

Ulnar Nerve Decompression: A Case Report

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ABSTRACT

Cubital tunnel syndrome is a condition characterized by ulnar nerve dysfunction at the elbow due to a combination of compression, traction and friction. It is the second most common condition of the ulnar nerve, behind carpal syndrome. The incidence rate is 21 cases per 100,000 people per year. Although electromyographic abnormalities are present in 33% of carpal syndrome cases, individuals with cubital tunnel syndrome are four times more likely to experience severe symptoms, such as muscle atrophy and reduced sensation. If left untreated, the syndrome can lead to irreversible loss of sensation, muscle weakness, and posterior joint contractures.

A 54-year-old male with clinical manifestations presented for ulnar decompression. The procedure included medial and posterior ulnar nerve dissection, techno-epitrochlear olecranal dissection, ulnar nerve dissection, complete ulnar nerve dissection, and deformity in the arena region.

Research has shown that simple decompression can have comparable results to more extensive surgeries. In a prospective, nonrandomized study, 51% of men and 70% of women who received surgical treatment for ulnar tibial syndrome were referred for a simple procedure. However, the cause of continued pain after a basic procedure remains unclear. Transposition has been used to treat inseparable ulnar nerves in some series, but its efficacy in other cases remains uncertain.

KEYWORDS: Cubital Tunnel Syndrome, Ulnar Nerve Compression, Cubital Tunnel

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INTRODUCTION

Cubital tunnel syndrome is a condition characterized by dysfunction of the ulnar nerve at the elbow due to a combination of compression, traction and friction. It is the second most common condition when a nerve is compressed in the body, behind carpal tunnel syndrome. Its standardized incidence rate is 21 cases per 100,000 person-years. Although the occurrence of electromyographic abnormalities in the cubital tunnel is only 33% of those of carpal tunnel syndrome, people with cubital tunnel syndrome are four times more likely to have signs of severe disease. disease, such as muscle

atrophy and reduced sensation. If left untreated, chronic cubital tunnel syndrome can lead to irreversible loss of sensation, muscle weakening and subsequent joint contractures. Therefore, surgical intervention is provided for persistent ulnar nerve symptoms and observations that do not improve with nonsurgical therapy. We present a case of a 54-year-old male who presents with frank clinical manifestations and who undergoes surgery for ulnar decompression¹⁻³.

Case presentation

A 54-year-old male carpenter with a 2-year course of paresthesias in the ulnar nerve territory of the right hand.

Ulnar Nerve Decompression: A Case Report

These paresthesias prevented him from adequately performing his daily activities, so it was decided to perform an ulnar nerve release at the elbow.

Preoperative clinical scenario:

Positive Tinel's test on percussion in the olecranonepitrochlear tunnel.

Distal paresthesias.

Mild muscular hypotrophy in the hypothenar region of the right hand.

Surgical findings:

Abundant perineural fibrotic tissue in the ulnar canal at the elbow.

Hourglass deformity at the site of neural compression, very evident.



Figure 1. Medial and posterior dissection of the left elbow, with soft tissue dissection showing the triceps at its medial and insertion edge.



Figure 2. Dissection of the roof of the olecranonepitrochlear sulcus.

