

Rupture of EPL in a Pediatric Patient After Distal Radius Physeal Fracture

A Case study

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Case Report

- 14 yo F, fall off of a horse onto an outstretched hand
- No significant PMH
- Diagnosed with SH2 Distal Radius Fx
- Splinted with sugar tong in the ED & transitioned to removable wrist brace in clinic within 1st week

Initial Injury Films



Case Report

- 4 weeks out from injury experienced “pop” in wrist while playing in the yard
- Clinical diagnosis of EPL rupture with inability to extend at thumb IP joint

Plain films at
time of
diagnosis of
EPL rupture



Background

- Distal Radius Fractures are one of the most common fracture types in the pediatric population
- Typically managed conservatively
- EPL ruptures have been reported in up to 5% of adult distal radius fractures
- Loss of extension at thumb IP joint requires surgical intervention
- Tendon transfer with EIP is a well documented treatment method when EPL has lost its integrity

DELAYED RUPTURE OF THE EXTENSOR POLLICIS
LONGUS TENDON FOLLOWING INTRAMEDULLARY
NAILING OF A RADIAL FRACTURE IN A CHILD

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Extensor Pollicis Longus Tendon Rupture After
a Pediatric Distal Radius Fracture

A Case Report and Literature Review

Harshadkumar A. Patel, MD, Mark C. Lee, MD, and Sonia Chaudhry, MD

Investigation performed at Connecticut Children's Medical Center, Hartford, Connecticut

**Ruptured Extensor Pollicis Longus Tendon After
a Nondisplaced Distal Radius Fracture in a Young
Adult Soccer Player**

Robert Bogart, DO, and Kathryn Vidlock, MD

Surgical Technique

- Linear vertical incision over Lister's Tubercle, identify proximal and distal stumps of EPL
- Incisions made over dorsum of 2nd MCP joint and base of 2nd MC
- EIP transected proximal to extensor hood and mobilized through proximal wound
- Final incision over dorsum of thumb MCP joint, EIP passed through tunnel
- EIP connected to distal EPL stump with Pulvertaft weave using 4-0 ethibond

Surgical Technique

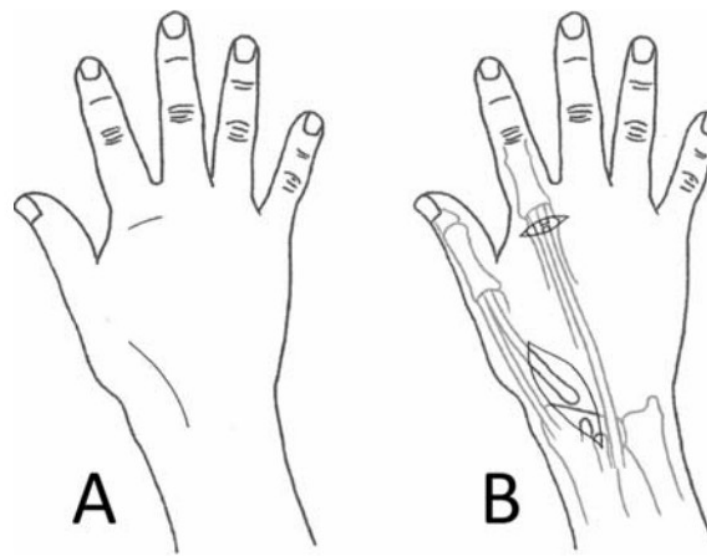


Fig. 1 A) The surgical incisions, B) The ruptured EPL stump and the EIP tendon were identified.

