



Case Report

Extensor Pollicis Longus Tendon Translocation with a History of Thumb Polydactyly Surgery



Ahmadreza Afshar, MD, * Ali Tabrizi, MD, * Mohammad Javad Shariyate, MD *

* Department of Orthopedics, Imam Khomeini Hospital, Urmia University of Medical Sciences, Urmia, Iran

ARTICLE INFO

Article history:

Received for publication April 20, 2026

Accepted in revised form May 1, 2026

Available online June 16, 2026

Key words:

Extensor pollicis longus

Extensor tendon snapping

Sagittal band

Thumb Boutonnière deformity

Thumb polydactyly

Nontraumatic and nonrheumatoid translocation of the extensor pollicis longus (EPL) tendon at the metacarpophalangeal (MP) joint is rare and may result from insufficiency of the dorsoradial capsule and sagittal band complex. We report a 41-year-old carpet weaver woman with a history of childhood thumb polydactyly reconstruction who presented with painful EPL translocation during thumb motion. She had previously undergone unsuccessful surgery for presumed EPL snapping at the wrist. Intraoperative findings revealed a normal extensor pollicis brevis tendon and 2 EPL tendons, both displaced ulnarly at the MP joint, along with a deficiency of the radial sagittal band. Surgical management consisted of ulnar sagittal band release and reconstruction of the dorsoradial stabilizing structures by reefing the residual radial EPL aponeurosis to the MP joint capsule to centralize the tendon. At 6-month follow-up, the patient had complete resolution of symptoms and stable tendon tracking. This case highlights the potential for late EPL instability following thumb polydactyly reconstruction, likely because of loss of radial restraint, unopposed ulnar vector, and repetitive stress.

Copyright © 2026, THE AUTHORS. Published by Elsevier Inc. on behalf of The American Society for Surgery of the Hand. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Nontraumatic and nonrheumatoid translocation of the extensor pollicis longus (EPL) tendon because of insufficiency of the dorsoradial capsule of the metacarpophalangeal (MP) joint and the thumb extensor hood is a rare condition. Only a limited number of case reports of EPL tendon translocation have been published in the English literature.^{1–6} To the best of our knowledge, only a single case of EPL tendon translocation following thumb polydactyly surgery has been described in the literature.³

Here, we report a rare case of EPL translocation in a patient with a prior history of thumb polydactyly surgery.

Case Report

Written informed consent was obtained from the patients for patients' anonymized information to be published in this article.

The study was approved by the medical research and ethics committee of the Urmia University of Medical Sciences with registered Numbers: IR.UMSU.REC.1405.019. Available at: <https://ethics.research.ac.ir/IR.UMSU.REC.1405.019>.

Corresponding author: Ahmadreza Afshar, MD, Urmia University of Medical Sciences, Department of Orthopedics, Imam Khomeini Hospital, Modaress Street, Ershad Boulevard, Urmia, 57157 81351, Iran.

E-mail address: afsharahmadreza1963@gmail.com (A. Afshar).

A 41-year-old right-handed woman presented with pain along her right thumb and a catching sensation caused by EPL tendon translocation, associated with thumb abduction and extension (Video S1, available online on the Journal's website at <https://www.jhsgo.org>). Extensor pollicis longus translocation became more pronounced when the MP and interphalangeal (IP) joints were flexed. The thenar eminence was relatively flat and underdeveloped. She worked as a carpet weaver and used her thumb and fingers to make and tighten special carpet knots. She first noticed EPL tendon translocation in her youth; however, pain developed and worsened over the prior year due to increasing work demands.

She had undergone thumb polydactyly surgery at age 2 years, but the operative record was unavailable. Based on the apex of the surgical scar over the MP joint, her condition was likely Wassel type IV, and the radial thumb was removed (Fig. 1).

Six months before presentation, she underwent surgical release of the EPL around the Lister tubercle for presumed EPL snapping (Fig. 2); however, her symptoms persisted. On examination, the MP joint was stable. Plain radiographs of the MP joint were unremarkable.

Under local anesthesia, surgical exploration was performed of the extensor hood, EPL tendon, and possible reconstruction. Intraoperatively, one extensor pollicis brevis (EPB) tendon with a normal insertion was identified, whereas two EPL tendons were present and both were displaced to the ulnar side of the MP joint



Figure 1. The surgical scar of thumb polydactyly surgery is apparent over the MP joint. Regarding the apex of surgical scar, the thumb polydactyly was Wassel type IV. The thenar area is relatively flat and underdeveloped. MP, metacarpophalangeal.



Figure 2. Surgical scar over the wrist demonstrates that 6 months before she had a surgery to release EPL around the Lister tubercle with a diagnosis of EPL snapping; however, the outcome was unsuccessful.

(Fig. 3). The abductor aponeurosis (radial sagittal band) on the dorsoradial side of the MP joint was not identifiable and was insufficient to centralize the EPL tendon over the MP joint.

