Treatment of Chronic Achilles Tendon Ruptures with Large Defects

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Our disclosures are in the Final AOFAS Mobile Application. We have no potential conflicts with this presentation.
Achilles Tendon Ruptures

- Most common tendon rupture in lower extremity

- Without treatment, a gap or defect develops at the chronic rupture site causing –
  - Weakness
  - Fatigue
  - Gait imbalance
  - Pain

- Scant literature regarding treatment of chronic Achilles ruptures with large gaps
  - Turn-down of the proximal Achilles across the gap?
  - Flexor hallucis longus (FHL) tendon transfer?
  - Leaving the tendon gap alone & replacing the Achilles
Purpose

- To assess long-term outcomes of surgically treating chronic Achilles tendon ruptures with defects greater than or equal to than 6 cm

- Our method of Achilles reconstruction—
  - A proximal, central Achilles tendon turn-down
  - FHL tendon transfer/augmentation
24 patients with chronic Achilles ruptures & a gap of \( \geq 6 \) cm

- September 2002 – February 2012
- 2 treating surgeons (J.A. & S.M.R.)
- 15 insertional & 9 mid-substance ruptures
- Length of tendon defect measured
  - Pre-operative MRI
  - Intra-operative confirmation

Clinical assessment

- Foot & Ankle Ability Measures (FAAM)
- Visual analog scale (VAS) for pain
- Patient satisfaction
Operative Technique

- Long posterior incision
- Achilles tendon turndown
  - Harvested from the central, proximal tendon
  - Repaired to the distal Achilles vs. calcaneus for mid-substance vs. insertional ruptures
- FHL tendon augmentation
  - Harvested through the same ankle incision
  - Interference screw fit through a bone tunnel in the calcaneus
Post-Operative Treatment

- Non-weightbearing (NWB) x 6 weeks
  - 1st 2 weeks in a splint
  - Next 4 weeks in a 3-wedge Achilles boot
- Progressive to full WB in Achilles boot x 6 weeks
  - Removal of 1 wedge each week
- Physical therapy at 6 weeks
- Gradual return to activity at 12 weeks

Rothman Institute of Orthopaedics at Thomas Jefferson University
Pre-Operative Data

24 patients with 24 chronic Achilles ruptures with large defects

Male : Female 15 : 9

Mean age in years (20 – 74 yrs) 53.3

Right : Left 15 : 9

Mean FAAM (range 20.2 – 53.6 %) 36.3/100

Mean VAS (range 2 - 9) 6.6/10

Mean time from injury – surgery in days 102 (30-315)

Mean amount of Achilles gapping in cm 7.5 (6-12)
Final Post-Operative Data

Mean follow-up in months 74.1 (20-133)

Mean FAAM (range 77.3 - 100%) 90.2/100 P < 0.05

Mean VAS (range 0 - 4) 1.4/10 P < 0.05

Patient Satisfaction

- Excellent 15/24 62.5%
- Good 7/24 29.2%
- Fair 2/24 8.3%
Complications

- 5 of 24 with superficial wound problems
  - Resolved with nonsurgical care
- 1 of 24 with a deep wound infection
  - Required surgical treatment
    - Irrigation & debridement (I & D)
    - Achilles tendon reconstruction not affected
- 1 of 24 with a deep vein thrombosis (DVT)
Our method of surgical reconstruction of chronic Achilles ruptures with large defects results in high rates of –

- Achilles tendon healing
- Return to function
- Pain relief
- Patient satisfaction
References