APOA Foot & Ankle Council Presents..

Case of the Fortnight

15th July 2021

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Title:

Reconstruction of Failed (EHL) Repair with Dual Peroneus Tendon Autograft

Presented by:

Dr. Leow Voon Chin

Orthopaedic and Foot & Ankle Surgeon, currently working in Kulim Hospital, Kedah, Malaysia

Learning Points:

- Diagnosis of EHL injury during the index injury is important (local anaesthesia can be used to reduce pain and check for extension function ability). Many cases may be missed by emergency and out patient doctors.
- Always consider grafting in neglected cases, high tension repair will fail.
- Adequate immobilization post repair or reconstruction is very important.
- Physiotherapy is very important and to educate the patient about the importance of it can be a game changer in the outcome of the surgery.

*Upcoming Case of the Fortnight on **1st August 2021***

Presented by:

Dr. Pongpol Petchkum

Foot and Ankle Division Orthopaedic Dept., Bhumibol Adulyadej Hospital, Royal Thai Air Force, Bangkok, Thailand

Title:

Achilles Tendon Repair with Mini-Open Technique

Want to present a case? Write to...

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Reconstruction of Failed Extensor Hallucis Longus (EHL) Repair with Dual Peroneus Tendon Autograft

Dr. Leow Voon Chin

Orthopaedic and Foot & Ankle Surgeon, Currently working in Kulim Hospital, Kedah, Malaysia

Short note on the case :

This patient is a 26 year old software engineer who had history of injury to her right big toe 6 weeks prior to her presentation to my centre. A piece of broken glass fell directly on her right big toe and the laceration was sutured under local anaesthesia at an outpatient clinic.

Three weeks later, she noticed she was not able to extend her right big toe. She sought treatment at another hospital and the treating orthopaedic surgeon informed her that her right EHL was cut. The EHL was repaired and she was discharged with a slab immobilization.

One week after the repair, during wound inspection, she noticed she was not able to extend her toe and went back to the same hospital. Magnetic resonance imaging (MRI) was done and the findings was suggestive of a tear of the repaired EHL.

Patient presented to me at **six weeks** post initial injury for further treatment.

From my assessment, it was a six weeks EHL cut with previous repair and a gap of 5 cm as seen on the MRI scan.

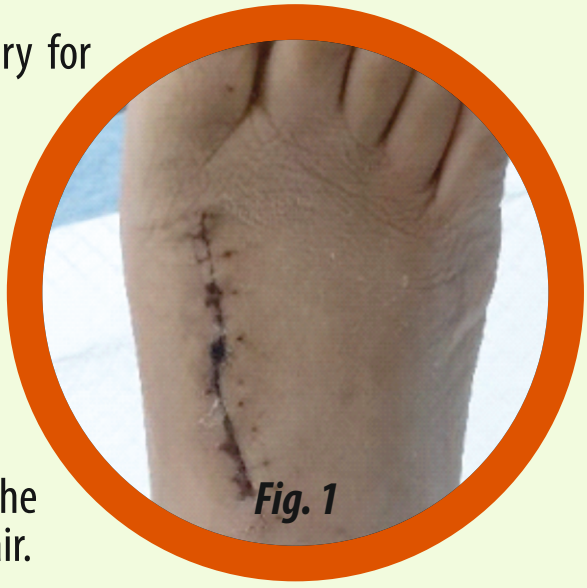

Fig. 1

Assessment:

The 8 cm existing surgical scar was well healed ***(Figure 1)***

Since this was a repeated trauma to the EHL tendon, the stump may be friable from previous trauma and initial repair.

Graft to consider : ITB/Hamsring/Peroneus to bridge the repair.

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Post repair immobilization is important to ensure the graft does not give way again. Patient was counselled thoroughly to expect for a reasonable outcome as it is a chronic injury and the possibility of repair re-rupture.

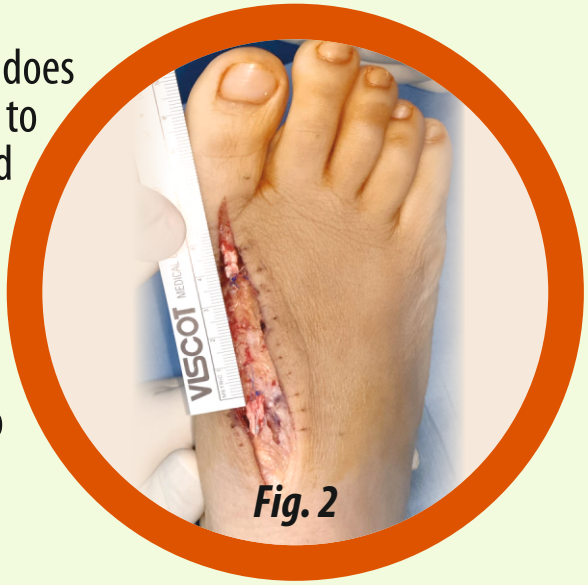

Fig. 2

The first EHL repair failed due to tight tension repair and inadequate immobilization. The gap was around 4 cm before stump end debridement ***(Figure 2).*** There were no signs of infection.

