

A rare cause of ulnar nerve entrapment at the elbow in a patient with leprosy

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DEAR EDITOR

We present the case of a young man with the diagnosis of leprosy and symptoms of ulnar nerve entrapment at the right elbow, which was submitted to surgery where the anconeus epitrochlearis muscle was found as the cause of compression. Our case is the first report in the literature of the association between a common and a rare cause of ulnar entrapment in the same patient.

Ulnar nerve compression at the elbow is a common entity due to diverse causes. In countries where leprosy is highly prevalent, such as India and Brazil, this is usually one of the most frequent causes. However, it is rare to find a patient with leprosy and the ulnar nerve compression caused by the anconeus epitrochlearis muscle—the prevalence of which ranges between 5% and 25% of people.¹⁻³

We present the case of a young male patient (an amateur athlete) with the diagnosis of leprosy with the ulnar compressive syndrome in the elbow, where the operation revealed the anconeus epitrochlearis muscle as the origin of the compression.

This patient, an 18-year-old male, sought the outpatient peripheral nerves group due to tingling in both hands. The clinical features predominated in

the right hand where the symptoms were restricted to the ulnar side of the forearm, and the fourth and fifth fingers. He denied a history of trauma. He was diagnosed with borderline leprosy 8 months ago and maintained treatment and regular follow-up with a dermatologist.

On physical examination, the patient presented bilateral hypoesthesia on the fifth finger. Also, his right side was positive for Tinel's sign at the elbow, and he had a motor weakness for finger abduction and the opposing of the thumb. Froment's sign was positive. The remaining physical examination was normal.

An electromyogram showed reduced motor unit recruitment and positive sharp waves in the intrinsic hand muscles, and severe focal slowing of the velocity conduction at the elbow.

At our hospital, we do not perform, by routine, imaging studies for ulnar nerve entrapment. The working diagnosis, based on the epidemiology and clinical features, was ulnar entrapment due to leprosy.

Surgical decompression without transposition for the right side was planned. Intraoperatively, we found a well-developed anconeus epitrochlearis muscle as a clear point of nerve compression, and at the same time

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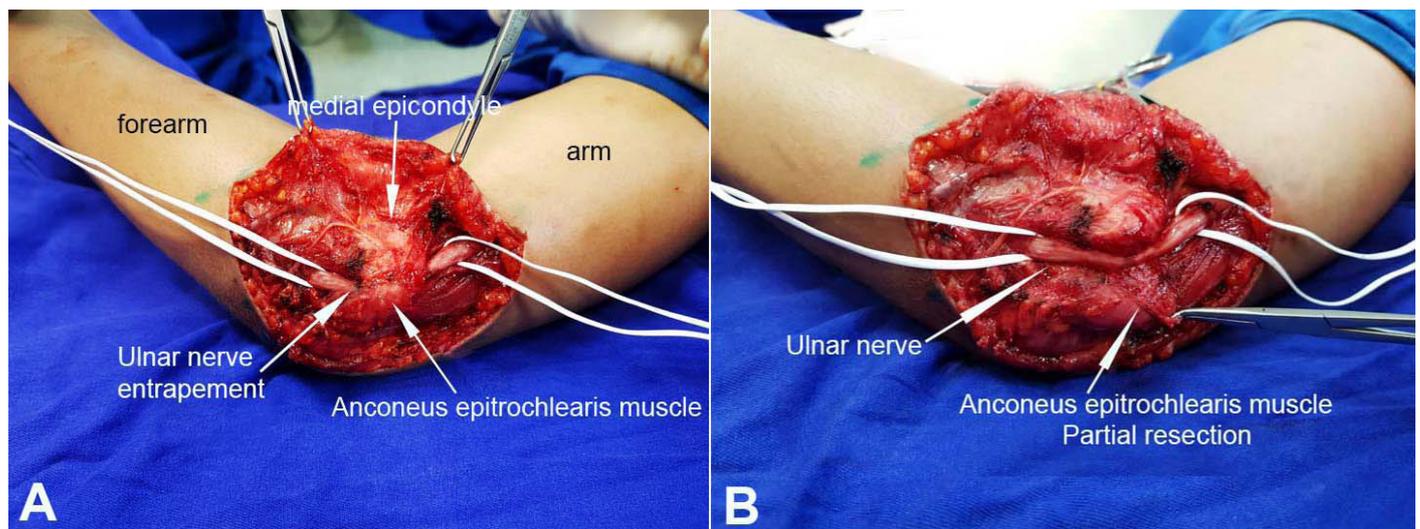


Figure 1. Intraoperative view. **A** – Ulnar nerve entrapment by anconeus epitrochlearis muscle and thickened distal to compression point; **B** – Ulnar nerve entrapped and anconeus epitrochlearis muscle resected.

we observed that distal to the point of compression the nerve was thickened what would not be expected if the compression were only due to the muscle presence (Figure 1A). Complete resection was performed with nerve release (Figure 1B).

