

BACKGROUND

- A mallet finger is a disruption of the extensor mechanism at the distal interphalangeal joint (DIP)
- While this is a common injury in the pediatric population, research specifically on the management of these injuries in the pediatric population is lacking²
- Treatment tends to mirror the management of these injuries in adults with extension splinting for at least 6 weeks^{1,2,3}

OBJECTIVES

- To examine the healing rates of pediatric mallet fingers treated nonoperatively
- To explore complication rates associated with nonoperative management of pediatric mallet fingers

METHODS

- Epic at SHS was queried for ICD-10 codes for mallet finger and related injuries that may have been mallet fingers, but not coded as such
 - Included patients were <17 years old and had an encounter with GSRMC Orthopedics or Plastic Surgery from 2013-2018
 - Patient's were excluded if they were not treated with extension splinting initially, had open injuries, or they had follow up <6 weeks
- The primary measurements were range of motion of the DIP and the presence of pain
 - Patients were stratified with the Crawford Classification⁴

Result	Description
Excellent	Full extension and flexion of the DIP joint, no pain
Good	0-10° extension deficit, full flexion, no pain
Fair	10-25° extension deficit, any flexion deficit, no pain
Poor	>25° extension deficit or persistent pain

- Complications were also recorded and included the need to restart splinting, transition to operative treatment, splint irritation, presence of dorsal bump or nail bed deformity

RESULTS

Table 1: Pediatric Mallet Fingers Treated Nonoperatively at GSRMC 2013-2018

	N(%)
# of Patients	20
Median Age (Min, Max)	13 (7,16)
Type of Mallet	
Bony	16 (80%)
Soft Tissue	4 (20%)
Gender	
Male	16 (80%)
Female	4 (20%)
Average Length of Splinting in weeks (Min, Max)	6.5 (4, 10)
Average Follow Up in weeks (Min, Max)	10.8 (4, 29)
Outcome	
Excellent	12 (60%)
Good	1 (5%)
Fair	6 (30%)
Poor	1 (5%)
Complications	
Convert to Operative	1 (5%)
Restarted Splinting	6 (30%)
Dorsal Bump	8 (40%)
Nail Deformity	0 (0%)
Splint Irritation	2 (10%)
Outcome Breakdown	
Limited Extension	3 (15%)
Flexion Limitation	7 (35%)

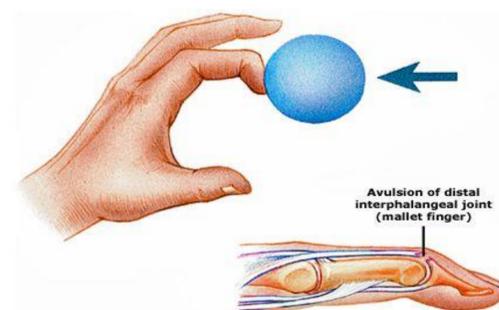


Figure 1 – Schematic diagram of a mallet finger



Figure 2 – A bony mallet finger in one of our patient. They went on to heal without complication

CONCLUSIONS

- Even with our limited numbers at this institution we can see that the vast majority can be treated successfully with nonoperative management and this is supported in the literature^{1,2}
- Many of our “Fair” outcomes were due to reported flexion “stiffness” at final follow up and not a discreet number. It is doubtful this lead to any functional deficits
- Most of our patients with limited extension or need to restart treatment were due to noncompliance with splinting, which has been associated with worse outcomes¹
- Our only conversion to operative management was due to a patient presenting 8 weeks after injury and then being noncompliant with splinting

FUTURE IMPLICATIONS

- Exploration of the data from Randall Children’s Hospital will help to give this investigation a more robust amount of information
- There is a provider there that treats all of his nonoperative mallet fingers with only 4 weeks of splinting, unlike the classic adult amount of 6 weeks and we would like to explore if this is a reasonable option and possibly practice changing

REFERENCES & ACKNOWLEDGEMENTS

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