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A Periodical insight into the Neuromuscular Ultrasound field & the Egyptian Neuromuscular Ultrasound Society

ENMUS Bulletin

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Practical tip >>>

TO IMPROVE VISIBILITY OF AN AMBIGUOUS NERVE:

- *Trace the nerve back & forth.*
- *Incline or tilt the probe to achieve orthogonal orientation to the nerve.*
- *Ask the patient to actively contract surrounding muscles or do it passively.*
- *Rapid tracing (But not too fast 😊)*

Quote of the issue >>>



*‘Make improvements, not excuses.
Seek respect, not attention’*

-Roy T. Bennett.

Topic of the issue

Nerve mobility (written by Dr. Eman Tawfik, the ENMUS president)

Unlike tendons, peripheral nerves are considered immobile. However, some peripheral nerves have transverse and/or longitudinal excursion.¹ The two nerves that are usually assessed for mobility are the median and the ulnar nerves.

Median nerve mobility is assessed at the wrist level, and ulnar nerve mobility is assessed at the elbow level.

The median nerve is assessed for limited mobility which may result from entrapment neuropathy¹⁻³ or may occur post carpal tunnel release.⁴ The ulnar nerve is assessed for subluxation. Whether ulnar nerve subluxation is a risk factor for ulnar neuropathy or is a protective factor against ulnar neuropathy is a point of debate.⁵⁻⁶ However, knowing such variation can be useful when performing nerve conduction studies.⁷

Median nerve mobility can be assessed in the axial view by asking the patient to fully flex the fingers followed by full flexion of the wrist. Normally the nerve moves deeply and becomes surrounded by the flexor tendons (Figure 1). A grading scale for the median nerve mobility in the axial view was suggested by Cartwright and Walker.⁸

Median nerve gliding can be assessed in the longitudinal view by asking the patient to flex the fingers. Normally, the nerve exhibits slight sliding movement over the underlying flexor digitorum superficialis and flexor digitorum profundus tendons.

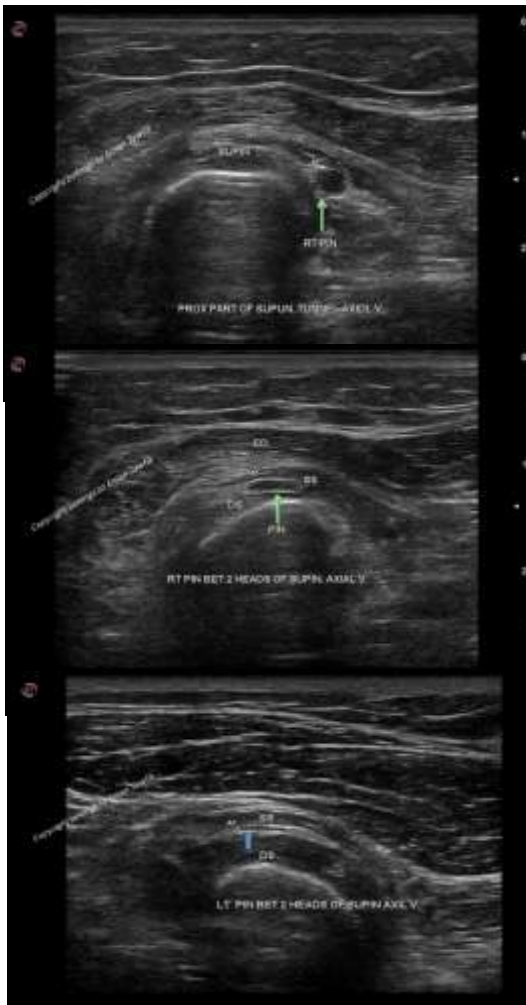
Ulnar nerve mobility is assessed at the elbow by asking the patient to fully flex the elbow with the transducer placed between the medial epicondyle and the olecranon. Normally, the nerve may move medially for few millimeters. The nerve is said to be subluxated when it moves superficial to the medial epicondyle and is said to be dislocated when it moves anterior to the medial epicondyle.⁸

Continued



References:

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7. Kim BJ, Date ES, Lee SH, Yoon JS, Hur SY, Kim SJ. Distance measure error induced by displacement of the ulnar nerve when the elbow is flexed. *Arch Phys Med Rehabil.* 2005 ;86:809-812.
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Case of the Issue (by Dr Eman Tawfik)

A 40 years old man was referred to the EMG lab for nerve conduction and electromyography studies for the right radial nerve after humeral fracture.

Ultrasonography revealed mild enlargement of the left radial nerve at the spiral groove when compared to the left side with no significant side-to-side difference in CSA at the elbow and above the elbow.

on tracing of the deep radial branch, Its CSA was within average values before it enters the supinator tunnel. **However**, it abruptly enlarged at the proximal part of the tunnel and at the middle of the tunnel as it passes between the 2 heads of the supinator muscle reaching a CSA of 5 mm² with significant side-to-side difference in CSA when compared to the left side (= 1 mm²) at the same levels. At the distal part of the tunnel, the CSA returned to average values. These findings denote focal swelling of the posterior interosseus nerve and reflects local entrapment.


The exact cause of this unexpected finding distant from the trauma site (named tandem lesion) is not known but believed to reflect traction on the PIN at the time of trauma causing stretch injury as suggested by Erra et al (Erra et al. *Secondary posterior interosseus nerve lesions associated with humeral fractures Muscle Nerve* 2016;53: 375-378).

Concluding Tip

Do not just scan the nerve at the trauma site, always trace the entire course of the nerve to avoid missing tandem lesions

YOU NEVER KNOW WHAT YOU WILL FIND!

Mark your calendar.....August 2020 & meet the Experts at unique event!



**ONLINE LIVE NEUROMUSCULAR ULTRASOUND COURSE
INTERMEDIATE LEVEL – AUGUST 27-28, 2020**

1st INMUC 2020 WILL GO VIRTUAL!





You don't have to worry about safety. The 1st International Neuromuscular Ultrasound Course (INMUC) of the Egyptian Neuromuscular Ultrasound Society will go VIRTUAL this year on the same dates of the previously scheduled face-to-face course, August 27-28, 2020

LECTURES & DEMO VIDEOS


The course will include interesting lectures that will cover the learning objectives of the intermediate-level neuromuscular ultrasound course, presented in a practical applied form.

IT is not all lectures, the course will also include Demo Videos showing scanning protocols and tracing techniques for nerves & muscles to enhance the practical aspect

Faculty (alphabetical order by the last name)

 Prof. Antonis Kerasnoudis Department of Neurology, St Luke's Hospital, Greece & St Josef Hospital, Ruhr University Bochum, Germany.	 A. Prof. Doris Lieba-Samal Neurologist, Medical Center Gallneukirchen, Upper Austria, Austria	 A. Prof. Eman Tawfik Department of Physical Medicine & Rehabilitat., Faculty of Medicine, ASU, Cairo, Egypt.	 A. Prof. Natalie Winter Department of Neurology, Tübingen University, Tübingen, Germany
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The ENMUS is pleased to announce a virtual neuromuscular ultrasound Two-days course next August 2020....The 1st INMUC/intermediate-level course.

Top international faculty will join us. So mark your calendar for **August 27-28, 2020**

Registration will be open very soon!

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OR

Join the Neuromuscular ultrasound facebook group to follow the updates of the society and training courses.

www.facebook.com/EGYPTIANNMUS

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Reminder >>>>

ENMUS members are welcomed to contribute to the next issue of the bulletin

Share your case or your news by sending an email to enmus@gmail.com