

Cubital tunnel syndrome

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Abstract

Cubital tunnel syndrome is the second most common peripheral nerve entrapment syndrome. It is caused due to compression or irritation of the ulnar nerve at the elbow causing considerable pain and disability for the patients, and in severe cases, may progress to loss of function of hand. When appropriately diagnosed, this condition may be treated by both conservative and operative means.

Keywords: Cubital tunnel syndrome, Ulnar nerve entrapment syndrome.

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INTRODUCTION

Cubital tunnel syndrome at the elbow is an acquired condition caused due to bony spurs, loose bodies, arthritis, prior trauma or repetitive, prolonged activities that require the elbow to be bent or flexed which causes irritation or compression of ulnar nerve at the elbow. This condition is also known as Ulnar nerve entrapment syndrome.

CASE REPORT

A 35 year old healthy female presented with complaints of tingling and numbness over the medial side of right forearm, palm, ring and little finger, elbow pain since 1 year. On examination there is reduced power in

hypothenar muscles and adductor pollicis. There is also decreased grip of right hand. On asking detailed history patient revealed that she had trauma to right elbow on medial side 7 years back and was diagnosed with fracture of medial epicondyle of right humerus and was treated conservatively. The patient was subjected to radiographs of both elbow joints AP and MRI right elbow joint.



Figure 1: Radiograph of both elbow joints AP view revealed

1. Osteophytes at medial ends of bilateral ulna
2. Osteophyte at medial epicondyle of right humerus with adjacent bony opacity- ? Loose body, ? UCL calcification

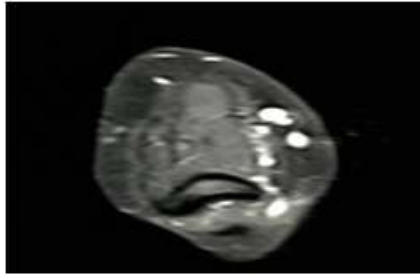


Figure 2: MRI right elbow joint

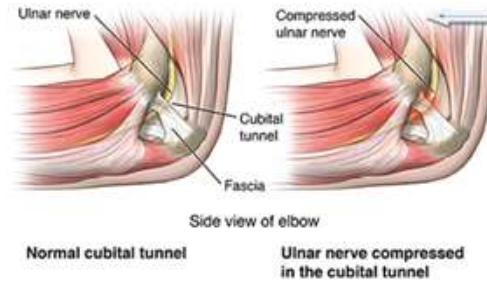


Figure 3: Axial MRI STIR image of elbow joint reveals, hyperintense signal of ulnar nerve and its thickening.

DISCUSSION

Ulnar nerve is a branch of medial cord of brachial plexus with a root value of C8, T1. It gives motor supply to flexor carpi ulnaris and medial half of flexor digitorum profundus in forearm, hypothenar muscles, adductor pollicis, Palmaris brevis, 3rd and 4th lumbricals, interossei muscles in hand. It gives sensory supply to medial half of forearm, hand and medial 1 and ½ fingers. Cubital tunnel is formed by the cubital tunnel retinaculum which covers a gap of 4mm between medial epicondyle and olecranon. Floor is formed by the capsule and posterior band of medial collateral ligament of the elbow joint. This arrangement causes the ulnar nerve to follow a constrained path. The unusual anatomy of cubital tunnel and the well recognized increase in intraneural pressure associated with elbow flexion are believed to be key issues in the pathogenesis of cubital tunnel syndrome. The possible causes of cubital tunnel syndrome are

- Overuse
- Subluxation of ulnar nerve because of congenital laxity in the fibrous tissue.
- Humeral fractures with loose bodies or callus formation
- Arthritis, spur from medial epicondyle or olecranon
- Muscle anomaly (an accessory anconeus)
- Soft tissue mass: ganglion, lipoma, osteochondroma, synovitis secondary to rheumatoid arthritis, infection and hemorrhage.

Clinical Presentation

- Pain and numbness in elbow
- Numbness and tingling sensation in medial side forearm, hand and in ring, little finger.
- Weakness affecting mainly ring and little fingers
- Decreased overall grip of hand
- Hypothenar muscle wasting and atrophy
- Claw like deformity.

The diagnosis is suspected clinically and the role of imaging is to identify the abnormality causing the entrapment such as masses, anomalous muscle, osseous deformity, fibrous bands or to show secondary findings of entrapment like focal flattening, proximal swelling etc. Radiographs, MRI, Ultrasonography are the usual imaging modalities performed. The findings in MRI are hyperintense signal and nerve thickening on T2 weighted images. Ultrasonography show nerve enlargement and hypoechoic lesion. The patient can be treated conservatively with NSAIDs, bracing, splinting, percutaneous nerve stimulation (physiotherapy) and avoiding provocative activities. The more severe cases can be treated surgically by nerve decompression methods like neuronolysis, anterior transposition of the ulnar nerve, medial epicondylectomy.

REFERENCES

1. O'Driscoll S W, Horii E, Carmichael S W. *et al* The cubital tunnel and ulnar neuropathy. *J Bone Joint Surg [Br]* 1991;73:613–617. [PubMed]
2. Descatha A, Leclerc A, Chastang J F. *et al* Incidence of ulnar nerve entrapment at the elbow in repetitive work. *Scand J Work Environ Health* 2004;30:234–240.
3. Brown I C, Zinar D M. Traumatic and iatrogenic neurological complications after supracondylar humerus fractures in children. *J Pediatr Orthop* 1995;15:440–443.
4. Bordalo-Rodrigues M, Rosenberg Z S. MR imaging of entrapment neuropathies at the elbow. *Magn Reson Imaging Clin N Am* 2004;12:247–263.
5. Martinolic C, Bianchi S, Pugliese F. *et al* Sonography of entrapment neuropathies in the upper limb (wrist excluded). *J Clin Ultrasound* 2004;32:438–450.
6. Dellon A L, Hament W, Gittelshon A. Nonoperative management of cubital tunnel syndrome: an 8-year prospective study. *Neurology* 1993;43:1673–1677.
7. Matsuzaki H, Yoshizu T, Maki Y. *et al* Long term clinical and neurologic recovery in the hand after surgery for severe cubital tunnel syndrome. *J Hand Surg [Am]* 2004;29:373–378.

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