

FOREARM NERVES

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1. Indications

Anesthesia and analgesia for surgery on hand.

2. Complications

Local infection

MEDIAN NERVE

The median nerve is in the middle between the palmaris longus tendon and the flexor radialis carpi tendon. This nerve can be easily followed up to the elbow to find the best position for the block.

The patient is in supine position, the arm abducted at an angle of 90° with the palm of the hand facing upward.

Use a linear high-frequency probe with 10 or 12 MHz.

Place the probe on the interior side of the wrist in a tangential plane so that the nerve can be scanned transversely (the marker on the probe is directed towards the patient's head).

The median nerve is depicted as a well defined, independent, round and hyperechoic structure. In correspondence with the nerve fascicles (honeycomb image) hypoechoic signals are identified within the structure.



Median nerve at wrist

The nerve is easily mistaken for a tendon though these deliver stronger echos; to clearly identify the nerve it is possible to just follow its course proximally which in contrast to that of a tendon does not change.

To perform the block use the in plane approach.

After preparing the investigation area and the sterile probe, introduce the needle in line with the long axis of the transducer in the same plane as the ultrasound beam. Slowly, advance the needle as parallel as possible to the probe keeping the needle tip visible at all times. (Do not insert the needle, if the tip is not clearly visible.)



If required, identify the nerves using the nerve stimulator. Now inject the local anesthetic while constantly controlling whether it is correctly spread. The drug is depicted as a hypoechoic zone that gradually spreads around the whole nerve (doughnut sign). If this is not observed, the needle must be redirected toward the other side of the nerve to achieve optimal distribution.

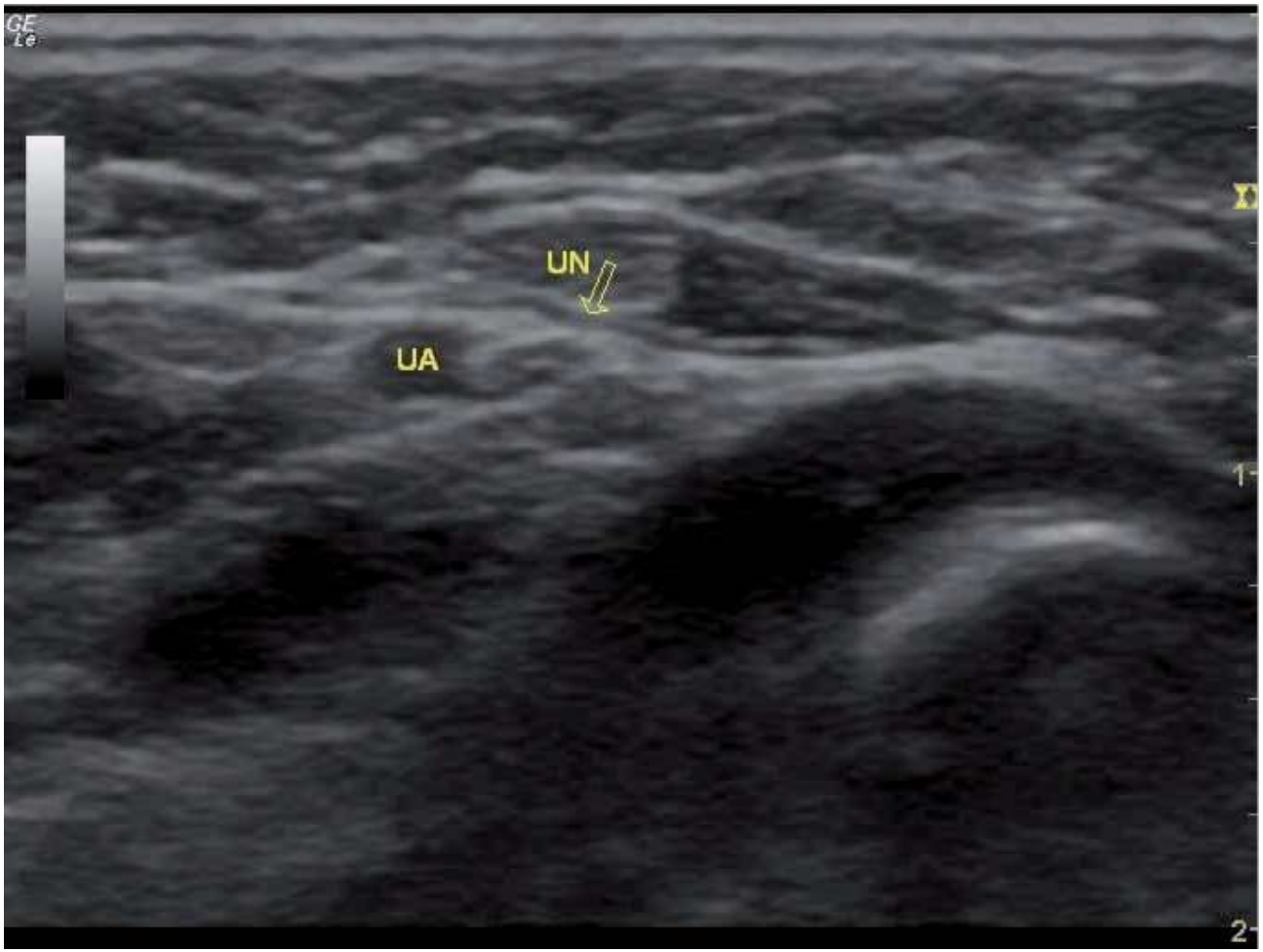
ULNAR NERVE

The ulnar nerve at wrist is lateral to the ulnar artery. This nerve can be easily followed up to the elbow to find the best position for the blockade. The patient is in supine position, the arm abducted at an angle of 90°.

Use a linear high-frequency probe with 10 or 12 MHz.

Place the probe on the interior side of the wrist in a tangential plane so that the nerve can be scanned transversely (the marker on the probe is directed towards the patient's head). The ulnar nerve is depicted as a well defined, independent, round and hyperechoic structure. In correspondence with the nerve fascicles (honeycomb image) hypoechoic signals are identified within the structure.

The nerve is easily mistaken for a tendon though these deliver stronger echos; to clearly identify the nerve it is possible to just follow its course.



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5. Volume

Generally 0,5 ml/kg of ropivacaine 0.2% or levobupivacaine 0.25% for a successful block.

6. Complications

Vascular puncture and intravascular injection (release transducer pressure before injection to detect axillar artery and vein and decrease the risk of intravenous injection).

7. References

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