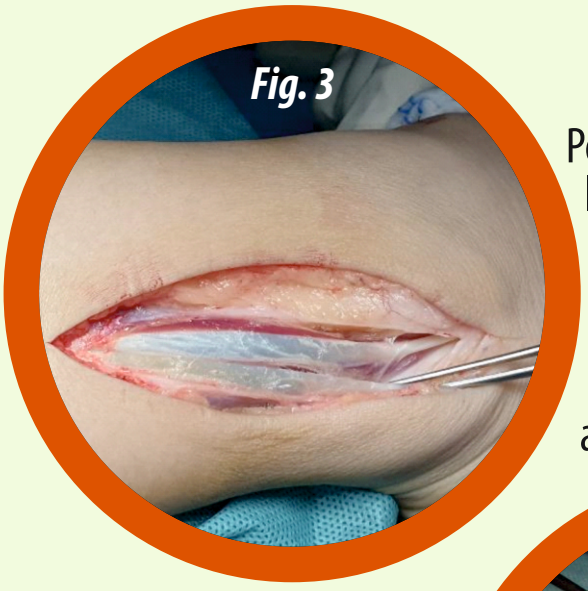
Fig. 3

Peroneus tendon ***(Figure 3)*** was obtained from the same limb. A section of peroneus brevis was harvested to bridge the gap of EHL. I harvested a section of peroneus brevis (5cm), then noticed the graft size was too small. Another section of peroneus longus (5cm) was harvested in the same fashion. This became the dual tendon graft (brevis and longus).

The harvested area was above lateral malleolus ***(Figure 4)*** rather than below the lateral malleolus as shown in the diagram ***(Figure 5)***

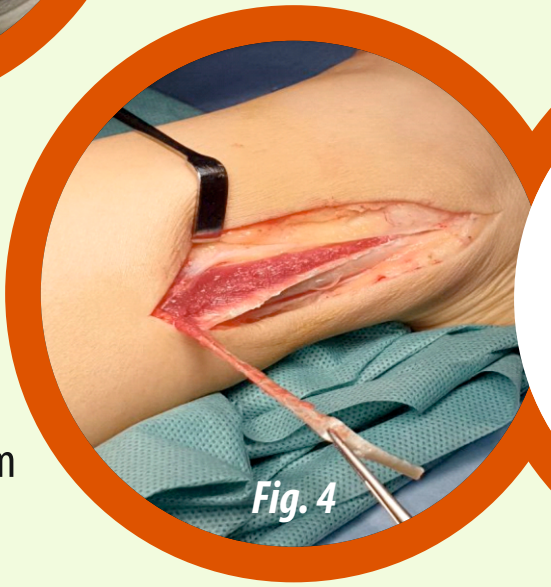
Fig. 4

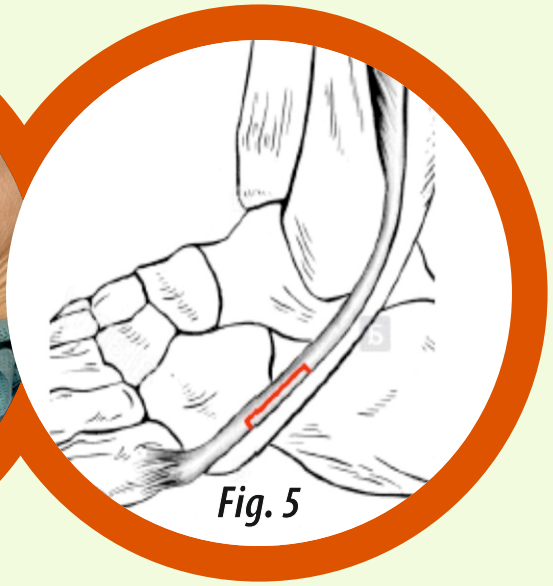
Fig. 5

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A 1.6mm K-wire was inserted oblique through the 1st MTPJ in dorsiflexion position for immobilization before the reconstruction can take place ***(Figure 6).***

