Rehabilitation for Achilles Tendon Ruptures:
Non-operative vs Post-operative

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Disclosures

- I have no disclosures / conflicts of interest

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Objectives

- To understand considerations for non-operative vs. operative management of Achilles tendon ruptures
- To appreciate the differences in rehabilitation of these two types of management choices

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Non-operative vs Operative

- Case study: You're playing football over Thanksgiving with the neighborhood kids and plant your foot to throw the ball deep and you feel a pop in your Achilles tendon. Imaging shows that it is torn. You go see your surgeon and they give you the choice of repairing it vs managing it conservatively. What should you do? What does your recovery look like? What variables do you need to take into consideration?

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Surgical Treatment

Phase I – Goals involve managing swelling and ensuring wound healing

- Patient education (1st visit – weeks 0-1)
  - How to use crutches and how to maintain NWB'ing status
  - How to care for dressing / incision
  - Icing and elevating
- Progression for weeks 1-2
  - CAM boot added with 3 heel wedges
  - Continued NWB'ing with crutches
  - Continued icing and elevating
- Progressions for weeks 2-3
  - Begin AROM out of boot but mindful to protect DF to neutral only

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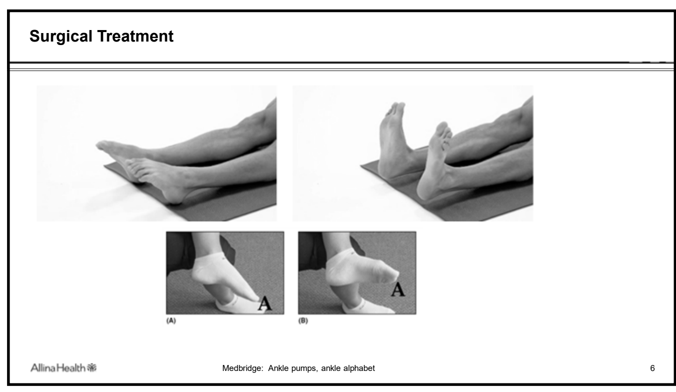
Surgical Treatment



Medbridge: Ankle pumps, ankle alphabet

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Surgical Treatment

Phase II (3-6 week)– Goals involve restoration of WB'ing and early strengthening
Highlights usually include:
- Increasing WB'ing to the point patient can wean from boot
- Decreasing heel lifts
- AROM exercises – DF to neutral only

Phase III (7-8 weeks)
Highlights usually include:
- Normalization of gait
- Full ROM
- Early strengthening for calves

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Surgical Treatment

Exercises to consider:
- Seated heel raises->supported heel raises->standing heel raises from ground with eccentric lowering
- Resisted ankle exercises with tband
- Squats with resistance band
- Leg press

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Surgical Treatment

Phase IV (8-12 weeks)
Highlights include:
- Continued strengthening D/L working towards S/L
- No longer need heel lift

Phase V (3-6 months)
Highlights include:
- Earliest one can start jogging/running
- Starting to add more sport specific exercises / drills
- All ADL's normal by end of 6 months but full recovery can take 12 months
- Return to sport >26 weeks

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Non-surgical Treatment

Parameters for non-surgical treatment
- Must be complete, mid-substance Achilles tear
- Cannot be a tendon avulsion from the calcaneus or gastrocnemius/soleus
- Treatment must be initiated quickly (usually within 48 hours of injury)

Immobilization
- Early immobilization for several weeks in cast in PF position. NWB'ing for 2 weeks
- At 2 weeks switched to Achilles specific walking boot with 40° of heel lifts

Weightbearing:
- After 2 weeks of NWB'ing gradual increase by 25% from weeks 3-6.
- Once full WB'ing is achieved, slowly heel lifts are removed over the next 2-3 weeks.

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Non-surgical treatment

Weeks 8-12:
- Start early strengthening
- ROM limited to neutral DF

Weeks 12-16 weeks
- Continue to work on strengthening working specifically on calf raises

Weeks 16+
- Limit exercises that put significant STRETCH into the tendon until 6 months (lunges, squats, etc)
- Start early dynamic drills (skipping, bounding, etc) once they can do S/L calf raises x25
- In months 6-9 work on starting normal sporting activities that don't involve cutting, sprinting, or contact.
- 12+ months: Starting with jumping and sprinting

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Take home message

So what should one choose if they are confronted with an Achilles tear?
- Take a deep breath and prepare for a long haul.
- Both have an extensive rehab protocol >6 months.
- Both will have some time in NWB'ing although non-surgical is longer

What does the research suggest a patient do?

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Take home message

Results indicated no differences in reoperation rates between operative and nonoperative management of Achilles tendon ruptures. Operative management was associated with an increased risk of complications and higher initial costs, which dissipated over time. Between 2007 and 2015 the proportion of Achilles tendon ruptures managed operatively remained similar despite increasing evidence that nonoperative management of Achilles tendon rupture may provide equivalent outcomes. (Crook et al – JOSPT Feb 2023)

In patients with Achilles' tendon rupture, surgery (open repair or minimally invasive surgery) was not associated with better outcomes than nonoperative treatment at 12 months. There was a slightly higher retear rate in the non-operative treatment group. Increased complications of nerve injuries in the 2 surgical groups. (Myhrvold et al – N Engl J Med April 2022)

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Take home message

Meta-analysis shows that operative treatment of Achilles tendon ruptures reduces the risk of re-rupture compared with nonoperative treatment. However, re-rupture rates are low and differences between treatment groups are small (risk difference 1.6%). Operative treatment results in a higher risk of other complications (risk difference 3.3%). The final decision on the management of acute Achilles tendon ruptures should be based on patient specific factors and shared decision making. This review emphasises the potential benefits of adding high quality observational studies in meta-analyses for the evaluation of objective outcome measures after surgical treatment. (Ochen et al – BMJ Jan 2019).

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Are there any questions?

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