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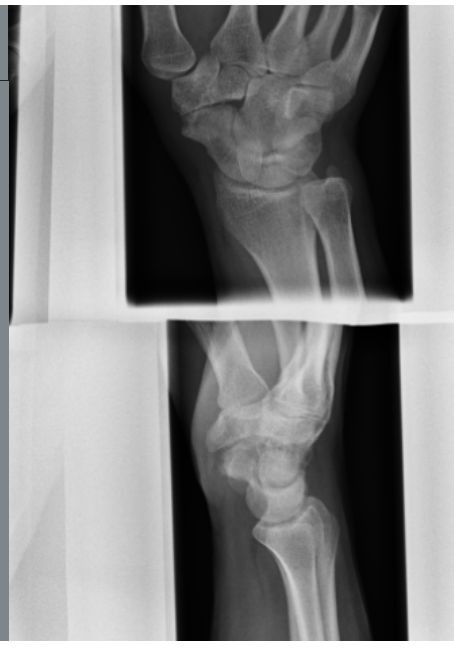
GP DIAGNOSTICS AND SPLINT TREATMENT OF CARPAL TUNNEL SYNDROME AND TRAPEZIOMETACARPAL ARTHRITIS

B Povlsen Consultant Orthopaedic Surgeon[1]
AC Raymond Anatomy Demonstrator[2]
[1]Guy's and St Thomas' NHS Foundation Trust
[2]King's College London



Carpal tunnel syndrome (CTS) and trapeziometacarpal joint osteoarthritis (TMCJ OA) are common problems in the UK.[1,2] Given the current financial climate, it is particularly important to improve cost effectiveness and avoid unnecessary patient referrals to the more expensive secondary care services. This could be achieved by initial management of these conditions in the primary care setting. For this to be possible, GPs must be able to make a reliable clinical diagnosis for these conditions. To our knowledge there are no studies that evaluate the reliability of GPs when making clinical diagnoses of CTS and TMCJ OA.

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GPs must also be satisfied that the conservative treatment that they are able to provide can change the patient's wish for further invasive treatment. Though several publications have shown that splint treatment can be of benefit to patients with CTS,[3,4] none have investigated how splint treatment influences the patient's wish for further invasive treatment, which is particularly important as the literature suggests that surgery may be more successful than splint treatment.[5] For TMCJ OA there have also been several studies suggesting the benefit of splint treatment[6,7] and one study has shown that the need for surgery can be reduced by 65% if splint treatment is continued up to the seven-year follow-up.[7]

The aims of this study were to investigate the reliability of clinical GP diagnoses for CTS and TMCJ OA, and to investigate how splint treatment influences a patient's wish for further invasive treatment of these conditions.

Methods

A total of 106 consecutive GP patient referrals with clinical descriptions suggesting CTS or TMCJ OA were included in the study but patients with known or suspected chronic inflammatory systemic conditions were excluded. Ninety-three patients attended the secondary care specialist hand clinic for a diagnostic assessment. One patient had both CTS and TMCJ OA and was therefore registered in both groups. The diagnosis was reached by using clinical criteria as described in previous papers on these subjects[7,8] without any objective investigations such as neurophysiology or radiology. Neurophysiological investigation is only required if primary clinical signs of CTS are absent.[8]

Eighty-four patients were included for treatment. Nine patients assessed in the specialist clinic were excluded on clinical grounds. Seventy-five patients had been diagnosed with CTS and nine with TMCJ OA. The CTS patients were provided with prefabricated Futuro® splints (3M, Bracknell, UK) for the affected hands and asked to use them at night. The TMCJ OA patients were provided with prefabricated thumb spica splints with instructions to use them during physical activities. All patients were asked to return to a follow-up clinic three months later. The CTS patients were then asked whether they wished to proceed with surgical decompression and the TMCJ OA patients were asked if they wished to proceed with x-ray guided steroid injection treatment or trapezectomy.

Results

The GPs' referral letters gave 68 patients a specific CTS diagnosis and 5 patients a specific TMCJ OA diagnosis. The remainder of the 93 assessed patients did not have a specific diagnosis of CTS or TMCJ OA. In the specialist hand clinic, 62 of the 68 patients (91%) given a specific CTS diagnosis by the GP had this diagnosis confirmed while all 5 cases with a specific GP diagnosis of TMCJ OA were confirmed. The aggregated diagnostic agreement with the primary care diagnosis was therefore 92% for these two diagnoses.