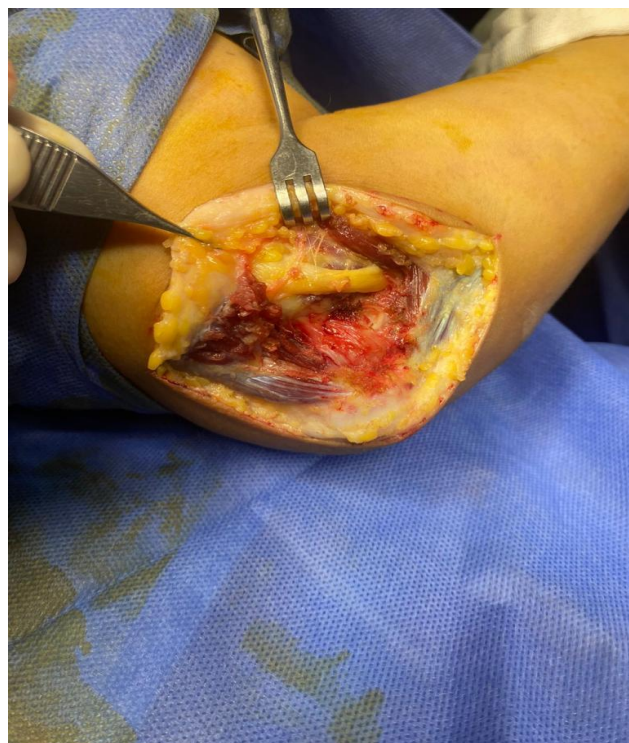


Figure 3. Ulnar nerve dissection still with fascia in the roof of the ulnar groove.

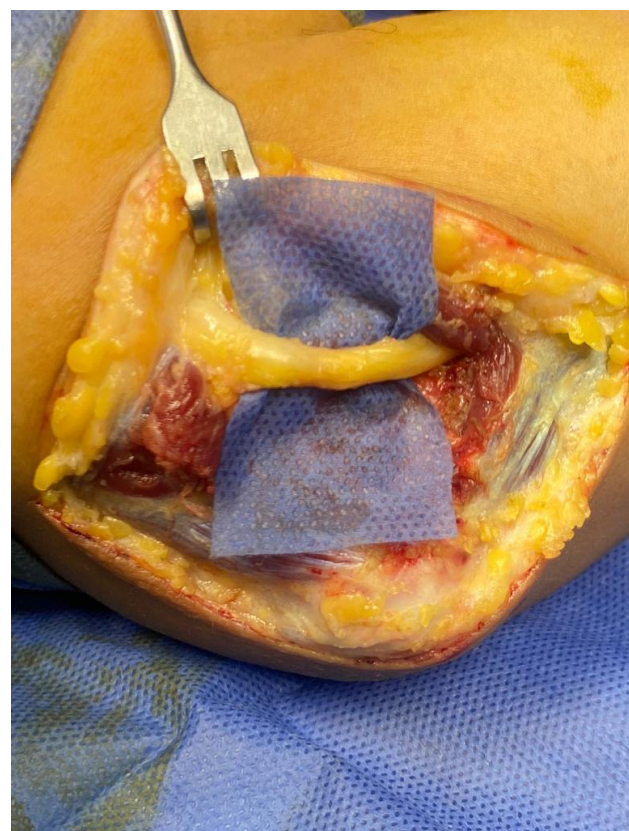


Figure 4. Complete dissection of the ulnar nerve, isolated from the ulnar groove bed in the left elbow.

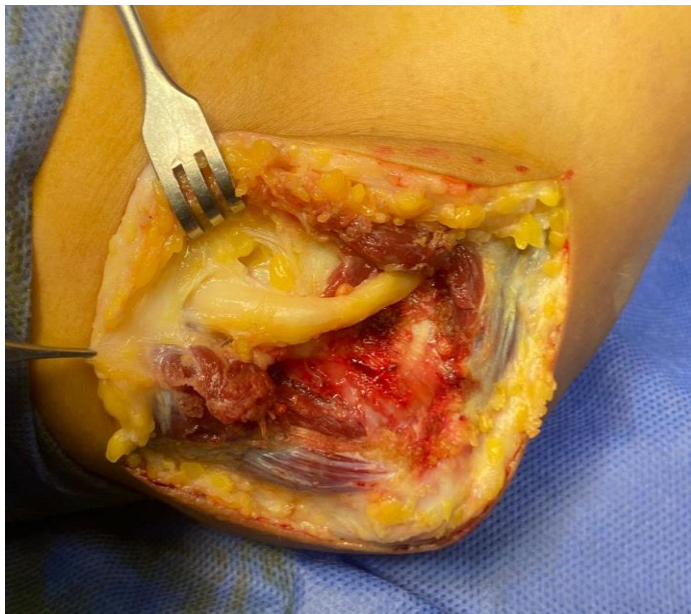


Figure 5. An "hourglass" deformation of the nerve is evident, with the portion proximal to the ulnar groove or tunnel of normal diameter and its distal end decreased in diameter due to compression in the tunnel.

