

# Painful Subacute Cubital Tunnel Syndrome Because of an Intra-Cubital Tunnel Ganglion Cyst: A Case Report

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## Abstract

**Background:** Entrapment of the ulnar nerve in the cubital tunnel occurs as the second most common compression neuropathy of the upper limb. Although the usual etiology is idiopathic or following cubitus valgus, a compressing mass can be a rare cause and should be considered in atypical presentation.

**Case Report:** A 45-year-old male patient presented with subacute onset of cubital tunnel syndrome that progressed rapidly and was associated with significant pain. An intra-canal ganglion cyst was found during surgical decompression of the ulnar nerve.

**Conclusion:** Diagnosis of intra-cubital canal mass should be considered when sudden onset and rapid progression of the cubital tunnel syndrome and dramatic pain coincide. Imaging modalities like ultrasound or magnetic resonance imaging (MRI) may be helpful to reach the correct diagnosis before the surgery.

**Keywords:** Ganglion Cyst; Cubital Tunnel Syndrome; Ulnar Nerve

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## Background

Cubital tunnel syndrome is the second most common neuropathy of the upper extremity (1). There is usually no obviously detectable preoperative cause, and it is considered primary and related to altered anatomy of the tunnel elements, subluxation of the nerve, or stretching of the nerve by bad habits (2). Sometimes, however, clinical and para-clinical assessments could determine a secondary cause such as cubitus valgus after a childhood fracture, encroachment of the nerve by osteophytes related to elbow degenerative disease, nerve luxation, or mass effect of a tumor or tumor-like lesion (3, 4).

In this case report, we will introduce an intra-cubital tunnel ganglion cyst resulted in a presentation of subacute cubital tunnel syndrome associated by significant pain of the medial forearm and hand beside the typical presentation.

The patient was informed that data concerning the case would be submitted for publication and agreed.

## Case Report

A 45-year-old male physician referred to our clinic due to typical symptoms of left cubital tunnel syndrome along with almost severe pain in posteromedial aspect of elbow radiated to the medial part of his forearm and hand. Symptoms included paresthesia of 4<sup>th</sup> and 5<sup>th</sup> fingers and ulnar side of the hand, and a significant pain started about five weeks ago acutely after a heavy manual work. The

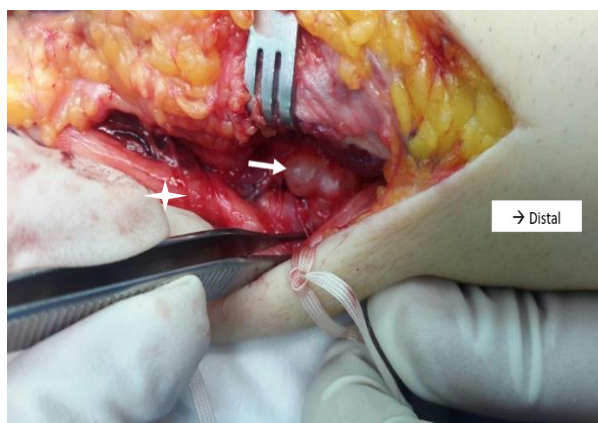
amount of pain was out of proportion to usual cubital tunnel syndrome (rated 8 of 10) and symptoms deteriorated rapidly. Past medical history was negative for a significant finding. In physical examination, Tinel's sign and local tenderness were detected at proximal part of cubital tunnel. In addition, there were minimal atrophy of first dorsal interosseous, positive Froment's sign, and 2 mm increased two-point discrimination of the 5<sup>th</sup> finger pulp compared to the contralateral side. Electrodiagnostic tests confirmed an active demyelinating process of the ulnar nerve at the left elbow. Simple X-ray showed no abnormal finding.

Although the pain could be attributed to the neuritis as a possible diagnosis, the motor deficits demonstrated by physical examination and electrodiagnostic studies were enough to lead us to decide releasing the ulnar nerve at the site of cubital tunnel. Through an anteromedial approach to the left elbow, surprisingly, a 15 in 20 millimeter ganglion cyst was detected in the proximal part of the cubital canal by minimal atrophy of the underlying pressured nerve (Figure 1).

