

LOTHIAN PHYSIOTHERAPY BEST PRACTICE STATEMENT

Achilles Tendon Rupture – Surgical Repair Rehabilitation Best Practice Statement

Introduction

Achilles tendon ruptures are the most common tendon injuries of the lower extremity and are most frequent in young and active males around 40 years old. Treatment strategies includes non-operative or operative treatment depending on the type and localisation of the rupture, patient-related factors, and the disposition of the attending surgeon. Within Lothian surgical repair tends to be advised for (a) high performance athletes and (b) late or recurrent presentations. Within surgical repair there is open repair and percutaneous approach (a minimally invasive surgery, (MIS). A recent systematic review has shown that the rehabilitation process itself is more important for the outcome than the initial decision on operative or non-operative treatment.

Postoperative rehabilitation protocols have evolved substantially from restrictive to more progressive. Progressive protocols have a pronounced influence on functional outcomes, including faster return to work and sports.

Scope of practice

This statement is aimed to guide physiotherapists treating patient with a surgical repair of Achilles tendon (either open repair or MIS) within the acute phase. Even though Lothian orthopaedic trauma surgeons are leaning towards non-surgical management of Achilles tendon ruptures, this statement applies for patients receiving physiotherapy treatment with surgical interventions.

Evidence base

Based on literature presented by Mr Felix Massen et al (2022) & literature...

Rehabilitation Instructions

- Week 1-2: patient is immobilised postoperatively in a POP backslab in sufficient equinus to relax the surgical wound. Patients will necessarily be NWB in this.
- Weeks 1-8: First clinic attendance: the backslab is removed and the patient placed in an Aircast with only sufficient wedges inserted to support the heel FWB.
- Wedges are removed one per week until the heel is down in neutral.
- Patient can remove the boot for active ROM exercises without loading.
- Week 8 – follow the non-operative protocol.

Recommendations

- Early functional rehabilitation protocols improve patient satisfaction without increasing complications, therefore, accelerated functional rehabilitation protocols following surgical treatment of Achilles tendon ruptures can be considered safe (Massen et al, 2022)
- Rehabilitation protocols mostly recommend partial weight-bearing for the first post-operative/post-traumatic time period (0-2 weeks), which is either defined as sole to floor contact or weight bearing of maximum of 20 kg. Then increase to half-body weight after 2-3 weeks, followed by full weight-bearing from post-operative week 5 onwards (Frankewycz et al, 2017)
However, please be aware that surgeons will have their own post op instructions regarding individual patient's weightbearing status. Therefore, post-op weightbearing status should be clarified by checking the individual patient's post-op notes / referral documentation.
- Plantar flexion in operatively treated patient is meant to protect the sutured rupture site, however long periods of immobilisation are disadvantageous for intrinsic Achilles Tendon healing. Early mobilised groups showed more rapid restoration of load to failure and tendon structure (Frankewycz et al, 2017)
- Most frequent complications are re-ruptures, superficial and deep infections, and sural nerve palsy (Attia et al, 2023)
- There is still debate on how progressive rehabilitation should be (Maffulli et al, 2022).
- Following acute phase and appropriate screening for post operative complications, it would be advised to follow protocol of conservative management accelerated rehabilitation 8-week protocol version 3 December 2020.

Levels of evidence

A1:

- **Massen F, Shoap S, Turner J, Fan W, Usseglio J, Boecker W, Baumbach S, Polzer H;** (2022) Rehabilitation following operative treatment of acute Achilles tendon ruptures: a systematic review and meta-analysis, EFFORT Open reviews, 7, 680-691.
- **Attia A, Mahmoud K, d'Hooghe P, Bariteau J, Labib S, Myerson M;** (2023) Outcomes and complications of open versus minimally invasive repair of acute Achilles tendon ruptures: a systematic review and meta-analysis of randomized controlled trials, The American Journal of Sports Medicine, 51(3), 825-836.

A3:

- **Frankewycz B, Krutsch W, Weber J, Ernstbeger A, Nerlich M, Pfeifer C;** (2017) Rehabilitation of Achilles tendon ruptures: is early functional rehabilitation daily routine?. Arch Orthop Trauma Surg, 137, 333-340.

- **Maffulli N, Gougoulas N, Maffulli G, Oliva F, Migliorini F;** (2022) Slowed-down rehabilitation following percutaneous repair of Achilles tendon rupture. *American orthopaedic foot and ankle international*, 43(2), 244-252.

References

- **Frankewycz B, Krutsch W, Weber J, Ernstbeger A, Nerlich M, Pfeifer C;** (2017) Rehabilitation of Achilles tendon ruptures: is early functional rehabilitation daily routine?. *Arch Orthop Trauma Surg*, 137, 333-340.
- **Massen F, Shoap S, Turner J, Fan W, Usseglio J, Boecker W, Baumbach S, Polzer H;** (2022) Rehabilitation following operative treatment of acute Achilles tendon ruptures: a systematic review and meta-analysis, *EFFORT Open reviews*, 7, 680-691.
- **Attia A, Mahmoud K, d'Hooghe P, Bariteau J, Labib S, Myerson M;** (2023) Outcomes and complications of open versus minimally invasive repair of acute Achilles tendon ruptures: a systematic review and meta-analysis of randomized controlled trials, *The American Journal of Sports Medicine*, 51(3), 825-836.
- **Maffulli N, Gougoulas N, Maffulli G, Oliva F, Migliorini F;** (2022) Slowed-down rehabilitation following percutaneous repair of Achilles tendon rupture. *American orthopaedic foot and ankle international*, 43(2), 244-252.
- **TA Surgical Repair Ortho Guidelines - Sept 2013**

Version 1

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