Carpal tunnel syndrome

Use of screening blood tests in patients with carpal tunnel syndrome

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Is it worth performing screening investigations in patients with carpal tunnel syndrome without clinical evidence of other diseases?

Carpal tunnel syndrome (CTS) has a fair claim to being the world's commonest neurological disorder. The way in which it is investigated and treated has substantial economic consequences. One aspect of this is addressed by de Rijk and colleagues¹ in this issue of the journal—the utility of screening blood tests in patients with CTS (see p 635). The suggestion that such investigation may not be worthwhile is not new.² Screening is predicated on the belief that CTS is often secondary to medical disease and CTS has been associated with over 200 disorders. Many such reports pre-date the realisation that CTS has a population prevalence of 5%,³ and probably represents coincidental findings in patients presenting with other problems. Few associations have been subject to rigorous analysis.

Studies of routine records suggest a higher incidence of inflammatory arthritis, diabetes and hypothyroidism in CTS patients. However, of three studies comparing CTS patients with control groups, two did not find diabetes or thyroid disease to be independently significantly associated in multiple regression analyses.^{4–5} On the other hand, CTS may resolve after treatment of thyroid disease

although not diabetes. It appears that the notion that diabetes and thyroid disease predispose to CTS is based on flimsy evidence. If a link exists it is possible that a hidden variable, perhaps obesity which is linked with all three disorders, might be responsible for the association.

Even if we accept that these disorders are causally linked with CTS, it still does not follow that screening investigations are appropriate in all cases. Both the benefits and costs of screening require evaluation. de Rijk and colleagues¹ have demonstrated that a small number of previously unrecognised cases of diabetes and thyroid disease were detected but the retrospective nature of the study precludes us knowing whether these diagnoses were clinically suspected at presentation. For a screening test to be cost effective it has to detect cases which are not clinically suspected at a time when therapeutic intervention offers benefits. There is evidence that early intervention in diabetes can influence the development of macrovascular complications. For thyroid disease, the principal benefit of screening is the possibility that the CTS may not need specific treatment if the thyroid state is corrected. The costs are more complex than simply

the cost of the initial blood test. As in many examples of screening for low prevalence conditions, de Rijk's results show that there are many more false positive than true positive results. The direct economic costs of the resulting follow-up investigations are included in de Rijk's analysis but there is also considerable anxiety and inconvenience for the patients.

Clinical assessment of the patient presenting with CTS should therefore include consideration of the possibilities of endocrine or rheumatological disease. If these are clinically suspected then appropriate investigation and treatment should be instituted. A definitive answer to whether it is worth performing screening investigations in patients without clinical evidence of other disease will have to await a prospective study.

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REFERENCES

- 1 de Rijk MC, Vermeij FH, Sijtsma M, et al. Does a carpal tunnel syndrome predict an underlying disease? *J Neurol Neurosurg Psychiatry* 2007;**78**:635–7.
- 2 Chaplin E, Kasdan ML. The carpal tunnel syndrome and routine blood chemistries. *Plast Reconstr Surg* 1985;**75**:722–4.
- 3 de Krom MC, Knipschild PG, Kester AD, et al. Carpal tunnel syndrome, prevalence in the general population. *J Clin Epidemiol* 1992;**45**:373–6.
- 4 de Krom MC, Kester ADM, Knipschild PG, et al. Risk factors for carpal tunnel syndrome. *Am J Epidemiol* 1990;**132**:1102–10.
- 5 Kishner S, Morstead R, Mercante D. Risk factors associated with carpal tunnel syndrome. *Clin Neurophysiol* 2000;**111**:2368.