

Posterior Interosseous Nerve (PIN) Block

Key Points

Patient Position: The patient may be seated or supine. The elbow is flexed approximately 20 degrees. Adjust the degree of forearm supination-pronation to obtain a clear view of the PIN and a good needle pathway.

Physician's Position: The physician may be seated either distally or proximally relative to the patient's arm.

Probe Position: Place the probe transversely over the proximal anterolateral forearm just distal to the radial head, at the level of the Arcade of Froese (approximately one finger width distal and parallel to the elbow crease). Adjust the probe position to bring the PIN to the center of the transducer.

Needle Position: With the needle in plane to the probe, approach the PIN from lateral to medial. Surround the PIN with injectate by injecting both superficial and deep to the nerve.

Precautions: Be certain to identify and avoid the superficial radial nerve and associated blood vessels (recurrent radial artery and veins). The vessels may be identified by using staged compression and Doppler.

Problem Solving: It can sometimes be difficult to identify the small PIN nerve in the fascial layer. When this occurs, it is often helpful to maintain the probe in a transverse orientation and scan proximally over the brachioradialis muscle at or above the elbow crease. At this level, one can easily identify the hyperechoic "honeycomb" appearance of the radial nerve between the hypoechoic brachioradialis (superficial to nerve) and brachialis (deep to nerve) muscles. Once the radial nerve is identified it is possible to slowly scan distally by following the nerve until it branches into the superficial radial and posterior interosseous nerves at about the same location described above for the injection. This technique will often allow the ultrasonographer to correctly identify and more accurately inject around the PIN.



Example of ultrasound image of PIN block:



The transverse radius is seen deep in this image with its typical hyperechoic round shape. Just above the radius is an oblique image of the supinator muscle followed by the hyperechoic fascia containing the relatively hypoechoic PIN. Above the PIN, and taking up the remainder of the superficial image, is the transverse brachioradialis muscle. Please note that the typical honeycomb appearance of a nerve in

transverse may not be visualized in a nerve this small. Also, if there is true nerve entrapment the nerve's cross sectional area may be larger, when measured proximal to the compression, when compared to the contralateral asymptomatic side.

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