Ultrasonographic Diagnosis of Bilateral Ulnar Nerve Subluxation Due to Fitness Training

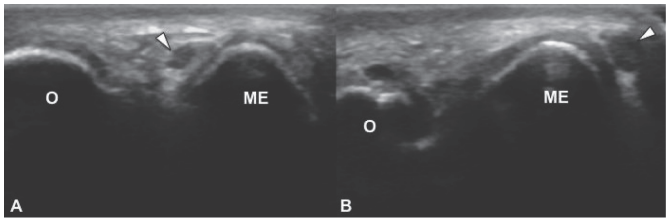
The Editor,

Sir,

In this letter, we present a patient with bilateral ulnar nerve subluxation which is very rare (1, 2). We used ultrasonography for the diagnosis.

A 19-year old male fitness trainee was seen in our outpatient clinic due to pain and paresthesia at both elbows (worse on the left-side). His symptoms had started while performing "French press" three years ago and became worse in the last 2–3 weeks. He declared that his complaints ensued especially during bench/shoulder press or elbow flexion and that they resolved after stopping the exercises. He described forearm and hand paresthesia (on the volar sides of 4th and 5th fingers of the left-hand), while sleeping on his flexed elbow. He also describes "snapping" kind of feeling on the medial sides of his elbows during flexion. The medical history was otherwise non-contributory.

On physical examination, both ulnar nerves were found to subluxate during forced flexion/extension maneuvers. Left flexor carpi ulnaris muscle was tender to palpation and intrinsic muscle strength was decreased on the left-side. Tinel sign was positive on both cubital tunnels. Froment's sign was positive on the left-side when patient was asked to hold a key. Upper extremity electrodiagnostic studies revealed normal ulnar nerve motor/sensory conduction velocities but decreased motor amplitudes at the level of the left cubital tunnel, consistent with mild cubital tunnel syndrome (CuTS). Static ultrasonography did not show any abnormalities pertaining to the ulnar nerves or the nearby structures; but dynamic ultrasonography clearly demonstrated the subluxation of both ulnar nerves (Figure).



A: Ultrasonographic imaging (axial view) of the right ulnar nerve (white arrow head) at the level of the cubital tunnel demonstrating its normal position within the tunnel.

B: After flexion-extension of the elbow joint, nerve is outside the tunnel. ME: Medial epicondyle, O:Olecranon

The patient was taken to a physical therapy programme but was lost to follow-up thereafter. Subluxation or dislocation of the ulnar nerve at the level of the cubital tunnel was first described by Childress (3) in two forms: incomplete and complete. In complete subluxation the nerve crosses the epicondyle during elbow flexion (like in our case). The symptoms naturally occur due to friction neuritis, and depending on the extent of this friction, patients might suffer CuTS.

Ulnar nerve subluxation can occur due to several reasons including; laxity of the flexor carpi ulnaris retinaculum, congenital hypoplasia of the medial epicondyle, muscular anomalies, and post traumatic changes (3–6). We could not observe any of these causes in our patient with ultrasonography. Therefore, we considered that the well-trained medial head of the triceps muscle could have applied excessive force to the ulnar nerve during elbow flexion (1). We would like to imply that the role of ultrasound in the diagnosis of these cases is noteworthy; dynamic imaging can be used for demonstration of the subluxations and static imaging may uncover any relevant underlying aetiology, simultaneously (7–10). Ultrasound can be used also during the follow-up of these patients with repeat scanning as well.

Keywords: Subluxation, ulnar nerve, ultrasonography

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