Splinting vs surgery for carpal tunnel syndrome - Reply

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To the Editor: In the study by Dr Gerritsen and colleagues,[1] several patients from the splinting group underwent surgery before completing the 18-month follow-up even though the trend of success was increasing for the splint group and decreasing (after 6 months) for the surgery group. In addition, only 31% received custom splints, which are known to yield higher compliance and better results.[2] It is likewise noteworthy that the splint protocol was only for nighttime use, which has been demonstrated to be less effective than full-time wear.[3] Comparison of splints to surgery is a futile effort. It might be appropriate to compare surgery with steroid injection, or with a combination of conservative methods, but not to splinting in isolation. A typical treatment plan for CTS applies a multifaceted approach, including anti-inflammatory medication with splinting, in addition to various forms of physical therapy, exercises, and manipulation.[4]

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1. Gerritsen AAM, de Vet HCW, Scholten RJPM, Bertelsmann FW, de Krom MCTF, Bouter LM. Splinting vs surgery in the treatment of carpal tunnel syndrome: a randomized controlled trial. *JAMA.* 2002;288:1245-1251.
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To the Editor: In their study, Dr Gerritsen and colleagues[1] confirmed the diagnosis of CTS with electrophysiological testing. It is possible, however, that discrepancies between functional nerve conduction studies and structural imaging techniques may predict response to conservative or surgical treatment. It appears that conventional sonography has less sensitivity than nerve conduction studies (0.70 vs 0.98, respectively), but greater specificity (0.63 vs 0.19, respectively).[2] Inclusion of sonographic measurement of the median nerve cross-sectional area performs even better, with sensitivity as high as 89% and a specificity of 83%.[3] Higher ultrasound frequencies (≤15 MHz) allow excellent resolution for differentiation of mild nerve alterations.[4] Addition of color Doppler sonography could further help in delineation of an underlying inflammatory process.

Furthermore, local corticosteroid injection is an anti-inflammatory conservative approach.[5] In one study, 50% of patients (compared with 7% of controls) did not need a further treatment after a single local injection of corticosteroids.[6] Sonographic imaging may help to diagnose inflammatory CTS, which would be more likely to respond to local corticosteroid injections. After exclusion of these patients with inflammatory CTS, the success rate for surgical interventions may be even higher.

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In Reply: Dr Bleecker states that we should have excluded individuals with work-related CTS. We doubt that absence of exposure to ergonomic stressors in the surgery group is the major reason for the difference in success rates between the groups. In our study, only 28% of the patients in the surgery group and 37% in the splint group indicated that their complaints might have been due to their normal daily activities, including work. Furthermore, absence from paid labor (during the whole trial) was only 12 days on average in the surgery group.

Dr Johnson suggests that nerve latencies are not the best measure for the diagnosis of CTS. Although we also measured amplitudes, the inclusion criteria were based on the current protocol of the Dutch Association of Clinical Neurophysiology. The primary outcome measures used in our study were subjective, as these are the most important for clinical practice. Although we obtained data on grip and key pinch strength, Semmes-Weinstein monofilament testing, and nerve conduction parameters, none of these objective measures correlated with the patients' subjective ratings.[1] We believe that this renders the objective measures less helpful for effect evaluation.

We agree with Dr Menkes that surgery might be beneficial for asymptomatic MNW with significant nerve conduction abnormalities. However, we do not have data to support this because such patients were not included in our study. Although we could analyze the patients in the surgery group with a prolonged baseline distal motor latency to determine if progression was prevented by the treatment. However, it is not possible to analyze progression of distal motor latency in patients with a prolonged baseline distal motor latency and treated by splinting alone because these numbers are so small.