



# Surgical Outcome of a Transfer of the Flexor Hallucis Longus Tendon to the Flexor Digitorum Longus Tendon Following a Traumatic Event

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## Introduction

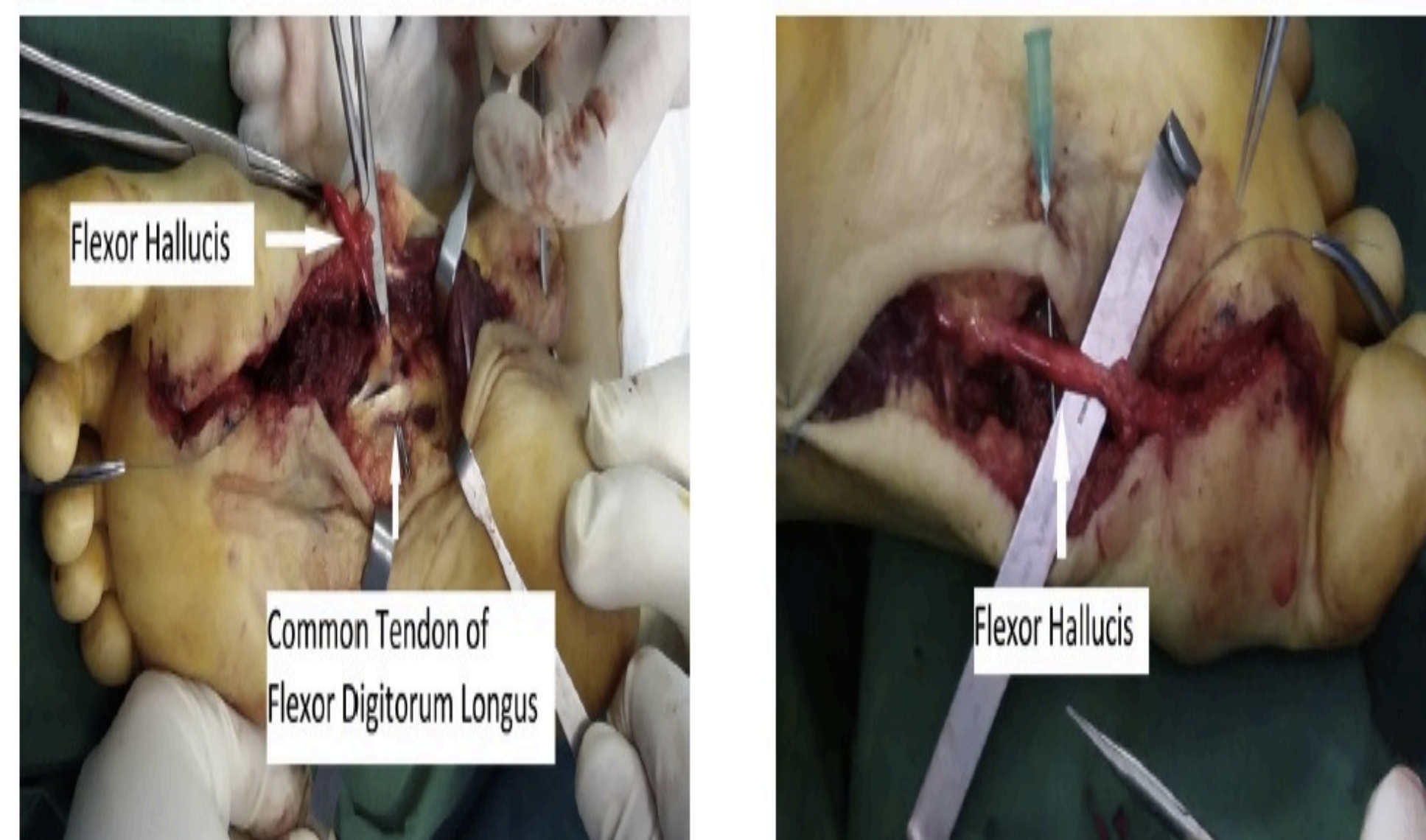
- The Flexor Hallucis Longus (FHL) originates from the lower two-thirds of the posterior fibula
- The tendon runs posterior to the medial malleolus within a sheath, which courses between the medial and lateral tubercles of the posterior aspect of the talus. The FHL inserts into the distal phalanx of the hallux
- The FHL functions to plantarflex and invert the foot while also flexing the hallux
- The Flexor Digitorum Longus (FDL) originates from the posterior surface of the tibia distal to the popliteal line and inserts into the base of the 2<sup>nd</sup> through 5<sup>th</sup> distal phalanges
- The FDL functions to plantarflex and invert the foot while also plantarflexing the 2<sup>nd</sup> through 5<sup>th</sup> toes.
- The FHL is a stance-phase muscle that is activated immediately prior to forefoot loading until just before toe-off within the gait cycle.
- The FDL tendon is an in-phase tendon with the FHL and does not risk overpowering the FHL in the gait cycle

