



Trust.

ROTHMAN
INSTITUTE



Thomas
Jefferson
University

Treatment of Chronic Achilles Tendon Ruptures with Large Defects

Jamal Ahmad, M.D.

Kennis Jones, B.A.

Steven M. Raikin, M.D.

International Federation of Foot & Ankle Societies

American Orthopaedic Foot & Ankle Society

September 19-23, 2014



Disclosure Statement



Treatment of Chronic Achilles Tendon Ruptures with Large Defects

Jamal Ahmad, M.D.

Kennis Jones, B.A.

Steven M. Raikin, M.D.

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

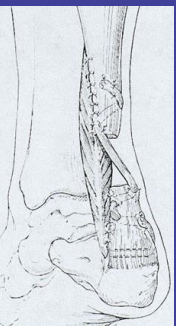
- Most common tendon rupture in lower extremity
- Without treatment, a gap or defect develops at the chronic rupture site causing –

- 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



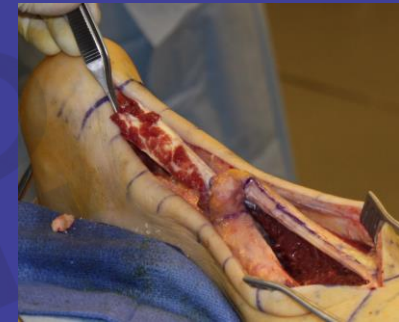
- To assess long-term outcomes of surgically treating chronic Achilles tendon ruptures with defects greater than or equal to than 6 cm
- Our method of Achilles reconstruction—
 - A proximal, central Achilles tendon turn-down
 - FHL tendon transfer/augmentation

- 24 patients with chronic Achilles ruptures & a gap of ≥ 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



- 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



- 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



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%



- 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

- Arner O, Lindholm A. Acta Chir Scand Suppl. 1959; 239: 1-51.
- Bosworth DM. JBJS 1956: 38(A): 111-114.
- Elias I, Besser M, Nazarian LN, Raikin SM. FAI 2007; 28 (12): 1238-1248.
- Takao M, Ochi M, Naito K, Uchio Y, Matsusaki M, Oae K. Arch Orthop Trauma Surg. 2003; 123: 471-474.
- Rahm S, Spross C, Gerber F, Farshad M, Buck FM, Espinosa N. FAI 2013; 34 (8): 1100-1110.
- Wapner KL, Pavlock GS, Hecht PJ, Naselli F, Walther R. FAI 1993; 14: 443-449.
- Wapner KL, Hecht PJ, Mills RH Jr. Orth Clin N Am 1995; 26(2): 249-263.