Cubital tunnel syndrome with false-negative nerve conduction studies treated with wide awake ulnar nerve decompression via the OSWA pathway

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Abstract

Introduction
This case study presents a case of cubital tunnel syndrome where false-negative nerve conduction studies delayed the definitive wide awake surgical decompression.

Case Report
A 40-year-old right-handed scientist presented with a five-year history of left upper limb pain: with radiation of pain, tingling and pins and needles into the little and ring fingers; and with associated sensory disturbance of the little finger. She was managed according to the OSWA Ulnar Nerve Entrapment Pathway, with a clinical diagnosis of unilateral isolated ulnar nerve dysfunction at the elbow in the cubital tunnel. At surgery, the ulnar nerve was severely compressed in the cubital tunnel and this entrapment was fully relieved. There were no complications. The patient reported immediate and sustained improvement in her symptoms.

Conclusion
The potential advantages of wide awake upper limb surgery are seen in this case; with a balance of pros and cons and risks and benefits enabling the correct management decision to be made.

Introduction
The experience of the authors with wide awake ulnar nerve surgery has previously been reported in this journal. Another case is now presented, which highlights that electrophysiological testing may give a false-negative result which may inhibit the patient’s treatment pathway.

Case report
A forty-year-old right-handed scientist presented with a five-year history of left upper limb pain: with radiation of pain, tingling and pins and needles into the little and ring fingers; and with associated sensory disturbance of the little finger. On examination, the ulnar nerve was irritable at the elbow; with positive Tinel’s, Ulnar Biro and Cubital Scratch Collapse tests; and associated sensory disturbance in the ulnar nerve distribution. Nerve conduction studies were negative. Because of the negative electrophysiology, she had been counselled against surgery by two upper limb orthopaedic surgeons, despite their acknowledgement of the clinical signs and symptoms relating to the ulnar nerve, and her intrusive symptoms had continued for five years.

After referral to the wide awake hand surgery clinic (and after a discussion of pros and cons and risks and benefits), she was managed according to the OSWA Ulnar Nerve Entrapment Pathway, with a clinical diagnosis of unilateral isolated ulnar nerve dysfunction at the elbow in the cubital tunnel (Figure 1).

Wide awake cubital tunnel decompression surgery was performed under local anaesthesia using 10 ml of 2% *Xylocaine* with 1:20000 adrenaline, with no tourniquet. At surgery, the ulnar nerve was severely compressed in the cubital tunnel and this entrapment was fully relieved (Figure 2). There were no complications. The patient reported immediate and sustained improvement in her symptoms (Appendix 1): ‘I experienced great relief of pain straight after the operation’. Specifically, she

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Figure 1: Patient management.
Case report

Sensory deficit and without muscle wasting, as in this case. Through wide awake ulnar nerve decompression, we use only a field block and do not block the peripheral nerve. This means we can utilize the patient’s intraoperative feedback to gauge the adequacy of the cubital tunnel release. In this case, as is the norm, the patient experiences an increase in symptoms when the surgeon is releasing the constricted parts of the cubital tunnel. As soon as the full cubital tunnel release has been performed, the patient experiences immediate improvement in the symptoms. This is clearly not possible in the case of general or regional anaesthesia or if sedation is used.

The decision to proceed with wide awake cubital tunnel release in this case was made easier for the patient because she was keen to avoid general or regional anaesthesia and sedation and because she was aware the surgeon (QMKB) would utilize her intraoperative feedback and the sensorimotor response to surgery to gauge the necessity for decompression and the fine tuning of this. Essentially, in these equivocal cases wide awake surgery is perhaps best considered as a ‘diagnostic decompression’.

Conclusion

The potential advantages of wide awake upper limb surgery are seen in this case with the balance of pros and cons and risks and benefits enabling the correct management decision to be made.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

References


Figure 2: Wide awake ulnar nerve decompression.
integrated one stop wide awake surgical pathway. OA Case Reports. 2013 Jun;2(5):44.

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