

FROM THE FAMILY PRACTICE INQUIRIES NETWORK

Does surgery for carpal tunnel syndrome improve outcomes?

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Photocopy for your patients ***“What is carpal tunnel syndrome?”***

■ EVIDENCE-BASED ANSWER

Good evidence supports the use of surgery for carpal tunnel syndrome over nonsurgical therapies such as wrist splints, nonsteroidal anti-inflammatory drugs (NSAIDs), physical therapy, occupational therapy, local steroid injections, work modification, and oral vitamin B₆ (Grade of Recommendation: **A**, based on extrapolation from a systematic review of 1 randomized controlled trial [RCT], 1 additional recent RCT, and 2 cohort studies). Surgery is likely worth the extra costs when conservative therapy (up to 3 months) fails to improve symptoms and return of function, because delayed surgery is as successful as surgery performed shortly after diagnosis. Closed endoscopic release and open release surgery are equally effective therapies for controlling symptoms (Grade of Recommendation: **C**, based on extrapolation from a systematic review of RCTs). However, whether endoscopic release results in more rapid regain of function and return to work is unclear.

■ EVIDENCE SUMMARY

A recent Cochrane review based on only 1 RCT of 22 patients published in 1964 concluded that surgical treatment of carpal tunnel syndrome appears to be more effective than wrist splinting.¹ A well-designed RCT of 176 patients published since that Cochrane review stated that with regard to overall improvement of symptoms and function status, surgical treatment of carpal tunnel syndrome was more effective than wrist splinting 18 months posttreatment.² The investigators found that surgery resulted in worse short-term outcomes at 1 month follow-up (29% vs 42% success), but by 3 months the improvement in all outcomes was greater in the surgery group (80% vs 54% success). The number needed to treat (NNT) over 18 months was only 2 patients in the treatment-received (per protocol) analysis (92% vs 37% success) and 7 in the intention-to-treat analysis (90% vs 75% success). Patients in the conservative treatment group who underwent surgery after splinting had failed

had a higher success rate after 18 months follow-up than patients who did not have surgery (94% vs 62% success rate; NNT = 3).

One cohort study of 90 patients concluded that with respect to symptom control and return to function, open release surgery was as effective as local steroid injection at 1 month follow-up.³ However, at 4 to 6 months after the operation, surgery patients were found to have significantly improved symptom and function scores, with continued improvement compared with patients who received the steroid injection. One other cohort study of 429 patients found that surgery (open or closed endoscopic) was more effective with respect to symptom relief and functional status than various nonsurgical therapies (NSAIDs, splints, physical or occupational therapy, local steroid injections, work modification, or vitamin B₆) at 30 months follow-up.⁴ In both cohort studies, the patients' pretreatment symptom and functioning scores were worse in the surgery group than in the nonsurgical group. The investigators in the first study³ did not report controlling for these scores. In the second study,⁴ the authors controlled for functional status scores, but not for symptom severity.

One recent systematic review of 14 RCTs comparing types of surgical therapies for carpal tunnel syndrome concluded that none of the alternative surgical procedures, including closed endoscopic release, appeared to give better symptom relief than open release; and that the evidence is conflicting as to whether endoscopic release results in earlier return to work or improved level of function.⁵

■ RECOMMENDATIONS FROM OTHERS

The American Society of Plastic and Reconstructive Surgeons recommends surgical release in the following situations⁶: (1) failed or incomplete conservative therapy; (2) motor weakness or thenar atrophy; (3) lumbrical pattern symptoms (occur when the metacarpophalangeal joints are held at 90 degrees, eg, driving, letter writing, holding a magazine, pinching, using a small tool); (4) severe pattern on electrical studies (not defined); (5) space-occupying lesions requiring excision; (6) acute carpal tunnel syndrome with symptoms lasting longer than 6 to 8 hours; and (7) progressive or severe symptoms lasting longer than 12 months. The Society did not recommend one surgical procedure over another.

CLINICAL COMMENTARY

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In my practice, many patients have carpal tunnel syndrome and we regularly struggle with the question of whether and when to suggest surgical consultation. This review will make that struggle easier. With at least 33% of cases responding to splinting alone, an initial trial of conservative treatment seems appropriate for most patients. However, early surgical referral when a conservative approach has failed can now be easily justified, given the 90% or better success rate with surgery. The authors also include guidelines from the American Society of Plastic and Reconstructive Surgeons, which may be helpful in selecting which patients should go directly to surgical release.

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