The treatment of chronic scapholunate dissociation: an evidence-based assessment of the literature

Bloom H T, Freeland A E, Bowen V, Mrkonjic L

CRD summary
This review assessed surgical procedures and limited wrist fusion for chronic scapholunate dissociation. The authors concluded that there was insufficient evidence to compare soft tissue procedures and limited wrist fusion. The evidence consisted of case series that did not compare different treatments. This conclusion is likely to be reliable.

Authors' objectives
To assess the effects of soft-tissue procedures in comparison with limited wrist fusion in patients with chronic scapholunate dissociation.

Searching
MEDLINE and the Science Citation Index were searched from 1965 to 2000 for studies published in English; the search terms were provided. In addition, the reference lists in identified articles were checked.

Study selection
Study designs of evaluations included in the review
The inclusion criteria were not specified in terms of study design. Studies with two or more patients were eligible for inclusion. All of the included studies were non-controlled case series.

Specific interventions included in the review
Studies of scapholunate treatments were eligible for inclusion. In the review, the surgical treatments were classified as soft-tissue repairs (category included all soft-tissue reconstructions) or primary fusions (category included all limited intercarpal fusions).

The included studies of soft-tissue reconstruction used a variety of different methods: dorsal radioscaphoid capsulodesis; extensor carpi radialis brevis or longus tenodesis through the various carpal bones; extensor carpi radialis brevis or other wrist extensor tenodesis; palmar reconstruction with K-wires; bone-retinaculum-bone; scapholunate repair with other procedures; capsulodesis with other procedures; and flexor carpi radialis tenodesis distal scaphoid into dorsal radius. The included studies of limited intercarpal fusion used triscaphe, scapholunate, scaphocapitolunate and scaphoid-lunate-capitate-triquetrum arthrodesis.

Participants included in the review
The inclusion criteria were not specified in terms of participants, but it was clear that studies of patients with dynamic or static chronic scapholunate dissociation were included. Where possible, only patients with a diagnosis of scapholunate dissociation were included from studies in which the participants had a variety of diagnoses. Studies of patients with perilunate dislocations were excluded. Where stated, the participants in the included studies had an average time to surgery ranging from more than 1 month to 58 months.

Outcomes assessed in the review
The inclusion criteria were not specified in terms of outcomes. The outcomes used were post-operative range of motion as a percentage of flexion-extension compared with the unaffected side, grip strength as a percentage compared with the unaffected side, and the number of patients with painful symptoms and complications. Where reported, the included studies followed up patients from 6 months to a mean of 57.6 months.

How were decisions on the relevance of primary studies made?
Quality appears to have been assessed, but the authors did not state who performed the assessment.
Assessment of study quality
The authors stated that the quality of published results was assessed, but no details were presented. Quality appears to have been assessed, but the authors did not state who performed the assessment.

Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction. The extracted data included the number of patients, average time to surgery and duration of follow-up. Where patients had undergone bilateral procedures, the number of patients was counted as two. Where studies only reported absolute values for range of motion, a normal value of 150 degrees flexion-extension was used for the unaffected side.

Methods of synthesis
How were the studies combined?
Details of the individual studies were tabulated but not synthesised.

How were differences between studies investigated?
The authors stated that the studies were heterogeneous and the evidence was weak, thus the authors decided against further analysis.

Results of the review
Twenty-seven case series (512 patients) were included in the assessment of efficacy: 17 case series of soft-tissue scapholunate reconstruction (386 patients) and 10 case series of limited intercarpal fusion (126 patients). Two additional studies that reported complications were mentioned in the text.

No studies comparing different treatments were identified. No study reported the efficacy of surgery. The case series identified were too heterogeneous for a meta-analysis.

There was no standard definition of complication and the rates varied between studies. The reported complications included reflex sympathetic dystrophy, skeletal nonunion, various types of mechanical pain and infections (mostly superficial).

Authors’ conclusions
There was insufficient evidence to compare the effectiveness of soft-tissue and limited wrist fusion in patients with scapholunate dissociation.

CRD commentary
The review question was clear in terms of the participants and intervention, although inclusion criteria were not explicitly defined for the participants, study design or outcomes. Only two databases were searched for studies published in English, and this might have resulted in other relevant studies being missed. No attempt was made to locate unpublished studies, thus raising the possibility of missing relevant data and publication bias. The methods used to select the studies, assess validity and extract the data were not described; hence, any efforts made to reduce errors and bias cannot be judged.

The evidence was not adequately summarised. Some of the tabulated studies were discussed in the text, but not others. Given the evidence presented, the authors’ conclusion that there was insufficient evidence to draw definitive conclusions about whether soft-tissue repairs produce better results than limited wrist fusion seems appropriate.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.
Research: The authors stated that multicentre randomised controlled trials are required to compare different treatments for patients with scapholunate dissociation.

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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.