The use of splinting in the non-surgical treatment of De Quervains disease: a review of the literature

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CRD summary
This review concluded that there is only limited poor-quality evidence to suggest that splinting in de Quervain's disease performs poorly in comparison with steroid injections, especially in patients with more severe symptoms. Given the paucity of evidence and its methodological failings, the conclusions of this single author review would appear to be supported by the data presented.

Authors' objectives
To determine whether there is any evidence to support the use of splinting in the nonsurgical treatment of de Quervain's disease.

Searching
PubMed and the Cochrane Musculoskeletal Injuries Group's Specialised Register were searched up to November 2004; the search terms were reported. Journals (unspecified) not listed in these databases and the reference lists of retrieved articles were also searched for additional references. The searches were not restricted by language.

Study selection
Randomised controlled trials (RCTs), quasi-RCTs and retrospective studies (including case studies) of splinting in adult patients with de Quervain's disease were eligible for inclusion. The diagnosis of de Quervain's disease was commonly based on tenderness of the first dorsal compartment and a positive Finkelstein's test. Eligible control groups in comparative trials were any primary nonsurgical treatment, including steroid injections. Eligible clinical outcomes included a positive Finkelstein's test or palpation of the first dorsal compartment at the radial styloid, or the requirement for surgery; subjective outcomes included symptom improvement such as pain. Reported outcomes also included complications. The included studies compared splinting with steroid injection; splinting and non-steroidal anti-inflammatory drugs (NSAIDs) with steroid injection; splinting and steroid injection with steroid injection alone; and splinting and NSAIDs alone with no control group. The included participants were aged from 18 to 86 years and were mainly from single-site centres in either the USA or Turkey. The characteristics of included participants were often poorly described in the original study reports.

One author assessed the eligibility of studies, without being blinded to journal titles, authors or supporting institutions.

Assessment of study quality
Validity was assessed using the Cochrane Musculoskeletal Injuries Group assessment and each study was given a score out of a possible maximum of 10. The criteria assessed were: concealed allocation; intention-to-treat analysis; blinding of the assessor, participants and treatment providers; comparability of study populations; use of clear inclusion and exclusion criteria; use of defined outcome measures; use of valid and reliable outcome measures; and appropriate length of follow-up.

One reviewer performed the validity assessment.

Data extraction
Both dichotomous and continuous data, as reported in the original study reports, were extracted. The author did not state how the data were extracted for the review, or how many reviewers performed the data extraction.

Methods of synthesis
The studies were grouped according to the interventions and comparators used, and the data summarised in a narrative with accompanying data tables. Where data were available, results were discussed in relation to the severity of
symptoms. Some differences between the studies were evident from the review text and others from the data tables.

**Results of the review**

Five studies (524 symptomatic wrists from 494 patients) were included in the review: three prospective trials, one retrospective study and one case study.

The overall quality of the trials was poor, with four studies scoring only 3 out of a maximum of 10 points, and one study scoring just 2 points. Only one study used randomised methods of allocation; none of the studies stated whether they used concealed allocation methods; one used an intention-to-treat analysis; none of the studies blinded the participants, assessors or treatment providers; two studies failed to use comparable study populations and valid or reliable outcome measures. All but one study failed to state inclusion and exclusion criteria, but only one failed to use appropriate follow-up.

Two out of three studies comparing splinting with steroid injection found that steroid injections led to a greater improvement in symptoms compared with splinting alone, but failed to find any statistically significant differences in pain relief. Both studies of splinting combined with NSAIDs found the intervention to be effective in terms of symptom relief or improvement, but one study found the intervention to be less effective in patients with more severe symptoms. One study comparing splinting and steroid injection with splinting alone and steroid injection alone found that statistically higher rates of success were associated with steroid injection alone. One study of splinting plus NSAIDs with no control group found that 62% of patients had satisfactory results with the combined intervention.

**Authors’ conclusions**
The limited poor-quality evidence available suggests that splinting in de Quervain’s disease performs poorly in comparison with steroid injections, especially in patients with more severe symptoms.

**CRD commentary**

This review answered a clearly defined research question and used an adequate search for published studies, with no restrictions on the language of publication. However, there may be a risk of publication bias as no specific attempts to locate unpublished studies appear to have been made. There may also be a risk of reviewer error and bias as this was a single author review which relied upon only the author selecting and assessing the validity of the studies. The differences between the studies, as well as the poor reporting in many of the original study reports, supports the author's use of a narrative synthesis. Overall, given the limited poor-quality evidence available and the lack of information about statistical significance the review's cautious conclusions would appear valid.

**Implications of the review for practice and research**

Practice: The author stated that further more conclusive research is required before a decision can be made about the treatment of choice for any particular patient, and treatment options should be kept open.

Research: The author stated that more high-quality, appropriately designed research is required to establish the efficacy of splinting and at what stage splinting should be performed, in what position and for how long. In particular, future studies should use clearly defined standardised and validated outcome measures; be of sufficiently large size; use a randomised design; ensure that assessors are blinded; and use placebo injections.

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.