holland" Sign in the Thumb Ray: An Unusual Injury Pattern

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Citation

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Abstract

INTRODUCTION

Epiphyseal injuries are a common injury in children predominantly in the hand and wrist. We report a rare case of Double Thurston-Holland sign in the thumb ray in a child.

CASE REPORT

A 14-year-old right handed male injured his left thumb jumping over a tennis net; the exact mechanism of injury was unknown. On examination, the thumb was swollen, bruised and tender with a marked 'boutonniere-like' deformity along the first ray; flexed at the metacarpophalangeal joint and extended at the interphalangeal joint.

Radiographic examination revealed Type II Salter Harris growth plate injuries (Fig 1) at the bases of both the first metacarpal and proximal phalanx of the thumb.

Figure 1

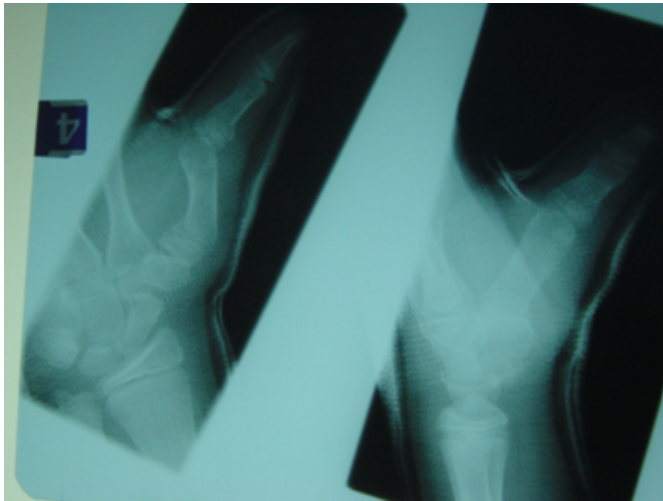
Figure 1: AP view of the thumb showing Salter Type II injuries at the bases of metacarpal and proximal phalanx



Reduction of the deformity was performed by traction while the displaced metacarpal was pushed medially to restore its relationship with the epiphysis. A moulded thumb spica was applied while traction at the tip of the thumb was maintained. Post-manipulation films (Fig 2) demonstrated satisfactory reduction. Immobilisation was discontinued four weeks after the injury; a full functional recovery followed.

Figure 2

Figure 2. AP and lateral views of the thumb demonstrating acceptable position of the bases of the first metacarpal and proximal phalanx following closed reduction



DISCUSSION

Multiple synchronous finger fractures involving phalanges or metacarpals of adjacent rays have been described in the literature¹, but we found no reports of a similar injury involving the phalanx and metacarpal of the same ray. We

speculate the majority of the body weight was borne by the volar aspect of the thumb creating a deforming hyperextension force along the base of the thumb metacarpal. Due to the saddle arrangement of the thumb metacarpophalangeal joint, forces can easily transmit through the proximal phalanx₁ to create a similar injury pattern at this level. Physeal disruptions of the phalanx and metacarpal produced a striking 'boutonniere-like' deformity of the thumb.

Most Type II Salter Harris disruptions₂ (also described as Thurston Holland's sign), involving the thumb, irrespective of a single or double level involvement, can be satisfactorily managed with closed manipulation and plaster immobilisation for about 4 weeks. Up to 30% angulation can be accepted at the base of the thumb without any significant functional deficits₃.

References

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