Of the 93 patients assessed in the specialist clinic, 9 were excluded on clinical grounds, 75 patients were diagnosed with CTS and 9 patients with TMCJ OA. They

were treated with the splints programme as described above and at the 3-month follow-up visit, 52 of the 75 CTS patients (69%) declined the offer of surgical decompression and 8 of the 9 TMCJ OA patients (89%) declined the offer of x-ray guided steroid injection treatment or trapezectomy. The aggregated rejection rate of further invasive treatment was therefore 71% for these two diagnoses.

Discussion

There are no previous studies that directly evaluate the diagnostic agreement between clinical diagnoses of CTS or TMCJ OA made by GPs and specialist hand surgeons. Our study shows a high rate of concordance between the clinical diagnoses made by GPs and specialist clinicians for both CTS and TMCJ OA when a specific GP diagnosis was given. This indicates that GPs who have specifically diagnosed either CTS or TMCJ OA are usually correct in their clinical diagnosis. The study also shows that most patients with either of these two diagnoses do not need further objective investigation prior to commencing treatment with prefabricated splints as few will want further surgical intervention after a three-month period of such treatment.

The patients were selected for clinical assessment by the lead specialist consultant based on the referral letters written by the GPs to the specialist's clinic. For the purpose of this study, only clinical and not objective neurophysiologic or radiological investigations were used for the diagnoses of CTS and TMCJ OA and they therefore remain subjective. This may have introduced bias. However, the study situation simulates the reality in most GP practices where such objective investigations are less accessible than in a secondary care facility. Notwithstanding these uncertainties, the diagnostic agreement between the primary and secondary specialist was high, suggesting that a substantial number of patients after a three-month splint treatment period do not need specialist secondary care. The immediate provision of splints in primary care would also speed up the appropriate treatment for most patients and represents a care improvement in addition to the expected cost saving.

Day *et al* showed that those patients who benefit from the splint treatment for TMCJ OA are likely to be found in the first six weeks[6] and the study by Berggren *et al* showed that between the 7-month and 7-year follow-up visits the effect of the splints only decreased slightly, with an additional of 2 of the 33 original patients (6%) later accepting the offer of surgery for TMCJ OA.[7] This suggests that we would have found more patients who declined the offer of surgical intervention if we had conducted the follow-up evaluation earlier than three months and maybe fewer patients if it was done later.

In our study, 8 of the 9 patients (91%) with TMCJ OA declined the offer of surgical intervention after 3 months of thumb spica splint treatment. This compares favourably with the results from Berggren *et al* who found at 7 months that 23 of 33 patients declined the offer of surgical intervention.[7] Their results during the next 6.5 years only deteriorated by 6%, suggesting that the majority of the patients in our study who declined surgical intervention after 3 months of thumb spica splint treatment are likely to continue to benefit from the splint treatment for many years to come. To our knowledge, there have not been any previous reports on the percentage of patients diagnosed with CTS who decline surgical intervention after a certain period of Futuro® splint treatment.

Possible weaknesses of the study

It could be argued that the numbers are small; however, the numbers in this paper for the CTS group was similar to those in the study by Manente *et al*.[3] There could also be concerns about the compliance rate. We have no way of knowing how many of the patients actually used the splints, the frequency or the length. This problem is present in all similar previous studies. What we do know is that the patients told us that they all tried to use the splints. Similarly, we accept that we did not issue a written protocol to the participants. Instead, the patients were all fitted with splints in the clinic and they were aware that if the splint treatment failed, surgery would be the only alternative.

We chose a three-month follow-up duration to improve on the relatively short four-week follow-up period in the study by Manente *et al*.[3] It could be argued that a diagnosis on clinical examination should be supplemented by confirmation from a neurophysiological test. We are of the opinion, as supported by Wilder-Smith *et al*,[8] that neurophysiological investigation is only required if primary clinical signs of CTS are absent.

Conclusions

Our findings and those from previous publications should encourage GPs who diagnose either CTS or TMCJ OA to be confident that their clinical diagnosis is likely to be correct. These conditions can be treated successfully without objective investigations with neurophysiological or radiological confirmation prior to starting splint treatment. Only patients who do not have a clear diagnosis or who do not respond satisfactorily and who want to contemplate further surgical intervention need to be referred to a secondary specialist clinic.

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