

The ulnar nerve compressed in the cubital tunnel by the heterotopic cysts: A case report

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A patient who presented to our clinic with numbness of the ring and small fingers of the hand of 40-day duration. The [diagnosis](#) is Cubital tunnel syndrome. But the ultrasound showed there are 3 heterotopic cysts compress the ulnar nerve, and the sign of adhesion to the epineurium.

Abstract

The ulnar nerve compressed in the cubital tunnel is called Cubital tunnel syndrome in the clinic, it is the second most common compression neuropathy in the upper extremity[1-4]. There are five sites of potential ulnar nerve entrapment around the elbow from the proximal to the distal: the arcade of Struthers; the medial intermuscular septum; the medial epicondyle; the cubital tunnel; and the deep flexor pronator aponeurosis. The most common site of entrapment is the cubital tunnel[5]. And Osbourne's ligament is the first common site where the compression happen. However, we also found that there are cysts compress the ulnar nerve in cubital tunnel through preoperative ultrasonography. This case report is the description of heterotopic cysts that compress the ulnar nerve in our clinical practice.

Key Words : cubital tunnel syndrome; heterotopic cysts; ulnar nerve; ultrasound; surgery

A case report

A 45-year-old male patient who presented to our clinic with numbness of the ring and small fingers of the hand of 40-day duration. The fourth and fifth digits of his hand was associated with paresthesias and numbness in the same distribution, and symptoms were worsening at night and aggravated by activity. Previous treatment included physical therapy and oral Mecobalamin medications.

On physical examination including the paresthesia of the ulnar fourth and entire fifth finger, and taking on a claw deformity, a positive Tinel's sign at the cubital tunnel. But the intrinsic muscles of the hand is normal.

A nerve conduction test and electromyography (EMG) studies revealed the ulnar nerve motor latency, nerve conduction velocity slowed down and evoked amplitude decreased(Fig 1).

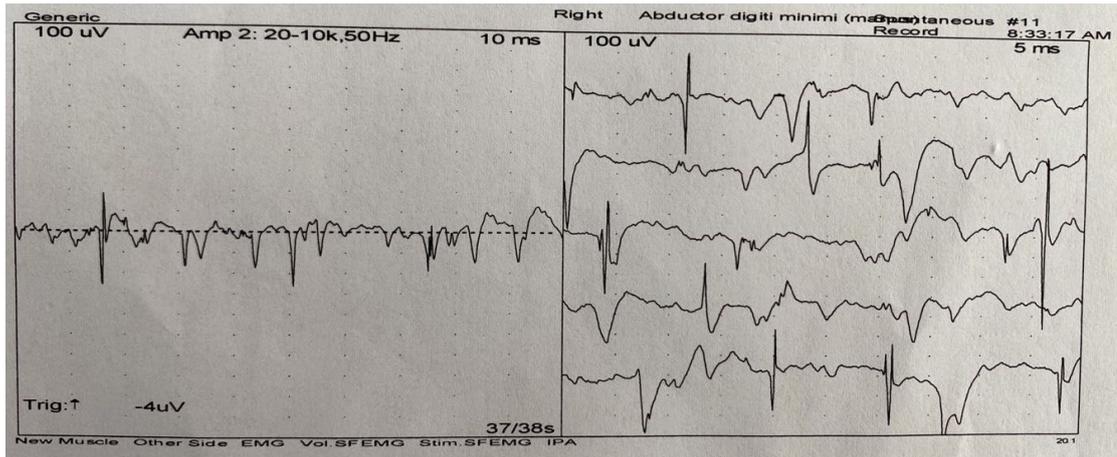


Fig 1. EMG found that the case of extensor digitorum communis in the spontaneous potential, the movement unit time limit, and amplitude increased. It is shown that axon injury was present.

