Reviewer's report

Title: Extended effective electrodiagnosis in ulnar nerve entrapment at the elbow

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Reviewer: Zsuzsanna Arányi

Reviewer's report:

Review of the manuscript „Extended effective electrodiagnosis in ulnar nerve entrapment at the elbow”:

The clinical significance of the electrodiagnosis of ulnar nerve lesions, one of the most common referral diagnoses in EMG besides carpal tunnel syndrome, in itself renders this manuscript an important contribution. This is further strengthened by the large number of patients, the several different types electrodiagnostic methods carried out and compared by the authors. The manuscript is well written and there are no major linguistic problems.

I have the following comments to make:

1. Major Compulsory Revisions
   None.

2. Minor Essential Revisions
   There are very few typographical or grammatical errors (e.g. „standards protocol”, instead of 'standard protocol'; „departments” instead of 'department’s'; „p-values <0.05 was considered” instead of 'p-values <0.05 were considered'; etc.).

3. Discretionary Revisions
   • One of the conclusions of the authors is that electrodiagnostic work-up is needed for the diagnosis of ulnar nerve lesion at the elbow. This statement is too obvious as to make it a major conclusion.
   • Another conclusion is that the use of a motor nerve conduction study with three stimulation sites at the elbow is more sensitive than with two stimulation sites in the diagnosis of ulnar nerve lesion at the elbow. This method is an intermediate between the standard ulnar nerve conduction study and the segmental (' inching') nerve conduction study, which is widely used in many laboratories as part of the routine assessment of the ulnar nerve. With its help, ulnar nerve lesion can be very precisely localised to for example the retroepicondylar region. I miss the comparison of the method advocated by the authors and to the inching method, and the discussion of the possible advantages of their method.
   • From the data provided it is seen that conduction velocity is reduced on the forearm in about 20% of patients. In the authors’ opinion, is this mainly observed in patients with already pronounced axonal lesion, or is it explained by other
factors? Are there anatomical data supporting that a stimulation point 4 cm distal to the midpoint of the sulcus is below the cubital tunnel in most patients?

- The authors have done an orthodromic ulnar sensory nerve conduction study with recording at the wrist, and have found a relatively low proportion of abnormality. With this method, only axonal sensory nerve fiber damage can be assessed, whereas the widely used antidromic method with three stimulation points (wrist, below and above the elbow) may also detect demyelinative lesion in the sulcus. Do the authors have experience with it? Why was the orthodromic method chosen?

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.