## Presentation

### 8/1/17 – New Patient Consult

- Patient is a 30 year old Type 1 Diabetic Female with peripheral neuropathy who presented to the Emergency Department for trauma to the right plantar foot obtained while the patient experienced a hypoglycemic episode of syncope. The patient was immediately sent to the Podiatry clinic for further evaluation.
- The right plantar foot proximal to the 1<sup>st</sup> metatarsophalangeal joint was noted with a deep laceration that probed to the plantar metatarsal neck.
- The hallux was unable to plantarflex
- The decision was made to proceed with surgery for repair of the FHL tendon

## Surgical Presentation



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### 8/4/17– Outpatient Surgery

- Due to multiple reasons non-podiatry related, surgery was unable to be performed until 3 days following the traumatic event
- The proximal stump of the FHL tendon was not able to be located following extensive debridement and searching along the course of the FHL tendon proximally to the level of the midfoot
- The decision was then made to perform a lateral transfer of the distal Flexor Hallucis Longus stump and perform a tenodesis with the tendon of the Flexor Digitorum Longus.
- Successful tenodesis occurred in surgery and the tenodesis was performed using fiberwire
- The patient was instructed to be on a strict non weight bearing status and placed in a posterior splint post-operatively.

### 8/7/17– Post Op Visit #1

- Minimal pain and swelling consistent with routine post-operative course
- The patient remained non weight bearing without any complications to the surgical site

### 8/21/17– Post Op Visit #2

- No pain and very minimal swelling. Sutures removed and skin edges are well-coapted.
- The patient was able to minimally perform an active plantarflexion of the hallux
- The patient was kept non weight bearing and placed in a CAM Boot for 4 more weeks.

