

Prevalence and Clinical Manifestations of the Anconeus Epitrochlearis (AE) and Cubital Tunnel Syndrome

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Objectives

- The true prevalence of the anconeus epitrochlearis (AE) and the natural history of cubital tunnel syndrome associated with this anomalous muscle are unknown.
- Aim 1:** To evaluate the prevalence of AE based on 3-dimensional imaging.
- Aim 2:** To characterize the pre- and postoperative features of cubital tunnel syndrome caused by compression from an AE.
- Hypothesis:** patients with cubital tunnel syndrome and an AE accessory muscle would have relatively normal diagnostic tests and a reliably short and complete recovery following surgical treatment.

Methods

- Retrospective review of all elbow MRI scans performed from 1996 through 2016 for the presence of an AE.
- Retrospectively review all patients undergoing cubital tunnel release performed from 1996 through 2016 for the presence of an AE.
- A total of 40 patients had an AE identified intra-operatively and were matched to patients with no AE (based on age, sex, procedures, and year of surgery).
- Pre- and postoperative physical exam findings, electrodiagnostic results, time to improvement, and re-operations were compared between the groups.

Results

- 27 of 199 elbow MRIs performed for any reason had an AE present.
- No association of physical exam findings or electrodiagnostic testing to presence of an AE.
- Average time to improvement after surgery for cubital tunnel syndrome patients is shorter in patients with an AE (**Table 1**).
- Odds of improvement at the first post-operative visit was 7x higher in patients with an AE
- No re-operations in patients with an AE
- >70% of AE patients improved by the first post-op visit with an in-situ decompression or subcutaneous transposition.



Figure 1: The anconeus epitrochlearis (AE) encountered in a patient during cubital tunnel decompression.



Figure 2: Incision of the AE and in-situ decompression of the ulnar nerve (UN).

Conclusions

- Our prevalence of AE in a large series of patients
 - In all MRIs: **13.6%**
 - In patient's undergoing cubital tunnel release: **4.5%**
- Patients with an AE experience quicker and more reliable symptom improvement after surgical release.
- These patients may be successfully treated with either in-situ decompression or transposition when indicated.

	Patients with AE	Patients without AE	P value
Average time to improvement (days)	23.0 ± 19.0	33.2 ± 20.1	0.09
No. of patients improved by first post-operative visit	27	15	<0.01
No. of patients with no improvement	5	10	0.15
Reoperations	0	4	0.04

Table 1. Post-operative time to improvement and reoperation rate of all patients who underwent cubital tunnel release, with and without AE.