Acta Scientific Orthopaedics (ISSN: 2581-8635)

Volume 9 Issue 1 January 2026

Case Report

Snapping Extensor Pollicis Longus Tendon – A Rare Case Report and Review of Literature

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DOI: 10.31080/ASOR.2025.08.1096

Received: November 24, 2025

Published: December 15, 2025

Abstract

We report the case of a 32-year-old man presenting with painful dorsal snapping of the extensor pollicis longus tendon associated with trapeziometacarpal joint instability. Surgical management involved stabilization of the trapeziometacarpal joint using a hemi–extensor carpi radialis longus autograft to reconstruct the first–second intermetacarpal ligament. Persistent extensor pollicis longus subluxation was addressed by creating a dorsal "neo-sheath" pulley using the remaining extensor carpi radialis longus graft and tightening the radial sagittal band at the metacarpophalangeal joint, achieving centralization of the tendon. At the 12-month follow-up, the patient demonstrated full resolution of symptoms and restoration of thumb biomechanics.

Keywords: Extensor Pollicis Longus Tendon; Snapping Thumb; Tendon Instability; Trapeziometacarpal Instability; Pulley Reconstruction

Introduction

Instability of the trapeziometacarpal (TMC) joint is a relatively common condition arising from trauma, ligamentous laxity, inflammatory disease, or overuse. Ligament insufficiency leads to hypermobility, inflammation, and progressive degenerative changes that can severely impair thumb function [1-4].

By contrast, painful snapping on the dorsal aspect of the thumb is extremely uncommon. While volar "trigger thumb" is well described, dorsal triggering caused by subluxation or entrapment of the extensor pollicis longus (EPL) tendon is rare, with approximately 10–12 cases reported in the literature to date [5-12]. Most previously described cases involved mechanical conflict with bony prominences, tendon attrition over Lister's tubercle, or postoperative changes following distal radius fractures.

This report describes a unique case of dorsal EPL snapping associated with primary trapeziometacarpal joint instability—an association not previously documented. Surgical management involved reconstruction of a dorsal pulley ("neo-sheath") anchored to the first metacarpal using a hemi–extensor carpi radialis longus graft, performed under WALANT anaesthesia to allow real-time intraoperative dynamic assessment.

Case Report

A 32-year-old male presented with a painful, visible snapping of the extensor pollicis longus tendon over the dorsal carpometacarpal region of the thumb, progressively worsening throughout the workday. Symptoms had been present for approximately nine months. Examination revealed a palpable bump in three areas: the base of the first metacarpal, the carpometacarpal joint, and Lister's tubercle, with the snapping most pronounced over the carpometacarpal region. Mild clinical trapeziometacarpal instability was also observed and reproduced during stress testing, contributing to dynamic tendon subluxation rather than being an incidental finding.

Plain radiographs were unremarkable. MRI demonstrated mild tendinopathy of the extensor pollicis longus tendon over the dorsal carpometacarpal region without intra-articular pathology. Conservative management—including activity modification, splinting, non-steroidal anti-inflammatory medication, and targeted physiotherapy—failed to provide meaningful relief.

Dynamic ultrasound performed preoperatively documented cubital subluxation of the extensor pollicis longus during active flexion–extension at the base of the first metacarpal and carpometacarpal joint.

Given persistent symptoms and functional limitation, surgical reconstruction under WALANT anaesthesia was planned to accurately localize the snapping and confirm real-time correction intraoperatively. A postoperative clinical image or radiograph may be included to illustrate the final tendon position and surgical outcome.

Operative technique

A longitudinal incision was made from the base of the first metacarpal to Lister's tubercle. Intraoperative testing under WALANT anaesthesia confirmed reproducible snapping at the base of the first metacarpal, with no evidence of trapeziometacarpal instability and no triggering at Lister's tubercle.

