



Video Abstract

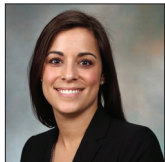
Right radial nerve decompression for refractory radial tunnel syndrome

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ABSTRACT

Background: Radial tunnel syndrome arises due to compression of the radial nerve through the radial tunnel.^[1,5] The radial nerve divides into superficial and deep branches in the forearm. The deep branch travels posteriorly through the heads of the supinator where compression commonly occurs.^[3,9,7] This syndrome results in pain in the hand and forearm with no motor weakness.^[8] This condition can be treated conservatively with splinting and anti-inflammatory medication.^[2,4,6] For cases of refractory radial tunnel syndrome, surgical management can be considered. Herein, we have presented a step-by-step video guide on how to perform a radial nerve decompression with a review of the relevant anatomy and surgical considerations.

Case Description: A 68-year-old right-handed woman presented to the Mayo Clinic (Scottsdale, AZ) with the right elbow pain which radiated to the forearm causing significant difficulties with daily tasks. She had been dealing with worsening symptoms for 4 months. The patient's history of gardening and clinical presentation allowed for diagnosis of radial tunnel syndrome. After conservative measures failed and other differential diagnoses were excluded, surgical decompression was recommended to treat her symptoms. The patient's right arm was marked preoperatively between the brachioradialis and extensor carpi radialis longus (ECRL) muscles. The posterior cutaneous nerve of the forearm was identified which allowed for the determination of the interval between the brachioradialis and ECRL. Separation of the two muscles allowed for the identification of the radial sensory nerve. A nerve stimulator was used to confirm the sensory nature of this nerve. The nerve to the extensor carpi radialis brevis (ECRB) was identified and retracted with a vessel loop. Dorsal to the nerve to the ECRB is the posterior interosseous nerve (PIN), which was identified and retracted with a vessel loop. The fascia of the ECRB was divided both longitudinally and transversely and the supinator below was identified. The supinator muscle was carefully divided to further decompress the PIN. Informed consent for publication of this material was obtained from the patient.

Conclusion: The patient tolerated the procedure well and reported significantly reduced pain at 7-month follow-up. To the best of our knowledge, video tutorials on this procedure have not been published. This video can serve as an educational guide for peripheral nerve specialists dealing with similar lesions.

Keywords: Radial nerve, Peripheral nerve, Decompression, Radial tunnel syndrome

[Video 1]-Available on:

www.surgicalneurologyint.com

Annotations^[1-9]

- 1) 0:38 – Risks and benefits of procedure.
- 2) 1:01 – Patient positioning.

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- 3) 5:15 – Procedure start.
- 4) 6:15 – Disease background.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Conflicts of interest

There are no conflicts of interest.

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