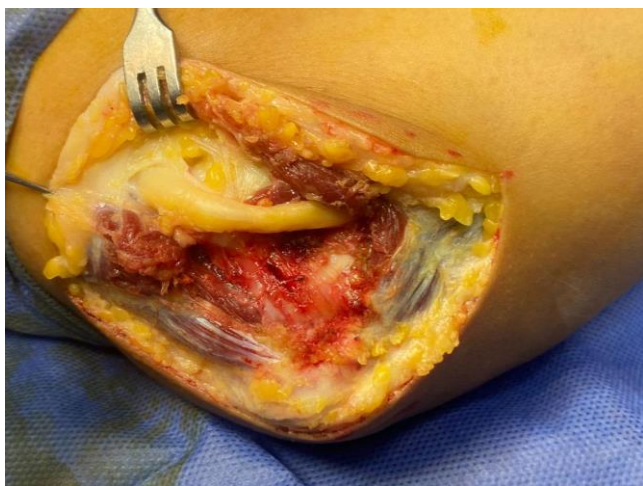


Figure 6. Ulnar nerve completely freed from the olecranon trochlear ligament that compressed it.

DISCUSSION

Osborne's description of simple decompression involves the release of fascial structures superficial to the ulnar nerve along the medial side of the elbow. The treatment is performed by making a small cut on the inside of the elbow immediately above the ulnar nerve. Decompression is performed endoscopically or by using retractors to create a mobile opening for a clear view of the nerve both proximally and distally. To reduce the loss of blood supply we avoid dissecting the nerve in a circular fashion. Patients are allowed to move shortly after surgery without being rigidly immobilized. Despite earlier criticisms due to concerns about symptom persistence, new randomized trials suggest that in situ decompression may have comparable results to earlier, more comprehensive decompression operations. Simple

decompression has regained appeal due to recently published results and the expected decrease in related morbidity^{4,5}.

Soltani et al analyzed the National Ambulatory Surgery database and found that 51% of men and 70% of women who received surgical treatment for cubital tunnel syndrome underwent a simple decompression procedure. In a prospective nonrandomized investigation, the authors observed slight advantages in the endoscopic group compared with the open decompression group. These benefits included a reduction in scar discomfort and numbness around the elbow. Both operations resulted in satisfactory relief of symptoms; 70% of the 34 patients expressed satisfaction after surgery. Possible causes of continued discomfort after a basic decompression procedure include continued nerve strain during elbow flexion and nerve irritation due to excessive motion around the inside of the elbow. The correlation between nerve subluxation and dislocation and the impact on the outcome of decompression remain uncertain. Transposition has been used to treat unstable ulnar nerves in certain series, but in others, subluxation or dislocation has not been considered as a reason to avoid simple decompression. However, it is important to keep in mind that symptoms may continue or recur even after undergoing a simple decompression procedure⁶.

CONCLUSION

Ultimately, it is recommended that nonsurgical treatment be attempted in all individuals with mild to moderate cubital tunnel syndrome. If surgical treatment is necessary, appropriate options are decompression, epicondylectomy, and transposition. Published randomized trials demonstrate that clinical outcomes are not perfect after any of these treatments. Epicondylectomy or transposition are the most common treatments for the hypermobile ulnar nerve. However, the exact effect of nerve hypermobility on the success of simple decompression is uncertain. While revision cubital tunnel surgery may provide potential improvement in cases with a clear explanation for previous failure, it should be approached with caution because of the potential risk of persistent or exacerbated ulnar nerve problems after the procedure.

Declaration of interest

None.

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Ulnar Nerve Decompression: A Case Report

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