

Acute Repair of a Birth-Associated Zone I Flexor Tendon Injury: A Case Report

Mary Katharyn Fatehi, Ariel Aminov, Matthew William Konigsberg

INTRODUCTION: Flexor tendon injuries in neonates are extremely rare, especially those sustained from a Cesarean section (C-section). Neonatal lacerations during C-sections occur in 0.7% to 3.12% of cases, but those involving the flexor tendon remain very uncommon, with only four prior cases reported in the literature. Optimal timing for repair in neonates remains a subject of debate, as both delayed and acute repairs have demonstrated favorable outcomes. We present a case of a 38-week-old neonate who sustained a zone I flexor digitorum profundus (FDP) tendon injury and digital nerve laceration during a C-section, successfully repaired four days after birth.

METHODS: A 1-day old infant was transferred to our institution for the management of a full-thickness laceration over the volar aspect of the right index finger with exposed lacerated flexor tendon. Examination revealed intact flexion at the proximal interphalangeal joint but absent flexion at the distal interphalangeal (DIP) joint, prompting surgical exploration. Surgical exploration revealed a laceration of the radial digital nerve in addition to the laceration of the FDP tendon at the site of the injury. The tendon stumps were repaired using a Kessler stitch, and the radial digital nerve was concurrently repaired. Postoperatively, the patient was immobilized and was discharged the following day.

RESULTS: Four weeks postoperatively, the mitten cast was removed and the patient demonstrated spontaneous flexion of the DIP joint. The patient was cleared to begin occupational therapy for gentle passive extension of the index finger. Six weeks postoperatively, the patient exhibited active flexion at the DIP joint and improved passive extension. Passive extension remained 20 degrees shy of full extension due to stiffness. At the most recent follow-up at 8 months of age, the patient had full active and passive range of motion of the right index finger. There were no differences in range of motion between the right and left index fingers.

DISCUSSION AND CONCLUSION: This case report highlights the success of a flexor tendon repair in an infant, performed acutely post-injury from a C-section. However, several factors should guide clinical decision-making. For example, some benefits of delayed repair include reduced anesthetic neurotoxicity risks, larger tendon and neurovascular structure size, and improved participation in postoperative rehabilitation. Given the limited literature, our findings support further investigation into the advantages of acute versus delayed repair to create appropriate guidelines for similar cases that may occur in the future.



Figure 1. Intraoperative photo showing the proximal stump of the flexor tendon on the right index finger.