The ultrasound showed there are 3 heterotopic cysts compress the ulnar nerve, and the sign of adhesion to the epineurium, the size of the cysts are 0.5cmx0.1cmx0.2cm, 1.9cmx0.8cmx0.6cm, 2.3cmx0.6cmx0.4cm, from the proximal to distal elbow(Fig 2 A-C). The second point is the most obvious.

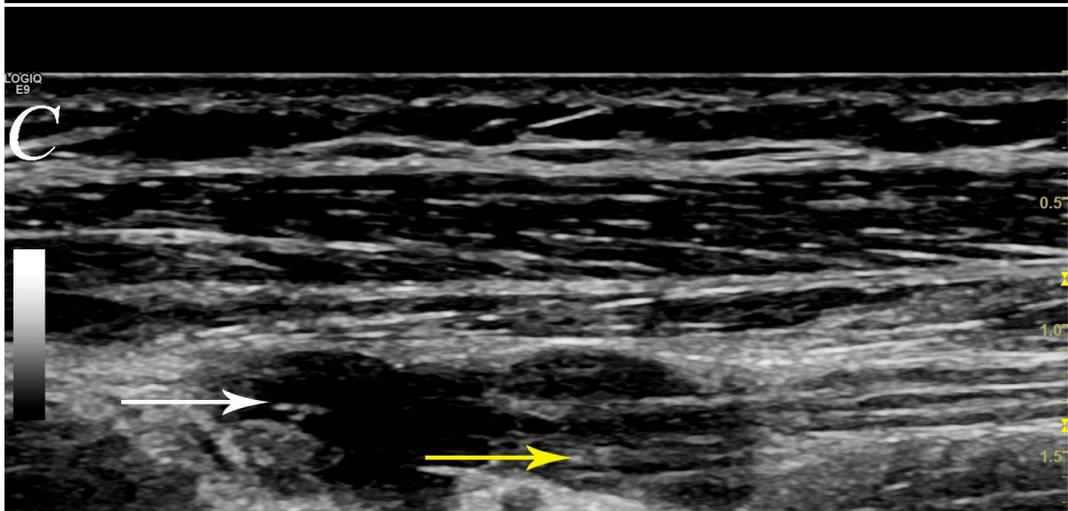
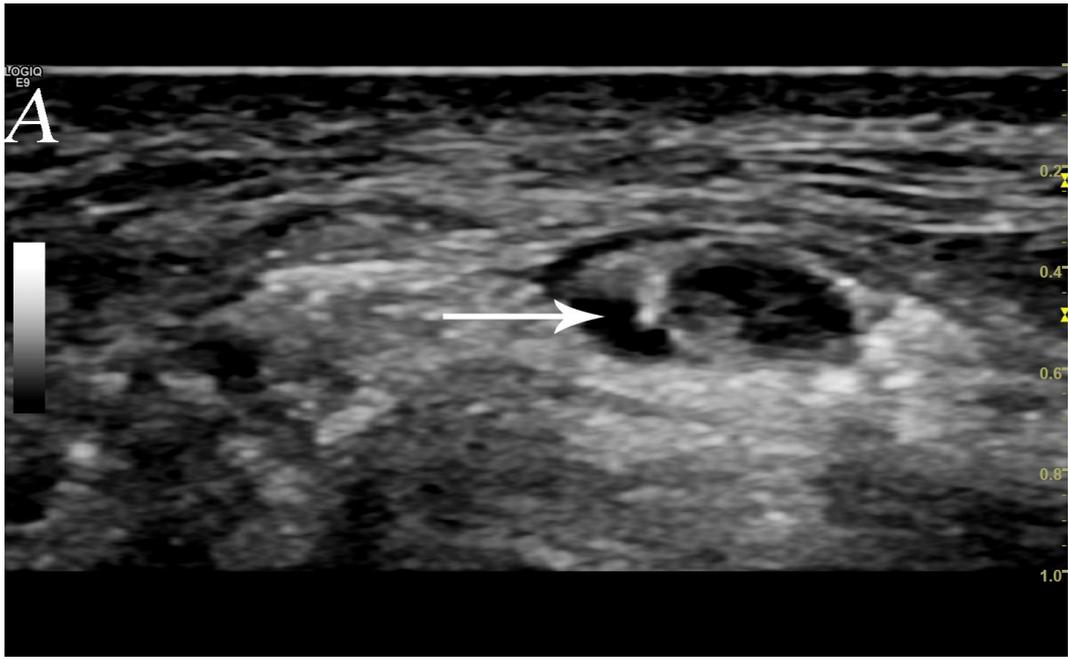