During the immediate post-operative period, the patient sensory symptoms improved and at the 1-month follow-up, his motor symptoms had also improved.

DISCUSSION

The ulnar nerve derives from the medial cord of the brachial plexus and carries fibers from C8-Th1 roots. In the midarm, it passes posteriorly through the medial intermuscular septum and under the medial margin of the triceps. Generally, there are no branches of this nerve in the upper arm. The ulnar nerve passes into the cubital tunnel under the medial epicondyle, in the sulcus nervi ulnaris, and comes against the posterior portion of the medial collateral ligament, where a groove in the ligament accommodates the nerve. As the nerve enters the forearm between the two heads of the flexor carpi ulnaris, it gives off a single nerve to the ulnar origin of the pronator teres and one to the epicondylar head of the flexor carpi ulnaris. As the nerve courses more distally, it sends off a motor branch to the medial aspect of the muscle flexor digitorum profundus to the ring finger and little finger. After leaving the canal of Guyon, the nerve divides into

two terminal branches: a superficial branch (sensory) and a deep branch (motor).⁴

The anconeus epitrochlearis muscle is reported to be present in 13% of the Brazilian population;⁵ however, its presence as a cause of ulnar compression is rare—approximately 3% of the cases.⁶

Ulnar nerve neuropathy due to leprosy is a common condition, and simple decompression or transposition of the nerve has a good outcome, stopping symptoms and preventing deformities. When the cause of the compression is the anconeus muscle, simple resections also render favorable outcomes.^{5,6}

We believe that the symptoms of our patient were for both conditions because he had the typical profile of ulnar entrapment due to leprosy and a marked compression was found intraoperatively. We suggest the use of ultrasound for the pre-operative diagnosis in all cases, including leprosy, which we now do in our hospital as a result of this case.

Keywords

Ulnar Nerve External Compression Syndrome; Ulnar Nerve; Nerve Compression Syndrome; Leprosy.

REFERENCES

1. Bandeira SS, Pires CA, Quaresma JA. Nerve damage in young patients with leprosy diagnosed in an endemic area of the Brazilian Amazon: a cross-sectional study. *J Pediatr.* 2017;185:143-8. <http://dx.doi.org/10.1016/j.jpeds.2017.02.035>. PMID:28285750.

2. Byun SD, Kim CH, Jeon IH. Ulnar neuropathy caused by an anconeus epitrochlearis: clinical and electrophysiological findings. *J Hand Surg Am.* 2011;36(7):607-8. <http://dx.doi.org/10.1177/1753193411412149>. PMID:21708839.
3. Contreras MG, Warner MA, Charboneau WJ, Cahill DR. Anatomy of the ulnar nerve at the elbow: potential relationship of acute ulnar neuropathy to gender differences. *Clin Anat.* 1998;11(6):372-8. [http://dx.doi.org/10.1002/\(SICI\)1098-2353\(1998\)11:6<372::AID-CA2>3.0.CO;2-R](http://dx.doi.org/10.1002/(SICI)1098-2353(1998)11:6<372::AID-CA2>3.0.CO;2-R). PMID:9800916.
4. Nascimento SRR, Ruiz CR. A study on the prevalence of the anconeus epitrochlearis muscle by magnetic resonance imaging. *Rev Bras Ortop.* 2018;53(3):373-7. <http://dx.doi.org/10.1016/j.rbo.2017.05.007>. PMID:29892591.
5. Nellans K, Galdi B, Kim HM, Levine WN. Ulnar neuropathy as a result of anconeus epitrochlearis. *Orthopedics.* 2014;37(8):e743-5. <http://dx.doi.org/10.3928/01477447-20140728-92>. PMID:25102512.
6. Dekelver I, Van Glabbeek F, Dijks H, Stassijns G. Bilateral ulnar nerve entrapment by the M. anconeus epitrochlearis: a case report and literature review. *Clin Rheumatol.* 2012;31(7):1139-42. <http://dx.doi.org/10.1007/s10067-012-1991-7>. PMID:22555819.

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The patient signed the informed consent and the manuscript has the authorization of the institutional ethics committee.

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