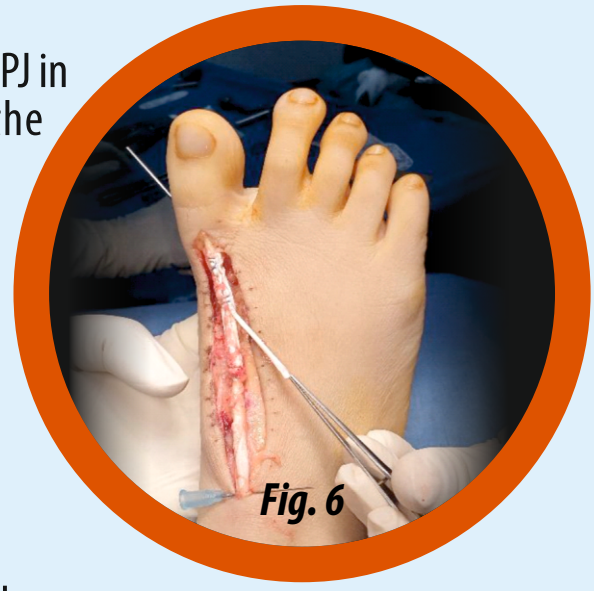

Fig. 6

The Peroneus dual tendon graft matched the size of EHL. The grafts are sutured together with a fine non-absorbable suture.

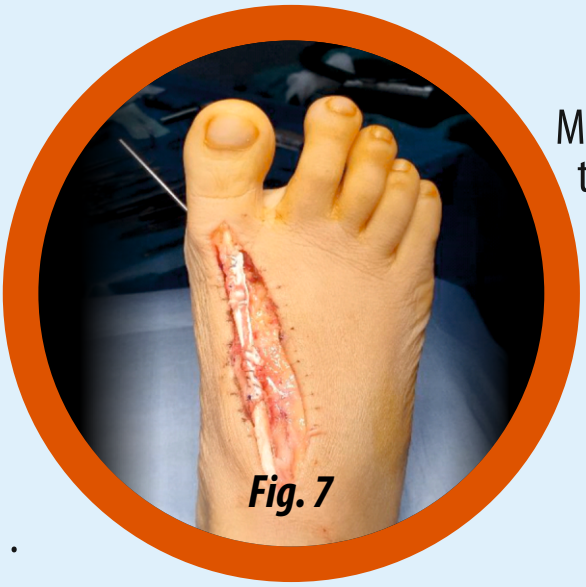

Fig. 7

Modified Kessler technique repair with small running sutures at both ends of the graft to EHL (distal and proximal stump) was performed. ***(Figure 7)*** shows end of the repair, The knot should be made sure to not be pointing up to the skin to avoid future skin irritation. The K wire was planned to be kept for 6 weeks

.

A cross ankle external fixator was applied to immobilize the ankle in plantigrade position to protect the repair and prevent future equinus. ***(Figure 8)*** shows the foot position at 3 weeks.

Fig. 8

*** This patient moved 200km away after the K-wire and external fixator was removed. She was trained and taught to do the foot and ankle exercises at home.*

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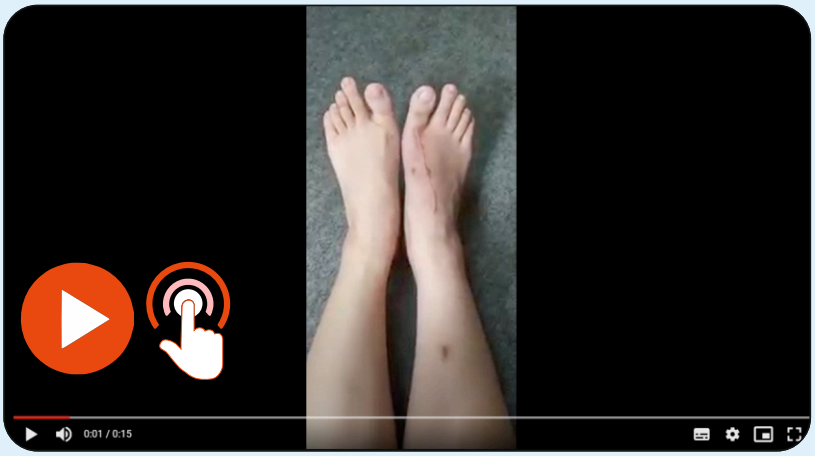
Post Surgery care:

- Wound care
- Suture removal at 2 weeks
- Encourage small toes movement
- Off both the K-wire and External Fixator at 5 weeks
- Foot flexion exercises, ankle strengthening exercise, and propioception.
- Allow gentle scar massage and active+passive 1st MTPJ mobilization

Outcome:

At 3 months



At 5 months