Fig 2. The ultrasound showed a normal appearance of the cysts, a hypoechoic around part of the ulnar nerve(A-C).The white arrow is cyst, the yellow arrow is ulnar nerve.

The simplest technique for treating cubital tunnel is operative treatment (Fig 3 A-C). The operation can be simple decompression of the ulnar nerve or decompression with anterior transposition of the ulnar nerve. However, this report is description of variable cysts compressing ulnar nerve. We just remove the cysts by a surgeon.The symptoms of postoperative numbness and paresthasias were significantly improved.

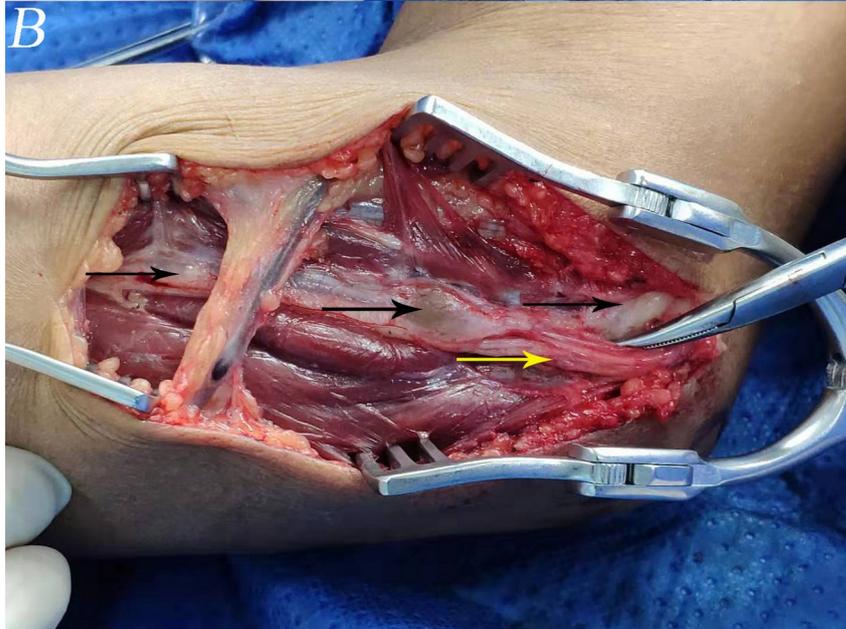
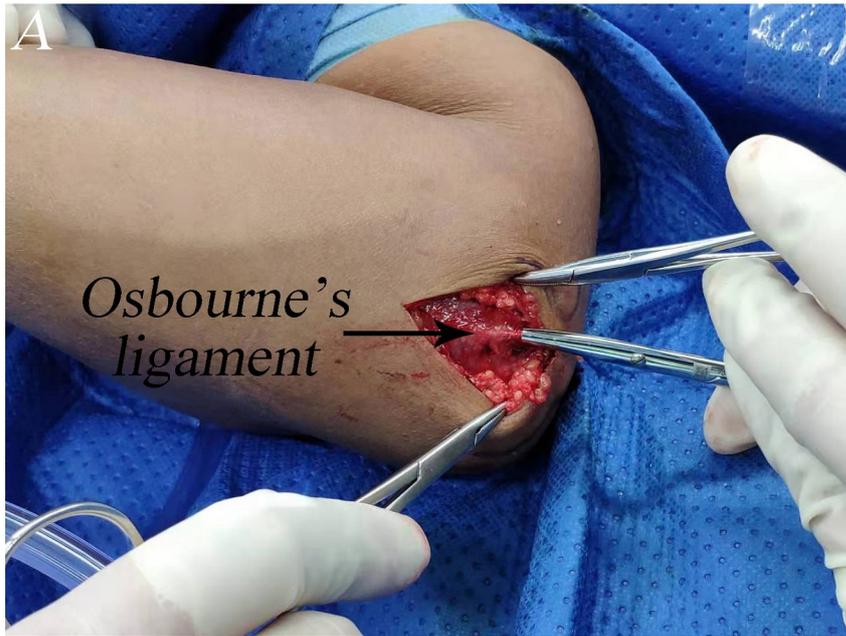