### 9/18/17– Post Op Visit #3

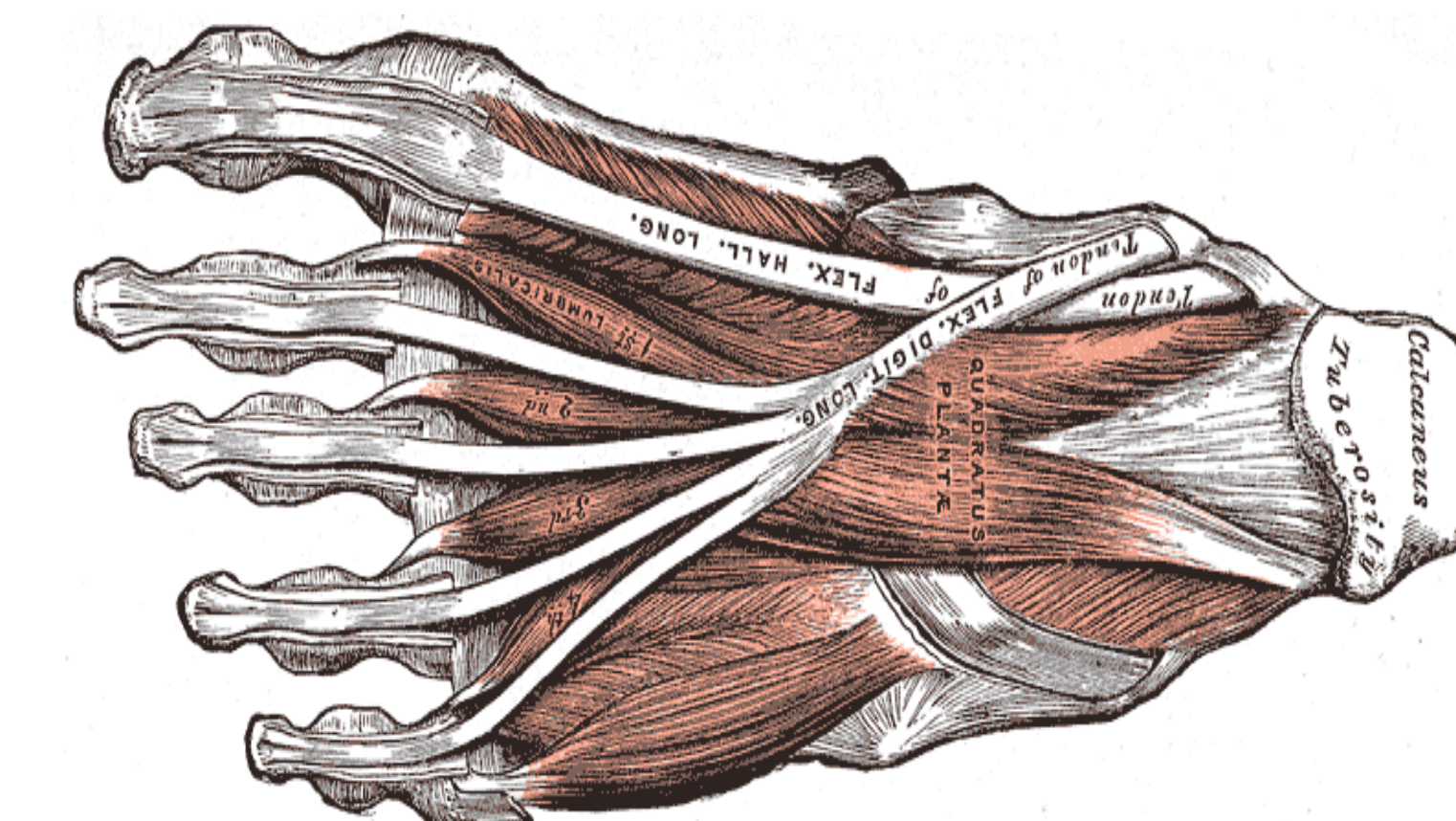
- No pain and the skin was healed with a normotrophic cicatrix.
- The patient was compliant with all post-operative instructions
- The patient was able to perform an increased amount of active plantarflexion of the hallux as compared to the previous visit.
- Transfer of the FHL tendon transfer was noted with some loss of push-off strength as well a mildly noted diminished overall hallux plantarflexion.
- The patient was then sent to 4 weeks of Physical Therapy to improve the hallux range of motion and strength
- Follow-up was scheduled for 3 months

### 12/18/17– Post Op Visit #4

- Upon completion of physical therapy, complete restoration of the flexor hallucis longus was noted.
- No weakening was noted and the patient had returned to her physical activities without any pain or complications

## Conclusions

- A successful surgical tenodesis was performed with full restoration of hallux function and range of motion
- Since the FHL and FDL tendons are in-phase with each other and have similar functions, the tendons did not overpower each other
- Following a course of physical therapy, the patient was able to return to her normal activities without any pain or decrease in functional abilities to her foot.



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