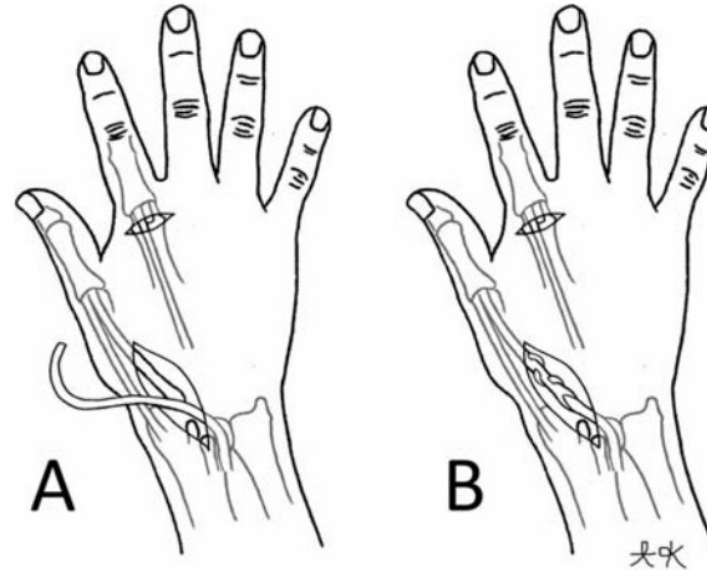



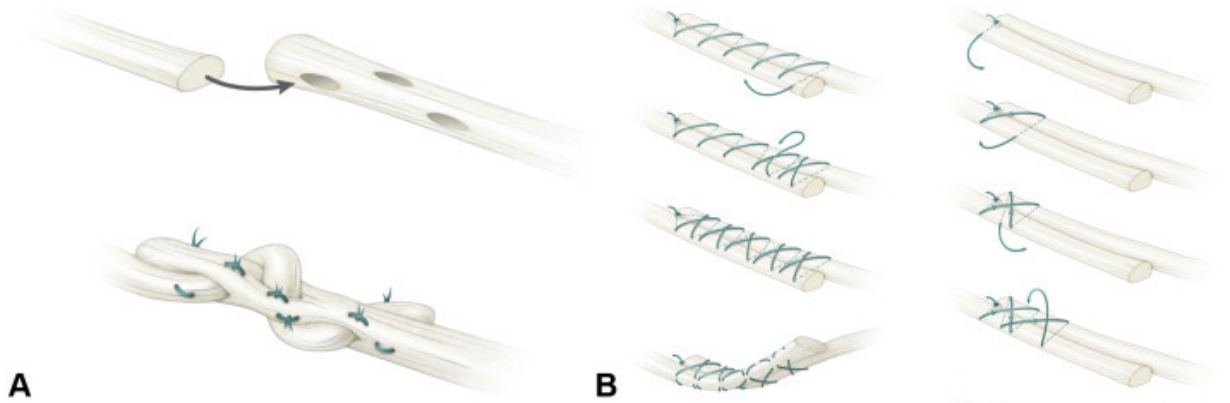
Fig. 2 A) The EIP tendon was pulled through first incision, B) The EIP was sutured to the EPL tendon with Pulvertarf technique.

Scientific Article

Biomechanical Study Comparing Pulvertaft, Double Side-to-Side, and Locking Side-to-Side Tendon Suture Techniques

Jaimy E. Koopman MD*, Caroline A. Hundepool MD, PhD*, Liron S. Duraku MD, PhD*,
Mick Kreulen MD, PhD†, J. Michiel Zuidam MD, PhD*  

Tendon Reconstruction Techniques



Post-op
confirmation
of repair



Results

- 4 weeks of cast immobilization following EIP transfer
- Transitioned to removable brace and OT initiated
- At 2 month follow-up had full thumb IP flexion/extension
- At 5 month follow-up patient back to full activities including piano and sports with no subjective complaints

Discussion

- Did removable wrist brace allow more motion than a cast resulting in more significant callus formation?
- No recommendation in literature regarding timing to surgical correction
 - Successful outcomes reported in cases up to 15 months out from EPL rupture
 - Our patient underwent surgery within 2 months, cleared for full activity at 2 months
- Further studies with larger cohort may identify common risk factors, additional management options and outcomes