Fig 3. 3-cm incision is made midway between the olecranon and medial epicondyle, Osbourne's ligament not compress the ulnar nerve(Fig 3A). The surgery showed three cysts compress the ulnar nerve(Fig 3B-C).The white arrow is cyst, the yellow arrow is ulnar nerve.

The [pathological diagnosis](#) is [ganglion cyst](#)(Fig 4A-B).

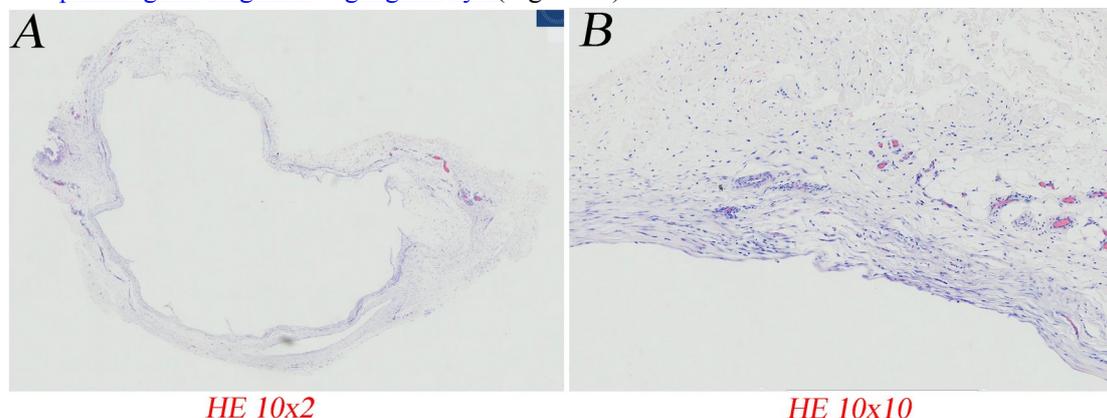


Fig 4. Histological picture showing cystic areas with mucinous content.

Discussion

Cubital tunnel syndrome is a symptom complex caused by the compression of the ulnar nerve at the elbow, with sensory and motor deficiencies or dysesthesia.

The diagnosis of cubital tunnel syndrome include: history; physical; examination; a nerveconduction test and electromyography(EMG).Ulnar compression at the elbow can be clinically diagnosed ; however, an electroneurographic examination is necessary to confirm the diagnosis and to exclude the possibility of compression in other sites[6-8].We decided to report this case because it shows the importance of the ultrasound in the diagnosis of the cause of compressions. As we all know, it is easy to escape diagnosis for the patient.The main sonographic sign of cubital tunnel syndrome is a hypoechoic swelling of the ulnar nerve with loss of the fascicular pattern.

In conclusion, cubital tunnel syndrome is often diagnosed both clinically and an electroneurographic examination, but it is necessary that the use of imaging to detect the cause. The case shows the importance of ultrasound in the diagnosis of the cause of compression, including those that are rare and unexpected[9-10].

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