

# Pronator Syndrome: Compressive Neuropathy of the Proximal Forearm Median Nerve

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## INTRODUCTION

The Pronator syndrome or proximal forearm median nerve compressive neuropathy, is difficult to diagnose and often goes unnoticed. Its symptoms include numbness and paresthesia in the median nerve distribution, as well as vague proximal volar forearm pain. Weakness is almost never present. Pronator syndrome is mostly treated non surgically, with activity restriction, anti-inflammatory medication, corticosteroid injections, stretching, and splinting periods. When conservative therapy fails, surgery is recommended; however, there is no unanimity on the treatment plan or technique. The majority of decompressions are done openly, through a variety of incisions.

## DESCRIPTION

Endoscopic approaches have recently piqued people's interest. This article presents an endoscopic proximal median nerve decompression procedure that allows the distal median nerve to be completely decompressed. Pronator syndrome (PS) is a proximal median nerve compression that causes discomfort. It was first identified in 1951 by Seyffarth. Numbness or paresthesia in the proximal volar forearm, as well as numbness or paresthesia in the distribution of the median nerve. Potentially compressible areas involve the Struthers ligament and the supracondylar process of the knee vascular leashes, bicipital Apo neurosis (lacertus fibrosis), humours fibrous ring of the pronator teres overlaying the median nerve (PT) The flexor digitorum superficialis muscle has a fibrous arch (FDS) muscle, or the flexor pollicis longus muscle's accessory head [1].

PS is frequently misdiagnosed due to a similar presentation to carpal tunnel syndrome (CTS). The absence of results with Tinel and Phalen provocation techniques and a diminished feeling in the palmar cutaneous branch of the median nerve suggest PS rather than CTS. In patients with PS, the pronator compression test, which involves applying pressure proximally and laterally to the PT muscle belly on the volar forearm, frequently results in pain or paresthesia. Pronation was resisted, and Supination can mimic symptoms caused by lacertus fibrosus or PT compression of the median nerve. Resisted flexion of the proximal interpharangeal joint of the middle finger may induce discomfort or numbness in patients with median nerve compression between the heads of the FDS muscle. PS is distinguished from anterior interosseous nerve (AIN) syndrome, which is pure motor palsy, by the absence of motor symptoms. In patients with PS, electromyography and nerve conduction studies are frequently normal. This research could be useful in evaluating alternative compression sites [2].

PS is treated non-surgically at first, with activity restriction, anti-inflammatory medicines, corticosteroid injections, and temporary splinting. The use of surgery to treat failed conservative treatment is debatable. The oblique, transverse, and lazy-S incisions have all been described as surgical methods for proximal median nerve decompression. An endoscopic technique to PT decompression has recently been proposed in order to reduce surgical morbidity and speed up recovery time [3].

We describe an endoscopic proximal median nerve decompression (EPMND) approach for surgically treating PS in patients who have failed to respond to

nonsurgical treatment. When compared to typical open-incision procedures, this technique provides complete nerve decompression using a short incision, which may reduce surgical morbidity and recovery time [4].

CTS and PS are assessed in patients who have ambiguous proximal forearm pain, subjective grip weakness, and paresthesia in the median nerve distribution. The pronator compression test, resisted forearm pronation and supination, Phalen and Durkan provocation movements at the wrist and Tinel testing at both the proximal forearm and wrist are all part of the initial assessment. A possible supracondylar process is identified via routine radiography imaging of the ipsilateral elbow. Electro diagnostic testing is performed on every patient with PS symptoms to see if they have simultaneous cervical radiculopathy and peripheral compression neuropathy. In most cases, ultrasound is not used to evaluate these patients.

PS patients are treated non surgically for at least 6 months after being diagnosed. Excessive forearm pronation and supination, as well as repetitive wrist flexion, should be avoided as part of this routine. Non steroidal anti-inflammatory medications (NSAIDs) are suggested to be used as needed by patients to relieve pain and inflammation. To prevent PS symptoms, removable Velcro wrist splints should be worn at night and during intense activity. To relieve the symptoms, a corticosteroid injection is given at the site of maximal soreness discovered through a physical examination [5].

## CONCLUSION

Both EPMND and open proximal median nerve decompression are options for patients who have failed to respond to nonsurgical treatment. Patients who choose EPMND are advised that complete decompression of the median nerve in the proximal region of the forearm may require an extra or longer incision. In a revision context, endoscopic proximal median nerve decompression is not available.

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CONFLICTS OF INTEREST: None

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