

Management of Traumatic Mallet Finger Deformaty in a Child

Rajiv Gupta*

Associate Profession, Department of Ortho SHMM Medical College, Saharanpur, India

*Corresponding Author: Rajiv Gupta, Associate Profession, Department of Ortho SHMM Medical College, Saharanpur, India.

DOI: 10.31080/ASOR.2022.05.0486

Received: April 13, 2022

Published: May 27, 2022

© All rights are reserved by Rajiv Gupta.

Abstract

A case of mallet finger in a child is described. The epiphysis of the terminal phalanx was displaced dorsally with the extensor tendon attached to it, and was first diagnosed two weeks after injury. The treatment was by open reduction. Radiograph three years later showed that a satisfactory position of the epiphysis and normal growth of the terminal phalanx had occurred.

Keywords: Traumatic Mallet; Finger; Deformaty; Child

Introduction

Young children cannot give accurate histories and are usually different to examine when they have been injured. Careful examination of the fingers is necessary after the child has been pacified.

The most common mechanism causing a mallet finger deformity is a sudden flexion force applied to the distal interphalangeal joint while the extensor tendon is under tension. In adults this usually ruptures the extensor tendon, but in children with a thick epiphyseal plate it may result in separation of the epiphyseal plate through the zone of calcifying cartilage.

Rank & Wakefield observed that mallet finger deformity in children is due to forward angulation of the diaphysis on the epiphysis. Seymour described this angulation and advocated conservative treatment. Neither of these authors mention complete separation and displacement of the epiphyseal plate. Salter and Harris pointed out that the flexion deformity was due to the unopposed action of the flexor profundus on the shaft of the bone, whereas the ex-

tensor, being inserted into the epiphysis maintains the epiphysis in the extended position.

In the case to be described it is interesting that the injury was not diagnosed until two weeks after the injury.

Case Report

A boy aged three was brought to hospital because of an injury he had sustained to his right middle finger two weeks previously.

On examination, a swelling was visible on the dorsum of the middle phalanx of the finger. The terminal interphalangeal joint was held in the flexed position usually seen in an adult mallet finger.

Radiographs showed that the epiphyseal plate of the terminal phalanx was totally displaced and was lying on the dorsum of the middle phalanx. At operation the position of the epiphyseal plate was confirmed and it was found to be still attached to the extensor tendon. The gap at the base of the distal phalanx had already filled

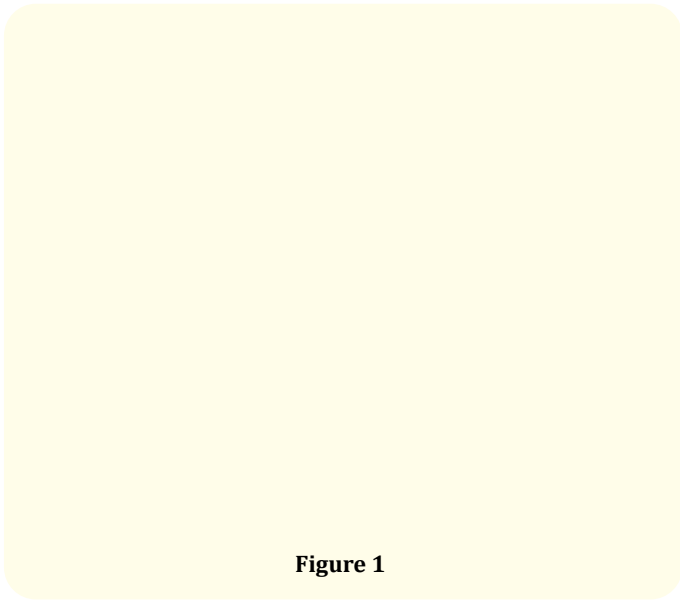


Figure 1

with fibrous tissue which was excised to facilitate reduction. The reduction was easily maintained by a plaster splint for three weeks.

The epiphyseal plate survived and growth of the terminal phalanx was not affected. three years later the finger had a normal range of movements and radiograph showed a normal terminal phalax (Figure 2). [1-3]

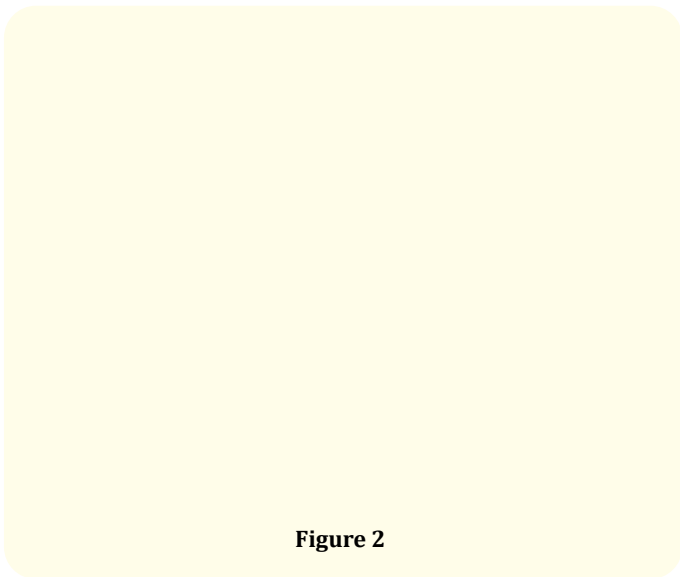


Figure 2

Discussion

This type of mallet finger occurs in children and requires open reduction. It is imperative that lateral radiographs be taken to determine the degree of displacement. The separation of the epiphyseal plate from the phalanx occurs as a result of a rapid and sudden flexion movement. The insertion of the extensor tendon on the epiphysis causes it to maintain its extended position during the injury, whilst the flexor digitorum profundus tendon simultaneously and violently flexes the metaphysis into which it is inserted, thus causing the avulsion.

Conclusion

Even late reduction of this displacement resulted in normal growth of the terminal phalanx because the growing cells of the epiphyseal plate remained with the epiphysis even when separation is complete.

Bibliography

1. Rank BK and Wakefield AR. "Surgery of repair as Applied to Hand Injuries". second Edition, Edinburgh and London, E. and S. Livingstone (1960).
2. Salter RB and Harris WR. "Injuries involving the Epiphyseal Plate". *The Journal of Bone and Joint Surgery* 45A (1963): 587-622.
3. Seymour N. "Juxta-Epiphysial fracture of the Terminal Phalanx of the Finger". *The Journal of Bone and Joint Surgery* 48(1996): 347-349.