To centralize and stabilize the EPL tendon over the MP joint, the ulnar sagittal band was released. Reconstruction of the dorsoradial

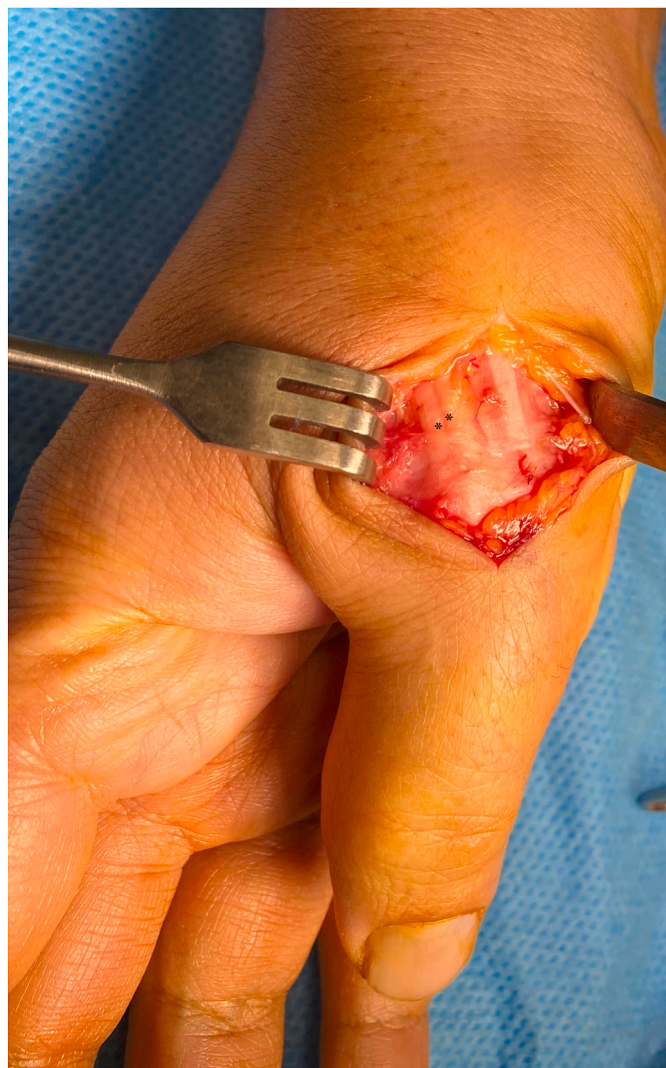


Figure 3. The EPB had a normal attachment, but there are 2 EPL tendons (*) which were displaced to the ulnar side of the MP joint.

sagittal band was performed by reefing the remnant of the radial EPL aponeurosis to the dorsoradial capsule of the MP joint (Fig. 4). Intraoperatively, the EPL tendon was tracked and confirmed to course centrally during active thumb abduction, extension, and flexion of the MP and IP joints.

After surgery, the thumb was immobilized in a thumb spica cast for 3 weeks. At 6-month follow-up, she had complete resolution of pain and EPL translocation and reported satisfaction with the clinical outcome.

Discussion

The thumb sagittal bands form a U-shaped stabilizing structure around the MP joint, with radial and ulnar components contributing to centralization of the EPL tendon during motion. The radial sagittal band arises from a confluence including the abductor pollicis brevis (APB), A1 pulley, and palmar plate, whereas the ulnar band is associated with the adductor pollicis and inserts onto the ulnar sesamoid, A1 pulley, and palmar plate. Together, these structures stabilize the EPL over the MP joint. Notably, the dorsoradial aspect of the MP joint capsule represents the weakest portion of this stabilizing complex.³

