



PAEDIATRIC ACUTE CARE GUIDELINE

Mallet Finger

Scope (Staff): All Emergency Department Clinicians

Scope (Area): Emergency Department

This document should be read in conjunction with this DISCLAIMER
<http://kidshealthwa.com/about/disclaimer/>

Mallet Finger

Background

- Caused by forceful flexion to the end of an extended finger
- Most frequently occurs in contact or ball-handling sports such as baseball, football and basketball
- The terminal extensor tendon on the dorsum of the finger at the DIP is torn, stretched or avulsed

Assessment

- Pain, swelling (+ / - bruising) on the dorsum of the DIP joint
- Flexed posture of finger tip due to inability to actively extend it
- Passive (by the examiner) extension is usually possible. Inability to extend DIP passively indicates bony or soft tissue entrapment
- The degree of DIP angulation often reflects the severity of the tendon disruption
- Open injuries are rare



Shows a middle finger with Mallet deformity

Investigations

- X-Ray of finger
- Look for a dorsal avulsion fracture of the distal phalanx at DIP joint



Mallet Finger X-Ray

Management

Initial management

Open injury, inability to passively extend DIP joint or large fracture > 30% of joint surface:

- Call plastics registrar for review and fast the child for possible urgent surgery

All other closed injuries:

- Preferred splint – Stax splint (see below)
- Alternative splint – Zimmer splint (see below)
 - use this if unable to find a suitable size Stax splint or Stax splint is unavailable
- Both splints are designed to splint the DIP joint but permit PIP joint movement
- Instruct the patient / family to not remove the splint, as even brief DIP joint flexion can delay healing and impair final joint function

STAX FINGER SPLINT



Dorsal part of Stax splint. Note that it has a number to indicate size of splint.



Volar aspect of Stax finger splint



Fix it to the finger just distal to PIP joint with a small adhesive strip (e.g. elastoplast)



Close up of the volar aspect of the Stax splint

KLEINERT MODIFIED DORSAL FINGER SPLINT (Mexican Hat Splint)



Zimmer splint (aluminium with foam backed splint) is cut to the appropriate length, from the finger tip to just distal to the PIP joint.



Use sharp scissors to remove the middle one-third of the foam padding. Bend each end of the splint to form a slight concave contour.



The patient is instructed to hold the injured finger in hyperextension.



The splint is then affixed to the dorsum of the digit by two separate tapings.



Close-up look at the completed splint.

Tags


baseball, basketball, closed, deformity, dip, dorsum, finger, football, fracture, injury, joint, mallet, mallet finger, open, splint, stax, tendon, torn, zimmer

References

PMH ED Guideline: Mallet Finger – Last Updated November 2014

- Rebecca Bassett et al. Extensor tendon injury of the distal interphalangeal joint (mallet finger). Up To Date.
- R. G. Hart et al, The Kleinert modified dorsal splint for Mallet finger fracture. American Journal of Emergency Medicine 2005 (23), 145-148.

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File Path:			
Document Owner:	Dr Meredith Borland HoD, PMH Emergency Department		
Reviewer / Team:	Kids Health WA Guidelines Team		
Date First Issued:	12 November, 2014	Version:	
Last Reviewed:	12 June, 2017	Review Date:	12 June, 2020
Approved by:	Dr Meredith Borland	Date:	12 June, 2017
Endorsed by:	Medical Advisory Committee	Date:	12 June, 2017
Standards Applicable:	NSQHS Standards: 		
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