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Letter

Flexor pollicis longus rupture following acupuncture for trigger thumb: a case report

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Background

Trigger finger is one of the most common hand disorders seen in outpatient hand clinic. The aetiology of trigger finger is the diameter mismatch of the flexor tendon and the proximal edge of the tendon sheath, particularly at the ligamentous A1 pulley, which is located at the metacarpophalangeal joint (MCPJ). Inflammation and degenerative processes cause thickening of the sheath, hypertrophy of the tendon and fibrocartilage metaplasia, and hence produce a mismatched 'gliding tunnel' for tendon function.[1] Clinical symptoms are pain, swelling at the MCPJ, snapping and a 'locked' finger in flexion if presenting late.

The diagnosis of trigger thumb is based on clinical symptoms and physical examination. Early cases are commonly treated by physiotherapy and splinting along with oral non-steroidal anti-inflammatory drugs and optional corticosteroid injection. A1 pulley release surgery is indicated if other non-surgical management fails or the finger is in the late stage 'locked' position. It is important to note that the neurovascular bundle of the thumb is more centrally located, making it more prone to injury during any procedures.[2]

Case report

A 48-year-old lady developed pain and right-sided trigger thumb for the preceding 3 months. There was no history of trauma prior to symptom onset. She had visited a local acupuncturist 2 months earlier for her right trigger thumb, where the diagnosis was made, and she was given three sessions of traditional acupuncture needling along the volar surface of her thumb. She was not informed of the traditional acupuncture point names but was able to localise the sites of treatment (Figure 1). She claimed the process was painful, especially the last session. After completing the third session, she noticed her thumb was mildly swollen and she was unable to flex it fully. She did not go back to the acupuncturist due to fear of further treatment.

Evaluation

On examination, there was no sign of infection of her right thumb and no scarring. She was unable to flex the interphalangeal joint (IPJ) of her right thumb and it was not possible to palpate the flexor pollicis longus (FPL) tendon. Ultrasound confirmed the diagnosis of FPL rupture and a two-stage tendon reconstruction was performed.

Reconstruction

During the first-stage surgery, the FPL was found ruptured at flexor tendon zone II (proximal to the IPJ), with the proximal stump found retracted at zone V (proximal to the wrist crease) (Figure 2). The A2 pulley was fibrosed while oblique and A1 pulleys were collapsed. Hence, a silicon rod tendon spacer was inserted into the FPL bed to recreate a gliding tunnel. The second-stage surgery was performed 3 months later to allow the formation of a favourable bed for the FPL tendon. The palmaris longus (PL) tendon (of the right hand) was used as a graft for the FPL proximal stump. The silicon tendon spacer was removed. She regained her IPJ flexion 0°–45° at 3 months post-op.

Commentary

It is believed that acupuncture needling, which penetrates the flexor tendon sheath, improves local circulation, reduces inflammatory oedema and hence improves pain and snapping severity.[3] The most common adverse events reported are local pain, slight bleeding or haematoma from needling (1.1%–6.1%). Among all the reported adverse events in a recent prospective series of acupuncture treatments for trigger finger,[3] only one specifically involved the hand. The most frequently involved traditional acupuncture point locations were *Taiyang*, PC6 (*Neiguan*) and LI4 (*Hegu*) in the hand.[4] There has been lack of consensus on traditional acupuncture point selection and treatment protocols for trigger finger.[5]

Figure 1. Left panel: Volar surface of patient's right hand. Arrows indicate location of acupuncture needling, as recalled by the patient. Crosses indicate *Wuhu* traditional acupuncture points often used for treatment of trigger finger. Right panel: Distal stump of flexor pollicis longus found at zone II, shown at tip of forceps, corresponding to distal needling point.

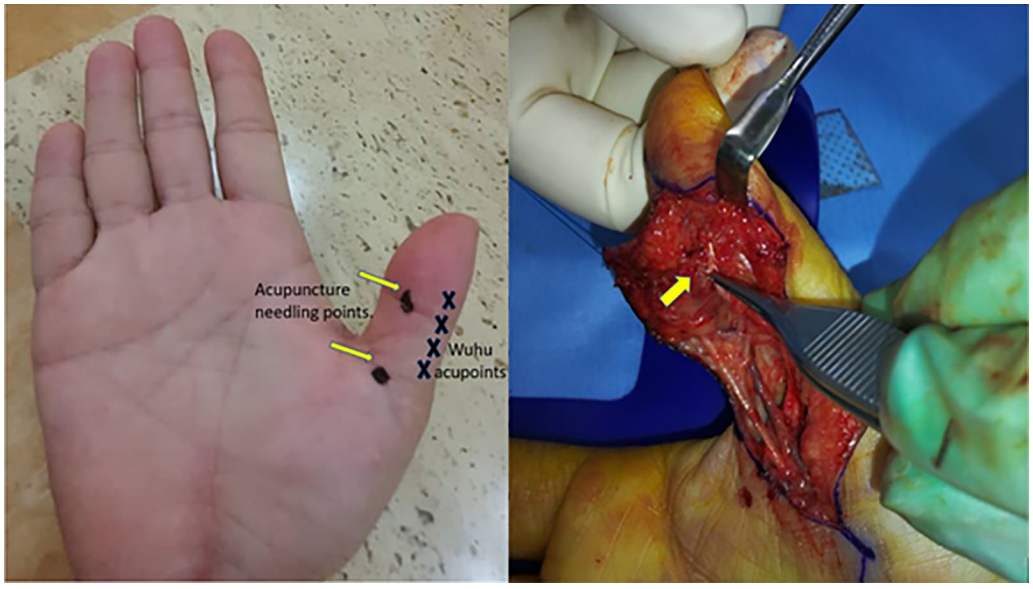

Figure 2. Proximal stump of flexor pollicis longus found at zone V, shown by arrow.

In this case, the acupuncture needling locations as recalled by the patient were nearest to the *Wuhu* points, which are one of the most recognised sets of traditional acupuncture points targeted in trigger finger. However, the anatomical location of the *Wuhu* points is described radial to the flexor tendon, along the radial border of the thumb (Figure 1). We postulated that the needling insertion points in this case were incorrect and had accidentally lacerated the tendon, perhaps even repeatedly over three sessions, leading to tendon rupture.

Acupuncture has proven itself with its long-standing history in medicine. However, the governance of its practice can be challenging. Acupuncture training should be monitored by health authorities, in order to not only deliver safe acupuncture technique and prevent adverse effects, but also to recognise adverse events and take prompt and appropriate action to refer to medical personnel immediately. We strongly advocate that meticulous care be taken when needling at 'high risk' traditional acupuncture points around the wrist and hand, as the neurovascular and tendon structures are delicate in these areas.

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