Evaluation of outcome of modified procedure of FHL transfer in chronic tendoachilles rupture with single incision technique

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Abstract

Background: Reconstruction of chronic ruptures of the Achilles tendon often requires an augmentation procedure, such as a turndown flap, a tendon transfer, a tendon graft, or the use of synthetic materials. Several surgical techniques have been described for the treatment of chronic Achilles tendon ruptures, with little evidence that one is clearly superior to another.

Objective: Aim of study to evaluate the outcome of modified FHL TRANSFER in surgical management of chronic tendoachilles rupture with single incision technique.

Keywords: Evaluation, tendoachilles, FHL

Introduction

A study of 20 cases of chronic tendoachilles rupture treated with using flexor hallucis longus augmentation

Inclusion Criteria

1. All patients with chronic tendoachilles rupture and neglected rupture
2. Pts with intrasubstial tear
3. Closed injuries
4. Insertional tendinopathy and tears

Exclusion Criteria

1. Traumatic
2. Avulsion type of tendoachilles rupture
3. Calcaneal fractures
4. compound injuries

Materials and Methods

- All patients with tendoachilles rupture of mean duration of 12wks range from 8wks to 16wks from the time of injury who came to OPD SHADAN MEDICAL COLLEGE between 2018-2020
- Men-12
- Women-8
- AGE-mean-of 46yrs range-40 yrs to 60 yrs
- Were examined clinically, thompson test was positive, obriens needle test
- COMORBIDITIES-AMONG MEN-5 ARE DIABETIC
- AMONG WOMEN-3 are diabetic and one is DM and CKD
- Investigation- x-ray, ultrasound and mri showing complete TA rupture.
- Mean duration of surgery-1hr with in torniquet time
- Technique-FHL augmentation with interferon screw fixation
- Suture material used-ETHIBOND
**Procedure**

- Procedure—we have done TA REPAIR with flexor hallucis transfer with same incision on posterior midline
- FHL is divided at the level medial malleolus at tarsal tunnel and separated from the bed of tendoachilles
- Maximum possible length for tendon transfer taken
- Diameter of FHL is measured and accurate sized tunnel made in calcaneum with cannulated drill
- And FHL, pulled with suture in to tunnel in calcaneum and fixed with interferon screw
- It is attached over the posterior aspect tendoachilles with modified krackow suture
- Intraoperatively, on plantar flexion total TA along with FHL MOVING as single stump
- Once after exposure, gap between the end of TA are assessed.
- In 2 cases, when gap 5cm v-y advancement to fill the gap is done.
- After fhl is harvested at the level of medial malleolus and made like bed and augmentation to ruptured tendon
- Passing the tendon stump in to the calcaneum and anchored with interferential screw
- Postoperative- suture removal done on 15th pod
- Immobilisation with cast in plantar flexion of 10 degrees in 6 weeks.
- Partial weight bearing at after 6wks
- Complete weight bearing after 12wks
- Regular follow up at 6 months, 9 months till 18 months
- All patients underwent an accelerated rehabilitation protocol that featured early weight-bearing and early range of motion.

**Isokinetic exercises of gastrossoleus complex**

- Results- Excellent-12
- GOOD-6
- FAIR – 1
- POOR-1
- RESULTS the 4 point scale described by Boyden et al.

All patients received a removable below-the-knee orthosis (pneumatic walking brace; Aircast, Summit, New Jersey) with a 2-cm heel lift to provide approximately 20° of plantar flexion. The rehabilitation program is outlined in the Appendix. Modalities to reduce pain and swelling were initiated during physiotherapy.

**Outcome Measures**

- The primary outcome was the rerupture rate. Rerupture was diagnosed by the investigating surgeon on the basis of a positive Thompson squeeze test, the presence of a palpable gap, and loss of plantar flexion strength.
- Secondary outcomes included isokinetic strength, the Leppilahti score, ankle range of motion, and calf circumference. The isokinetic plantar flexion

**Advantages**

- Without second incision on plantar aspect of foot augmentation can be done.
- No donor site morbidity,
- NO entry of foot compartments
- Fhl forms as bed for TA
- Less chance of median plantar nerve injury
- Less duration.
- No loss of flexion strength of great toe

**Why FHL**

- Stronger
- Line of contraction similar to ta
- Anatomical proximity
- Vascular supply of distal stump

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**Fig 1: Flex or hallucis tendon transfer**

**Fig 2: Usual method followed**

**Fig 3: Complications**

- Rerupture
- Loss of strength dorsiflexion of big toe
- Infection
- 2 patients
- 1 pt
RESULTS the 4-point scale described by Boyden et al.,

- Excellent-60%
  - no pain, had no limitation of recreational or daily activities, had no footwear restrictions, and was thoroughly satisfied with the results of the procedure

- Good-30%
  - mild occasional pain, had limitation of recreational but not daily activities, had no footwear restrictions, and was satisfied and had only minor reservations.

- Fair-10%
  - had mild to moderate pain, had limitation of recreational and daily activities, had moderate footwear restrictions (an inability to tolerate fashionable shoes, with or without an insert), and was satisfied but had major reservations.

Fig 4: Results the 4-point scale described by Bonden et al.

Conclusion
Surgical management with modified flexor hallucis transfer for chronic TA rupture showing excellent results with minimal complications.

References
14. Zadek I. Repair of old rupture of the tendo Achilles by means of fascia lata: report of a case. J Bone Joint Surg Am. Reference-This observation is similar to that reported in 1977, when Frenette and Jackson found no functional loss in ten young athletes with lacerations of the flexor hallucis longus tendon, four of which were not repaired. 1940; 22:10701.