

# 2019 NEHS Annual Meeting Abstract Submission

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ABSTRACT TITLE *	Reoperation and functional outcome following zone II flexor pollicis longus repair
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Name of who will present abstract at NEHS meeting on December 6, 2019 Please note that the same person cannot present more than one abstract at the meeting. *	Kiera Lunn
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## ABSTRACT – should include background information and a description of methods, programs, or practices. \*

**Background:** Several surgical treatments for zone II flexor pollicis longus (FPL) tendon lacerations exist. Primary tendon repair can achieve good/excellent results in 62%, but FPL tendon reconstruction with tendon graft reconstruction may only lead to satisfactory results. Because only few studies have reported on FPL zone II lacerations the aim of this study was to (1) assess the factors associated with reoperation and (2) assess factors influencing active thumb interphalangeal (IP) joint flexion.

**Methods:** We retrospectively identified 104 patients with direct surgical primary repair of a zone II laceration of the FPL treated at one institutional system from 2000–2016. A medical chart review was performed to collect patient-, injury- and surgery characteristics. A reoperation was defined as unplanned surgery on the ipsilateral thumb following surgery. Active flexion of the IP-joint was retrieved from the medical charts as reported by the treating physician or occupational therapist prior to reoperation, which was reported in 57 patients. A Kessler-type repair technique was most commonly performed (n=69, 71%) and an epitendinous suture was performed in 55 patients (55%). We performed bivariate analysis to identify factors associated with reoperation and multivariable analysis for the factors influencing active IP-joint flexion including explanatory variables with a  $p < 0.1$ .

**Results:** The reoperation rate was 17% (n=18) at a median of 3.0 months (range: 0.43–6.5). Indications for reoperation included adhesion formation (n=10, 56%), re-rupture (n=5, 28%), IP joint instability (n=1, 5.6%), granuloma formation (n=1, 5.6%) or wound healing problems (n=1, 5.6%). There were no factors that showed a statistical association with reoperation. The median range of active IP-flexion was 30° (IQR: 20–45) at a median of 12.4 weeks (IQR: 8.1–16.7). Solitary injury to the thumb (beta=17.9,  $p=0.022$ ) and the use of epitendinous suture (beta=10.0,  $p=0.031$ ) were associated with increased active IP-joint flexion, but failed to identify their independent influence in multivariable analysis. When comparing pre-operative to post-operative active IP-flexion of the patients that underwent tenolysis, this improved by a median of 20° (pre-operative: 27.5° (IQR: 10–30) vs. post-operative: 45° (IQR: 45–45).

**Conclusion:** Almost 1 in 5 patients undergo reoperation following primary direct repair of a zone II FPL laceration, mostly within 6 months of initial surgery. The use of epitendinous suture seems to result in increased active IP-flexion. Patients with multiple digits injured accompanying a zone II FPL laceration have inferior IP-joint motion.

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