The ganglion was resected, and the ulnar nerve was transposed under the fascia of the flexor pronator muscles. The postoperative protocol consisted of routine wound management and physical therapy started three weeks after surgery. The pain of the forearm and hand disappeared just after surgery and Tinel's sign improved gradually in three months. At the last follow-up, after 12 months, the Tinel's sign was absent, atrophy of the first dorsal interosseous was partially recovered, the Froment's



test was negative, and the pain of the medial side of the elbow and hand was relieved. The elbow and forearm range of motion (ROM) was full.



**Figure 1.** The ganglion cyst (arrow) was located over the ulnar nerve (asterisk) in the proximal cubital tunnel

## Discussion

The cubital tunnel syndrome typically causes altered sensation in the territory of the ulnar nerve. The pain is an occasional symptom. Progression of the disease can lead to hand weakness; loss of coordination and atrophy of interosseous muscles may appear (1, 3). Pressure, stretching, and injury of the ulnar nerve have been proposed as the reasons of nerve symptoms, and habits, occupation, and previous trauma are among possible etiologies (3). Although cubitus valgus and osteophytes of elbow arthrosis are among known causes of secondary cubital tunnel syndrome, ganglion of the tunnel has been reported rarely (4).

Kato et al. reported treating 472 cubital tunnel syndromes during 19 years. They found 38 (8%) medial ganglions. Resting pain in the medial side of the elbow and sudden onset of numbness in 4<sup>th</sup> and 5<sup>th</sup> fingers were reported in 25 and 29 of 38 patients, respectively. Symptoms lasted less than two months in 32 patients. Although 37 patients had findings of degenerative joint disorder in their elbow radiography, the authors concluded that acute onset of numbness (< 2 months) associated with medial elbow pain should bring out the etiology of medial ganglion (5). Our patient had no positive clinical or radiological finding related to the arthrosis of the affected elbow, in fact. However, the sudden onset of rapidly progressing presentation and severe pain after heavy upper extremity work could be again a clue for diagnosis other than typical cubital tunnel syndrome.

Sharma et al. reported a similar case of a 40-year-old man presenting by numbness and pain at the medial aspect of the hand and tenderness of medial elbow for three years that were exacerbated during two months. It was wrongly diagnosed as a cervical spondylosis first and through electerodiagnostic studies, the diagnosis of cubital tunnel syndrome was notified. Surgical exploration revealed a ganglion cyst of the cubital tunnel similar to our patient (6).

Li et al. reported a 57-year-old woman presented by cubital tunnel syndrome, occasional pain, and a mass in medial side of elbow for two months. There was no history of trauma, but X-ray demonstrated a degenerative joint

disease. Magnetic resonance imaging (MRI) showed joint effusion and cystic mass, possibly ganglion cyst. The cyst had recurred after ultrasound-guided drainage. Therefore, surgical resection was performed and the diagnosis of intraneural ganglion cyst was made histopathologically (4). Our patient did not have a detectable mass along the medial side of elbow. We did not perform other imaging modalities like ultrasound and MRI that seem to be useful to reach a correct diagnosis preoperatively. The significant pain was abnormal for diagnosis of typical cubital tunnel and was suspicious for acute neuritis as well. However, motor findings of first dorsal interosseous atrophy and positive Froment's sign were enough to necessitate surgical exploration when the results of electerodiagnostic studies were confirmatory.

Furthermore, another key point regarding compression neuropathies of ulnar nerve in the elbow is that there is a precedent for sensory symptoms. Motor findings occur less severe and more late compared to the sensory ones. In other words, whenever, similar to our reported patient, motor symptoms are parallel or before sensation alteration, atypical cubital tunnel or other diagnoses should be sought (7).

Although it is so rare, sudden onset and rapid progression of cubital tunnel syndrome associated with a dramatic pain should be accounted as other possible causes like intra-canal mass effect. Thus, other imaging modalities like ultrasound or MRI may be helpful to the correct diagnosis (8). Ganglion cyst as a cause of cubital tunnel is rare but needs to be diagnosed and treated as soon as possible to prevent irreversible complications.

## Conclusion

The possibility of a mass lesion such as a ganglion cyst should be mentioned for cubital tunnel syndromes, especially when the presentation is atypical by elbow pain and/or earlier and more severe involvement of the motor part of the ulnar nerve compared to the sensory part.

## Conflict of Interest

The authors declare no conflict of interest in this study.

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