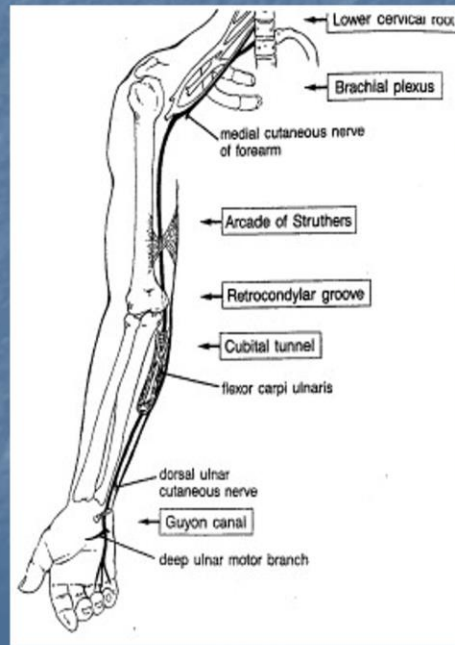


Arm – Ulnar nerve Entrapment Sites



Practice Standard

Motor and sensory studies obtained with recording electrodes

If abnormal, or normal, one needs to do further nerve conduction studies (NCS's) to

Exclude a different or more diffuse process

Study both and different nerves, using different techniques

Elbow position

Same position for stimulation and measurement

Technique is the same one used to obtain reference values

Report should specify elbow position

Hand temperature should be no less than 30 degrees centigrade

Practice Guideline – AANEM (American Association of Neuromuscular & Electrodiagnostic Medicine)

Most logical elbow position – moderate flexion, 70-90 degrees from the horizontal

Stimulate no more than 3 cm distal to the medial epicondyle

10 cm minimum between below elbow and above elbow

Inconclusive ulnar motor studies when recording from ADM – record from 1st DI

Inching study at 2 – 2.5 cm increments from the below elbow to above elbow sites

Needle EMG– including 1st DI, and other ulnar innervated muscles, FDP-ulnar, FCU

Non ulnar C8/medial cord/ lower trunk muscles -rule out brachial plexopathy, C-radikulopathy

Practice options

Recording from different muscles such as flexor carpi ulnaris

Stimulate at different sites, proximally at the axilla to rule out entrapment at arcade of Struthers's

Ulnar neuropathy – focal elbow lesion

Multiple internally consistent abnormalities

Greater than 25-30% drop in amplitude proximally

Changes in the CMAP configuration

I Slowing between different segments – in conjunction with change in amplitude

Potential for error – secondary to measurement, and changes in elbow position

Sensory changes in ulnar nerve recording from little finger, and dorsal ulnar cutaneous n

Neuropraxia – may see conduction block with amplitude change only across elbow

Axonotmesis –greater than 50% difference in CMAP with side-to-side comparison

Needle EMG with spontaneous activity in muscles distal to flexor carpi ulnaris

Ulnar neuropathy – Focal Guyon’s canal lesion

Decreased amplitude with recording from 1st DI or ADM, compared to contralateral side depending on the type

Normal amplitude, and comparable side to side with recording from ADM

Needle EMG with spontaneous activity only in 1st DI

Sensory changes with recording from little finger, not in dorsal ulnar cutaneous nerve

Latency difference of more than 1ms between ADM and FDI simultaneous recording

Ulnar nerve abnormalities at both elbows, and with sensory and motor changes

Evaluate for generalized process – sensory-motor polyneuropathy (Diabetes is commonest), critical illness neuropathy

Ulnar neuropathy References

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5. Dumitru, D, Amato AA, Zwarts M, Zwarts, MJ, *Peripheral Nervous System’s Reaction to Injury*. In Dumitru, D, Amato AA, and Zwarts, MJ, Zwarts M. editors. *Electrodiagnostic Medicine*. 2nd edition. Philadelphia: Hanley & Belfus, 2002, p. 115-156.