

COMMENTARY

Ultrasound assessment of carpal tunnel syndrome

There has long been interest in the use of imaging to assess the carpal tunnel in patients with suspected median nerve compression. I was first drawn to this subject in the early 1980s by an article on the use of computed tomography (CT) in this context.¹ Around the same time we were starting to use ultrasound in the musculoskeletal system and it seemed obvious to try this as well. We were using static B scanning equipment with resolution that was, by today's standards, pathetic. We tried comparing the diameter of the carpal tunnel as measured on CT with ultrasound and reached no firm conclusions. I am delighted to see that up-to-date equipment is now being appropriately used to assess the carpal tunnel in patients with symptoms of median nerve compression.

In this issue there are two articles^{2,3} from separate institutions in Turkey where ultrasound was used to assess patients with median nerve compression. They both provide evidence that alteration of the cross-section area, flattening and swelling have strong associations with symptomatic carpal tunnel syndrome and correlate well with nerve conduction studies. Although the data do not suggest that this is the definitive method of confirming the diagnosis of carpal tunnel compression, it is a positive step forward suggesting that in equivocal cases ultrasound may be the best means of confirming or refuting the diagnosis.

Up until now imaging of the carpal tunnel has been principally directed at the assessment of patients who fail to respond to surgical decompression. Both ultrasound and magnetic resonance imaging (MRI) are used to look for space-occupying lesions including ganglia, fibromata and neural tumours. Ultrasound has more recently been used to assess the more proximal median nerve, and there are now texts on peripheral nerve ultrasound.⁴ As carpal tunnel syndrome is one of the

more straightforward clinical diagnoses, and one that responds very effectively to treatment, there is no strong pressure to introduce an extra screening tool. However, the new papers suggest that ultrasound is useful in the problem case when there is doubt about the presentation.

It would not be too difficult to assess a group of patients prospectively to determine how ultrasound might influence management and to see whether the number of "failed operations" may be reduced. Of course this might be like opening Pandora's box and such a study will have to be carefully assessed for the impact on the overall cost of care. Perhaps the most important question to address is whether a normal ultrasound examination might exclude patients who would benefit from surgery. I look forward to the results of such applied research over the next few years.

References

1. John V, Nau HE, Nahser HC, Reinhardt V, Venjakob K. CT of carpal tunnel syndrome. *AJNR Am J Neuroradiol* 1983;4: 770–2.
2. Yesildag A, Kutluhan S, Sengul N, et al. The role of ultrasonographic measurements of median nerve in the diagnosis of carpal tunnel syndrome. *Clin Radiol* 2004;59: 910–15.
3. Altinok T, Baysal O, Karakas HM, et al. Ultrasonographic assessment of mild and moderate idiopathic carpal tunnel syndrome. *Clin Radiol* 2004;59:916–25.
4. Peer, S, Bodner, G, editors. *High-Resolution Sonography of the Peripheral Nervous System*. Springer; 2003.

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