

Cubital Tunnel Syndrome Caused by Ulnar Nerve Compression by a Flexor Ulnaris Tendon Sheath Cyst

Sir,

Cubital tunnel syndrome is a common compressive neuropathy of the upper limb, characterised by sensory and motor dysfunction of the ulnar nerve. Cubital tunnel typically refers to an anatomical structure on the medial side of the elbow joint, formed by the ulnar nerve groove and surrounding fibrous tissue. The ulnar nerve may be compressed during movement, leading to local swelling, inflammation, and fibrosis.¹ If left untreated, the compression may result in irreversible nerve damage, leading to loss of function in the forearm and hand.² Causes of cubital tunnel syndrome include chronic compression or friction, anatomical abnormalities or variations, post-traumatic changes, space-occupying lesions, and joint disorders. Conservative treatment for cubital tunnel syndrome may alleviate symptoms; however, most cases often require surgical intervention, such as nerve decompression, nerve release, nerve reconstruction, and nerve transposition.³

A 54-year woman reported numbness and discomfort in her right little finger and ring finger for one year without any obvious cause. After receiving intravenous mannitol and oral methylcobalamin treatment at a local hospital, her symptoms improved significantly.

Over the past year, the patient's symptoms gradually worsened, and conservative treatment was ineffective, prompting the patient to seek treatment at this hospital. Physical examination revealed numbness and discomfort in the right little and ring fingers, accompanied by mild muscle atrophy. Upon flexion and extension of the elbow joint, a round mobile mass was palpable within the ulnar nerve groove, which was firm in consistency. To further evaluate ulnar nerve function, an electrophysiological examination was conducted. The results showed a significant reduction in motor conduction velocity across the elbow segment of the right ulnar nerve.

Electromyography (EMG) revealed fibrillatory waves in the first dorsal interosseous muscle and extensor digitorum minimi muscle, indicating axonal damage. Elbow joint ultrasound examination revealed a mass measuring approximately 16.7 × 6.5 mm within the ulnar wrist flexor tendon sheath (Figure 1A). Based on the patient's condition and the results of electrophysiological and imaging examinations, surgical treatment was decided.

After general anaesthesia, the patient was placed in a supine position. The right upper limb was restrained with a tourniquet, and a right elbow joint exploration and tumour resection were performed. A longitudinal incision approximately 6 cm in length

was made along the course of the ulnar nerve. The subcutaneous tissue was dissected layer by layer, and the ulnar nerve was identified. A pale-yellow tumour was observed within the ulnar wrist flexor tendon sheath (Figure 1B). The tumour capsule was incised, and the tumour was clearly visible (Figure 1C). The tumour was completely removed and sent for pathological examination (Figure 1D). Pathological examination revealed an ulnar wrist flexor tendon sheath cyst, with a gray-white and gray-brown cut surface. The cyst was solid in nature, firm in texture, and showed focal mucoid degeneration (Figure 1E-G). The pathological examination results confirmed the clinical diagnosis that cubital tunnel syndrome was caused by compression of the ulnar nerve by the ulnar wrist flexor tendon sheath cyst. Three days postoperatively, the patient reported significant improvement in numbness in the little and ring fingers. Two weeks postoperatively, the patient's symptoms had largely resolved.

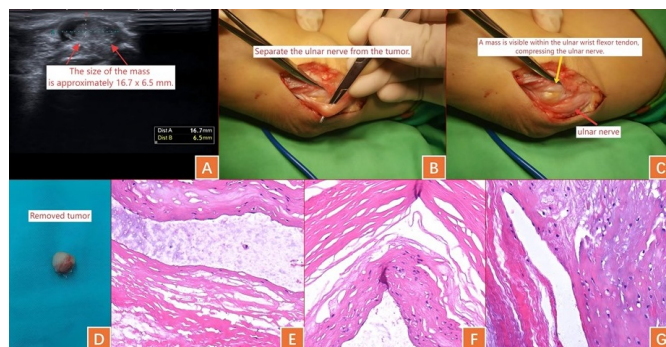


Figure 1: (A) Elbow joint ultrasound examination revealed a mass measuring approximately 16.7 × 6.5 mm within the ulnar wrist flexor tendon sheath. (B) A pale-yellow tumour was observed within the ulnar wrist flexor tendon sheath. (C) The tumour capsule was incised, and the tumour was clearly visible. (D) The tumour was completely removed and sent for pathological examination. (E-G) Pathological examination revealed an ulnar wrist flexor tendon sheath cyst, with a gray-white and gray-brown cut surface, which was solid in nature, firm in texture, and showed focal mucous deposits.

Based on this case, it was concluded that ulnar nerve compression secondary to tenosynovial cysts requires greater clinical awareness. The patient's symptomatology likely reflects cyst consolidation and increasing nerve compression over time. Therefore, we emphasise the necessity of prompt diagnosis and treatment to avoid irreversible neurological deficits.

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XZ: Drafted, revised, and edited the manuscript.

YH: collected, analysed, and interpreted data.

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