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Case Report

Triggering Thumb Is Not Always a Trigger Thumb

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Although rare, the thumb can trigger because of de Quervain disease. An 18-year-old woman presented with painful triggering during thumb movements. Physical examination revealed locking upon thumb extension and painful snapping upon thumb flexion, with tenderness over the first extensor compartment. During the ultrasonography examination, the extensor pollicis brevis tendon snapped with a jerky movement. According to intraoperative active movement under wide-awake local anesthesia no tourniquet, only the extensor pollicis brevis tendon subcompartment was released, and the snapping was resolved. The patient was symptom-free at the second postoperative week control. Triggering because of de Quervain tenosynovitis is a rare condition, and surgical release is required in most cases. Dynamic ultrasonography is an effective tool for precise preoperative assessment of pathology and assists surgical planning. Surgery under wide-awake local anesthesia no tourniquet is advised, which helps intraoperative assessment of pathology and ensures accurate treatment.

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Trigger thumb is a common complaint and can occur in individuals of all ages. Although rare, the thumb can trigger because of de Quervain tenosynovitis. In 1 study, clinical extensor triggering was reported in only 1.3% of the 827 patients with de Quervain tenosynovitis.¹

Case Report

An 18-year-old woman presented with a 3-month history of painful triggering during thumb movements. She did not recall an inciting event. The first time she noticed snapping, she used wrist orthoses and anti-inflammatory medication for up to 2 months. Her symptoms continued, and she was offered an A1 pulley release for the trigger thumb in another area. She was referred to a hand surgeon for a second opinion. Physical examination revealed locking upon thumb extension and painful snapping upon thumb flexion, with tenderness over the first extensor compartment. Radiographs showed no bony anomalies that could cause triggering.

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Ultrasonography (USG) was performed using an L14-6 10-MHz linear probe (Mindray DC-N3, Shenzhen Mindray Bio-Medical Electronics). Dynamic USG examination showed that a vertical septum separated the extensor pollicis brevis (EPB) and abductor pollicis longus (APL) tendons and the EPB tendon snapped with a jerky movement. The patient was recommended to undergo surgery under wide-awake local anesthesia no tourniquet (WALANT).

A 4-cm zigzag incision was made on the skin along the EPB tendon over the radial styloid process. The sensory branch of the radial nerve was protected. The EPB tendon lay in a separate subcompartment inside the first extensor compartment, and only the EPB tendon snapped upon intraoperative active thumb flexion and extension. The APL tendon glided smoothly in its extensor compartment. Only the EPB tendon subcompartment was released, and the snapping was resolved. Localized thickening of the EPB tendon was observed. A small wedge of the retinaculum was excised to avoid possible recurrence. There was no subluxation of the EPB tendon with active movement. The skin was closed with subcuticular sutures (polypropylene, Propilen®, Dogsan, Trabzon, Turkey). An elastic bandage was wrapped for 3 days, and active movement was advised after the third postoperative day. The patient was symptom-free at office visits during the first and second postoperative weeks (Video, available on the *Journal's* website at www.jhsgo.org).

Written informed consent was obtained from the patient for the publication of this case report and the accompanying video. All

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procedures were performed in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008. Informed consent was obtained from the patient for inclusion in the study.

Discussion

Abundant anatomical variations in the first extensor compartment are believed to be the potential causes of de Quervain tenosynovitis. Chow² was the first to report triggering in de Quervain stenosing tenosynovitis, which was observed in a 7-year-old boy and was caused by an abnormally low EPB muscle belly. Witczak et al³ reported a 9-patient series comprising nodules or synovitis in APL and/or EPB tendons to cause triggering. In an 11-patient series by Alberton et al,¹ synovitis of the APL and/or the EPB tendons with separate compartments was observed. Therefore, although rare, de Quervain stenosing tenosynovitis should be included in the differential diagnosis of trigger thumb. In fact, the extensor pollicis longus tendon can also cause triggering of the thumb and presents a diagnostic challenge.⁴ We believe that a preoperative USG is a good option for diagnostic evaluation of the possible causes. Ultrasonography has been increasingly used in hand surgery. Tendons, nerves, pulleys, ligaments, and bones are observed and evaluated with this practical tool. Hand surgeons practice live anatomy during the surgery, and this is an important advantage for them to analyze USG images. It is likely that USG will commonly be used in the diagnosis and treatment of hand-related disorders requiring surgery in the near future.

Triggering represents a more severe form of de Quervain tenosynovitis, and surgery can be considered earlier during treatment. In previous studies, the authors did not report manual reproduction of triggering of the APL with passive motion during surgery.^{1–3,5} Greenhill et al⁵ proposed that the triggering was due to dynamic proximal muscular pulling that was unlikely to be recreated unless the patient was conscious enough to adequately contract the EPB and/or APL muscle. After compartment release, they excised 1 accessory slip of the APL to potentially narrow the compartment

and reconstructed a small pulley to block the subluxation of the tendons. Recently, Uemura et al⁶ reported a unique experience of EPB snapping in de Quervain tenosynovitis that was evaluated with preoperative dynamic USG and treated with the release of only the EPB subcompartment according to intraoperative active movement under WALANT. Evident volar subluxation of the EPB tendon was observed, and the surgeons reconstructed a pulley and immobilized the wrist with an orthosis for 2 weeks. For the patient in the current study, only the EPB subcompartment was released and pulley reconstruction was not required because there was no volar subluxation after release. Therefore, we did not need to immobilize the wrist with an orthosis for 2 weeks. The WALANT method provided immediate dynamic feedback for adequate release, precise surgery, and postoperative management.

In conclusion, triggering de Quervain tenosynovitis is a rare condition, and surgical release is required in most cases. Dynamic USG is an effective tool for precise preoperative assessment of pathology and can assist in surgical planning. Surgery under WALANT is advised, which helps in the intraoperative assessment of pathology and ensures accurate treatment. Recent developments in hand surgery have guided the successful management of this rare condition.

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