When should orthotic treatment begin for a tendinous mallet finger?

Educational article - English edition

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Source article

Bastien J, Rouzaud S. When should splint treatment start for a tendinous mallet finger? A retrospective review of 319 fingers. Hand Surgery and Rehabilitation. 2021.

Study objective

This retrospective study assesses how the interval between onset of a tendinous mallet finger and initiation of splint treatment influences clinical outcomes.

Its main objective was to determine whether early treatment produces better outcomes and, conversely, whether late-presenting cases can still benefit effectively from conservative immobilisation.

Methods

The study involved 319 conservatively treated tendinous mallet fingers.

The protocol consisted of strict distal interphalangeal (DIP) joint immobilisation in extension for eight weeks using a thermoplastic Stack-type orthosis.

Exclusions included mallet fingers with a fracture component, significant associated osteoarthritis, poor treatment adherence and thumb injuries.

Clinical outcomes were classified using Patel's criteria into four categories: excellent, good, fair and poor.

Main findings

Overall, 91% of patients achieved an excellent or good result, supporting the effectiveness of conservative treatment of tendinous mallet finger.

When grouped by time to splint application, treatment started before 20 days produced 86% good or excellent outcomes, versus 98% when started after 20 days.

This difference was reported as statistically significant.

These findings are of particular interest because they show no deterioration in outcomes with late presentation. In this cohort, patients treated after 20 days actually had proportionately more good or excellent outcomes.

However, this observation does not establish that treatment should deliberately be delayed: the study was retrospective, and several confounding factors could explain the association.

Influence of local inflammation

The authors observed that certain dorsal DIP clinical findings were associated with less favourable outcomes: redness, pain, swelling and local inflammatory signs.

They therefore proposed that the acute inflammatory state of the tissues at the start of immobilisation might influence healing conditions of the extensor mechanism.

This hypothesis could help explain the paradoxically better outcomes in some later-treated patients, once the initial inflammatory phase had subsided.

It remains a pathophysiological hypothesis, however, rather than evidence of a causal relationship.

Value of treatment in late-presenting cases

A major lesson is that time since injury is not, by itself, a contraindication to conservative treatment.

Late-presenting mallet fingers, including cases present for more than four weeks, may still respond favourably to appropriately managed immobilisation.

Orthotic treatment may therefore remain relevant despite delayed diagnosis, late consultation or a deformity established for several weeks.

Chronicity should not automatically lead clinicians to abandon an attempt at non-operative treatment.

Value of a second period of immobilisation

For some patients whose outcome was insufficient after the first eight weeks of immobilisation, the authors offered another period of splint treatment.

This extension produced clinical improvement in a substantial proportion of these patients.

This suggests that an imperfect result at eight weeks should not necessarily be regarded as definitive failure of conservative treatment.

An extension or second immobilisation period may be discussed before considering other treatment strategies.

Conclusion

This study of 319 tendinous mallet fingers supports the overall effectiveness of strict DIP immobilisation, with 91% good or excellent outcomes.

It provides three principal clinical messages.

1. Late treatment may remain highly effective. Time since injury alone is therefore not sufficient reason to abandon non-operative treatment.

2. Local inflammatory signs appear associated with poorer outcomes. The authors suggest a possible role for the inflammatory environment in tendon healing, but the relationship remains hypothetical.

3. An insufficient first immobilisation period does not necessarily mean definitive failure. A second period or extension of treatment may still yield improvement.

Illustrations from the original resource

Figure 1



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