An audit of nerve conduction studies in the investigation of carpal tunnel syndrome

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Carpal tunnel syndrome is a relatively common condition. It is uncommon under the age of 30, only 10% of cases occur in this age group, and it becomes more common with age; approximately 3:100 men and 5:100 women will have symptoms in their lifetime.

It is recognised to have a combination of symptoms, clinical, and electrophysiological findings; not one of these in isolation can give a definitive diagnosis. In most, but by no means all, cases the diagnosis is clear; nevertheless, nerve conduction may well have a role, either to confirm the diagnosis or suggest other diagnoses may need to be considered.

In 2006, open access nerve conduction testing was initiated across University Hospitals of Morecambe Bay (UHMB) sites – Westmorland General Hospital (WGH), Royal Lancaster Infirmary (RLI) and Furness General Hospital (FGH). An audit at the time showed improved time to treatment for patients after introduction of open access.

We felt it was time to review how useful this service is, and whether it is being fully utilised or even still needed.

We used data from November and December 2013. We felt this would give ample time to follow patients to treatment. Our aim was to look at whether open access nerve conduction studies do shorten time to treatment and if it is still of value.

We reviewed 20 patients referred to an orthopaedic clinic, including to the locum hand surgeon, and five who were referred for open access nerve conduction which proved to be positive and so were referred by neurophysiology to an orthopaedic clinic. We did intend to look at a greater number, but felt the results became clear-cut with this smaller sample.

We recorded the date as signed by the general practitioner (GP), the date of arrival of initial referral from GP, date of test, and date to where treatment was planned or where it was decided other diagnosis likely.

Waiting time to clinic in days	
GP referral to orthopaedic outpatients clinic appointment	23–64
GP referral to open access clinic test date	17-27

Waiting time for nerve conduction studies (NCS) is in the region of four weeks. Waiting time to outpatient clinic appointment is three-plus to nine weeks.

It would be possible in most cases to request NCS; have a result emailed to GP within four to six weeks. FGH may be nearer to six weeks.



Our suggestion would be to ask for NCS and expect a result in that time, or state on the request form orthopaedic clinic referral requested – the results from nerve conduction are available on the electronic patient record system (Lorenzo) on the same or next day.



Figure 2 Recording median motor latency across the wrist



Figure 3 Recording median sensory latency across the wrist

One alternative would be greater use of the open access option available to GP surgeries for nerve conduction studies.

Open access is available across UHMB sites. There is a form available which can be emailed again to any surgery who would like a copy. This formed can be addressed to Brian Bickerstaffe, EEG Department at RLI, or email brian.bickerstaffe@mbht.nhs.uk These findings were presented at the orthopaedic department audit in October 2014. They felt it would be useful if we could circulate the findings to GPs across the Bay area, as uptake of the open access system is greater in certain areas.



e	Lat. 2 ms	Peak Ampl µV	Nerve / Sites	Latency ms	Amp mV
			L MEDIAN - APB		
	3.65	2.3	Wrist	4.30	1.3
			R MEDIAN - APB		
	4.85	0.77	Wrist	5.45	0.2
				- 1	
	3.35	2.9			
	3.35	2.9			

Recording from a patient with a right-sided median nerve lesion. There is sensory delay in the right median nerve and reduced amplitude on the right in comparison with that on the left. The ulnar nerve on the same side is also included in the study by convention.