Isolated fascial release failed to eliminate the snapping. A hemitendon graft of the extensor carpi radialis longus was harvested proximally using a pass-through technique, preserving its distal insertion on the second metacarpal. The graft was then passed around the extensor pollicis longus to create a dorsal pulley ("neosheath") intended to centralize the tendon and prevent abnormal cubital translation. Careful tensioning was performed with the thumb in neutral extension and slight abduction to ensure that the pulley provided restraint without restricting physiological tendon excursion. The graft was secured bilaterally to the diaphysis of the first metacarpal using two suture anchors placed approximately 1 cm apart, positioned to recreate a broad dorsal restraint and minimize point-loading (Figure 1).

Figure 1: Intraoperative construction of the dorsal "neo-sheath" pulley using a hemi-tendon graft of the extensor carpi radialis longus. The graft is shown looped around the extensor pollicis longus and secured to the diaphysis of the first metacarpal with two suture anchors placed approximately 1 cm apart, creating a broad dorsal restraint designed to centralize the tendon during thumb motion.

Dynamic intraoperative movement demonstrated complete resolution of extensor pollicis longus subluxation (Video 1). High-resolution images and a fully accessible version of the intraoperative video should be included in the final submission to illustrate the construct and confirm stability.

Video 1: Testing the stability of the new pulley construction with walant.

Discussion

Symptomatic subluxation of the extensor pollicis longus (EPL) tendon is an uncommon but functionally limiting condition. Although most reported cases relate to mechanical conflict at Lister's tubercle, tendon attrition, postoperative changes, or stenosing tenosynovitis, EPL snapping associated with trapeziometacarpal (TMC) joint behaviour is exceptionally rare. In this patient, dynamic instability of the EPL occurred at the level of the first metacarpal base rather than at the more typical third extensor compartment, highlighting a distinct biomechanical mechanism.

Effective management requires restoration of normal tendon biomechanics. The neo-sheath created in this technique provides a broad dorsal restraint that centralizes the EPL while preserving physiological tendon excursion. From a biomechanical standpoint, the construct acts as a stabilizing pulley, reducing pathological cubital translation without imposing excessive constraint. This distinguishes it from traditional methods of EPL stabilization, such as retinacular tightening, third-compartment reconstruction, or Lister's tubercle reshaping, which address instability more proximally and do not correct instability at the first metacarpal level.

Several tendon grafts have been described for TMC ligament reconstruction—including flexor carpi radialis, extensor carpi radialis longus, abductor pollicis longus, and palmaris longus [15-17]. The dorsoradial exposure required to evaluate EPL subluxation provides direct access to the distal ECRL tendon, making the hemi-ECRL graft particularly practical. It avoids additional incisions and offers a robust graft suitable for both TMC stabilization and dorsal pulley formation.

The use of WALANT anaesthesia was advantageous, allowing real-time assessment of EPL motion and verification of snapping elimination before closure. This is especially valuable in dynamic tendon pathology, where subtle maltracking may only be evident during active motion.

Potential complications of this approach include graft adhesions, over-constraint of the tendon leading to loss of flexion or extension, anchor loosening, and graft elongation over time. None were observed in the present case. At 12-month follow-up, the patient showed full resolution of snapping, restoration of normal thumb biomechanics, and excellent functional recovery, with full range of motion, normal grip and pinch strength, and no residual pain. The QuickDASH score improved from 43 preoperatively to 2 postoperatively.

This case demonstrates a reproducible strategy that addresses a rare mechanism of EPL instability while minimizing morbidity. Further studies with larger patient cohorts would help define long-term outcomes and refine indications for this technique.

Conclusion

We describe a rare case of dorsal EPL snapping successfully treated through reconstruction of a dorsal pulley using a hemi–extensor carpi radialis longus graft under WALANT anaesthesia. The technique allows dynamic intraoperative confirmation of tendon stability and provides a reliable, anatomically coherent method of restoring EPL biomechanics at the level of the first metacarpal. Its minimally invasive nature and capacity for real-time adjustment make it a valuable option for similar presentations. Future clinical series may further clarify its applicability and long-term durability.

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