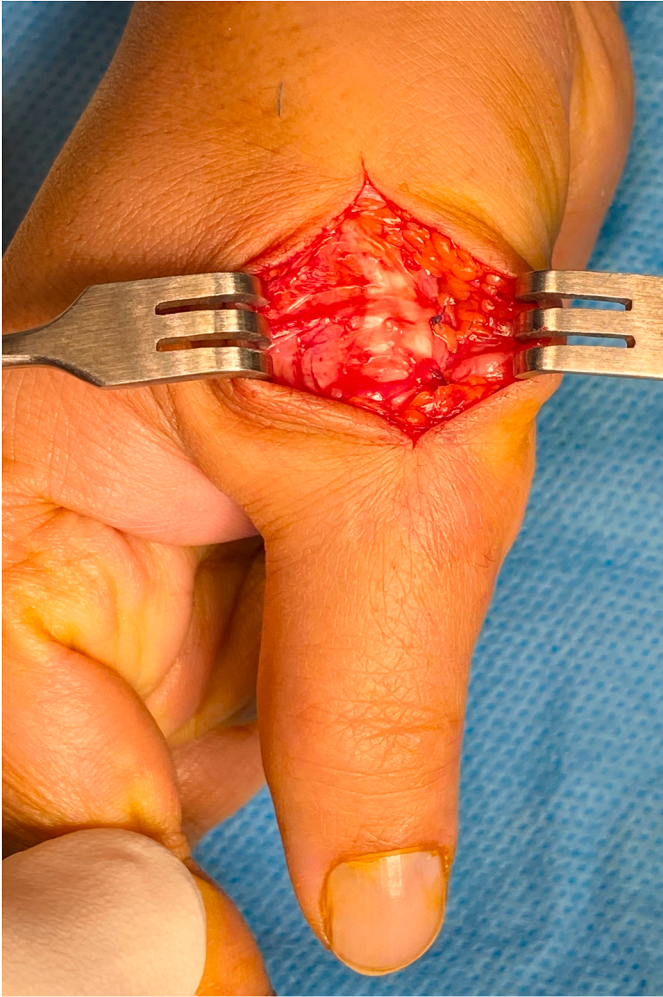


Figure 4. EPL tendons are centralized and stabilized over the MP joint, the ulnar sagittal band was released, and the remnant of the EPL radial aponeurosis was reefed to the dorsoradial capsule of the MP joint.

In this case, EPL translocation can be explained by a combination of structural imbalance and repetitive mechanical stress. Transfer of the APB during prior polydactyly reconstruction likely compromised the radial sagittal band and dorsoradial capsular support, resulting in reduced restraint against ulnar-directed forces. The persistent pull of the adductor pollicis and the intrinsic ulnar vector of the EPL, combined with repetitive dorsoradial loading during carpet-knot tightening, likely led to progressive attenuation of the extensor hood and eventual EPL translocation.³

Importantly, the EPB remained intact in this patient. In contrast, traumatic and rheumatologic Boutonnière deformities of the thumb typically involve disruption of the dorsoradial capsule, extensor hood, and EPB. Loss of these stabilizers predisposes to ulnar displacement of the EPL, resulting in impaired MP extension and compensatory IP hyperextension. The preserved EPB in this case may explain why a true Boutonnière deformity did not develop.^{1,2}

Cardon et al¹ reported patients with chronic dorsoradial MP joint injuries characterized by EPL ulnar subluxation and EPB disruption without collateral ligament injury, representing a more severe pattern of extensor mechanism failure. Compared with those cases, the current presentation reflects a more localized instability, likely limited by preservation of the EPB.

Nontraumatic and nonrheumatoid EPL translocation due to dorsoradial capsular insufficiency is rare. Prior thumb polydactyly reconstruction likely predisposed this patient to sagittal band imbalance, similar to the mechanism described by Feltrin and Dinh.³

This case also underscores the importance of distinguishing EPL instability at the MP joint from wrist-level pathology. The patient's prior unsuccessful treatment for presumed EPL snapping at the Lister tubercle illustrates how mislocalization may delay appropriate management.

Overall, this case emphasizes the need for meticulous reconstruction of the dorsoradial MP joint capsule, preservation or restoration of radial-sided stabilizers such as the APB aponeurosis, and precise centralization of the EPL tendon during thumb polydactyly surgery to prevent late instability.

Ethical approval

The study was approved by the medical research and ethics committee of the Urmia University of Medical Sciences with registered Numbers: IR.UMSU.REC.1405.019. Available at: <https://ethics.research.ac.ir/IR.UMSU.REC.1405.019>

Informed consent

Written informed consent was obtained from the patients for patients' anonymized information to be published in this article.

Conflicts of Interest

No benefits in any form have been received or will be received related directly to this article.

Acknowledgments

We would like to express our special thanks and profound gratitude to Clinical Research Development Unit of Imam Khomeini Hospital, Urmia University of Medical Sciences, Urmia, Iran, for their guidance, consultation, and support.

References

- Cardon LJ, Toh S, Tsubo K. Traumatic boutonniere deformity of the thumb. *J Hand Surg Br.* 2000;25(5):505–508. <https://doi.org/10.1054/jhsb.1999.0303>
- Churchill M, Citron N. Isolated subluxation of the extensor pollicis longus tendon. A cause of 'boutonnière' deformity of the thumb. *J Hand Surg Br.* 1997;22(6):790–792. [https://doi.org/10.1016/s0266-7681\(97\)80450-0](https://doi.org/10.1016/s0266-7681(97)80450-0)
- Feltrin M, Dinh A. Nontraumatic extensor pollicis longus snapping: report of 2 cases. *JBJS Case Connect.* 2025;15(4). <https://doi.org/10.2106/JBJS.CC.25.00032>
- Godwin Y, Ter Horst B, Scerri G. Isolated dorsoradial capsular tear of the thumb metacarpophalangeal joint: missed diagnosis and the management of delayed presentation. *Ann Plast Surg.* 2018;80(2):121–124. <https://doi.org/10.1097/SAP.0000000000001202>
- Jaibaji M, Rayan GM, Chung KW. Functional anatomy of the thumb sagittal band. *J Hand Surg Am.* 2008;33(6):879–884. <https://doi.org/10.1016/j.jhsa.2008.01.039>
- Krause JO, Manske PR, Mirly HL, Szerzinski J. Isolated injuries to the dorsoradial capsule of the thumb metacarpophalangeal joint. *J Hand Surg Am.* 1996;21(3):428–433. [https://doi.org/10.1016/S0363-5023\(96\)80358-3](https://doi.org/10.1016/S0363-5023(96)80358-3)