Splitting Versus Surgical Percutaneous Pinning for the Treatment of Soft Tissue Mallet Finger: A Retrospective Cohort Analysis

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BACKGROUND

- Mallet finger: common injury involving disruption of the extensor tendon mechanism
  - Up to 2/3rds are soft tissue, meaning no bony avulsion/fracture
- Bony mallet fingers can be treated operatively, but frequently initial treatment for soft tissue mallet fingers is nonsurgical
  - Inadequate immobilization/treatment may result in residual extensor tendon lag

Purpose: compare surgical versus non-surgical management of soft tissue mallet finger injury to determine if there are differences in residual extensor lag and complication rates

MATERIALS & METHODS

- Retrospective cohort study from 2011-2020 of a single institution
- Inclusion criteria:
  - ≥18 years of age
  - Initial treatment for soft tissue mallet finger injury
  - Treated with percutaneous pinning or splinting
- Exclusion criteria:
  - Bony involvement
  - Incomplete documentation of residual extensor lag
  - Treatment with Quickcast
- Analysis: univariate comparisons between percutaneous pinning and splinting

RESULTS

- 335 mallet fingers were identified, of which 150 patients met inclusion criteria
  - 109 identified as bony mallet fingers
  - 27 had incomplete data
  - 4 failed prior conservative therapy at an outside institution
  - 44 were initially treated with Quickcast
  - 1 patient excluded for planned crossover between groups

RESULTS

- Of 150 patients, 126 were treated with splinting and 24 were treated with percutaneous pinning
- Splinting was performed for a mean total of 11.3±2.4 weeks, of which 4.1±0.7 weeks were nighttime splinting only
  - 7 patients reported non-compliance with their splint
- Reasons for surgical fixation in 24 patients:
  - 12 patients concerned with potential compliance
  - 3 patients concerned with ability to work
  - 9 patients other or not documented

	Splinting (n=126)	Pinning (n=24)	P-value
Age	50.7 ± 15.4	51.5 ± 13.6	0.990
Sex			1.000
Female	41 (32.5%)	8 (33.3%)	
Male	85 (67.5%)	16 (66.7%)	
Body mass index	28.0 ± 6.1	27.1 ± 3.9	0.810
Laterality			0.837
Right	69 (54.8%)	12 (50.0%)	
Left	57 (45.2%)	12 (50.0%)	
Finger			0.238
Thumb	4 (3.2%)	1 (4.2%)	
Ring	41 (32.5%)	3 (12.5%)	
Middle	40 (31.7%)	9 (37.5%)	
Index	2 (1.6%)	0 (0.0%)	
Small	39 (31.0%)	11 (45.8%)	

	Splinting (n=126)	Pinning (n=24)	P-value
Extensor Lag (degrees)	5.5 ± 9.2	5.8 ± 11.9	0.151
All Complications	5 (4.0%)	5 (20.8%)	**0.010***
Infectious Complications	1 (0.8%)	3 (12.5%)	**0.014***

CONCLUSIONS

- Surgical pinning is an effective treatment for soft tissue mallet finger
- However, there is an increased complication rate without improvements in postoperative functional outcomes
- We prefer conservative treatment due to an increased risk for complication