



Fixation of Ulnar Nerve Using A Slip of Medial Head of Triceps: A Novel Technique to Treat Ulnar Nerve Subluxation

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INTRODUCTION

Ulnar nerve entrapment is the second most common compression neuropathy. Despite many studies evaluating outcomes of various techniques for decompression, there lacks agreement on one gold standard. It is generally accepted that an intra-operative finding of dynamic subluxation of the ulnar nerve over the medial epicondyle should be corrected by fixation or transposition of the ulnar nerve. We present here a novel technique using a slip of medial head of triceps to secure the ulnar nerve *in situ* following cubital tunnel release.

OBJECTIVES

- To describe a novel technique to allow for *in situ* decompression and to prevent dynamic subluxation of the ulnar nerve following cubital tunnel release
- To describe post-operative outcomes of patients receiving this procedure

METHODS

Fixation of Ulnar Nerve Using Medial Head of Triceps:

- Following release of cubital tunnel, all patients are assessed for dynamic subluxation during a range of motion of the elbow
- In the case of dynamic subluxation, a slip of medial head of triceps is elevated
- The slip is then reflected around the ulnar nerve, and secured to the medial epicondyle
- The patient is then subjected to another range of motion to confirm correction of ulnar nerve subluxation

Assessment of Outcomes;

- Retrospective review of all ulnar nerve decompressions by senior authors from 2005-present
- 75 patients had fixation of ulnar nerve with medial head of triceps
- Assessment of Pre-Operative conditions:
 - Recurrent compression despite anterior transposition
 - Persistent dynamic subluxation despite previous cubital tunnel release
 - Chronic subluxation without prior treatment
- Assessment of Post-Operative Outcomes:
 - Clinical improvement of ulnar neuropathy
 - Recurrent clinical subluxation
 - Exacerbation of ulnar neuropathy
 - Triceps weakness
 - Pain with elbow range of motion

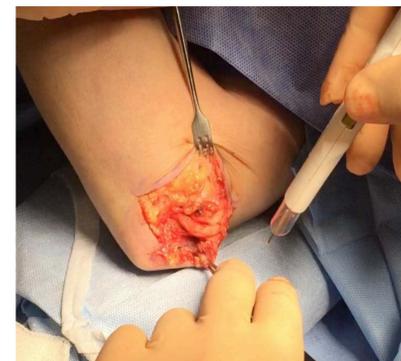
TECHNIQUE



1. Following release of the cubital tunnel, the elbow is put through a range of motion to assess for dynamic subluxation of the ulnar nerve.



2. After identification of a subluxing ulnar nerve, the medial head of triceps is isolated.



3. The isolated slip of the medial head of triceps is harvested by releasing it from its tendonous insertion.

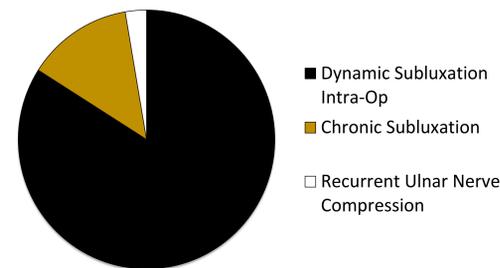


4. The slip of the medial head of triceps is reflected around the ulnar nerve, and fixed to the medial epicondyle.



5. The elbow is then put through a range of motion to confirm resolution of dynamic subluxation of the ulnar nerve.

RESULTS



Pre-Operative Conditions	N	%
Dynamic Subluxation Intra-Op	63	84%
Chronic Subluxation	10	13%
Recurrent Ulnar Nerve Compression	2	3%

The majority of the patients undergoing fixation of the ulnar nerve using a slip of medial head of triceps were found to incidentally have dynamic subluxation intra-operatively.

RESULTS

Post-Operative Outcomes:	N
Clinical Improvement Of Symptoms	75
Recurrence of Subluxation	0
Exacerbation of Ulnar Neuropathy	0
Triceps Weakness	0
Pain With Elbow Extension	0

Subjective responses from patients' charts describe good clinical outcomes. All patients reported subjective clinical improvement of ulnar neuropathy. There was no recurrence of ulnar nerve subluxation or exacerbation of prior neuropathy. In all cases, no patients reported any triceps weakness or pain with elbow extension.

CONCLUSIONS

Fixation of the ulnar nerve *in situ* with a slip of the medial head of triceps is a safe and effective procedure for eliminating ulnar nerve subluxation over the medial epicondyle.

In our experience, all patients who have undergone this procedure have had symptomatic resolution of their ulnar neuropathy without recurrence of subluxation or problems with pain or weakness due to the harvested slip of triceps.

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