

Tendinopathy Treatment-It Seem to be All About Removing the Pain

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Description

Treatment of chronic painful tendinopathy has been known to be difficult, but recent research on basic biology and new treatment methods have shown good clinical results and fast return to pre-injury tendon loading activities. What is then the key to success? Well, up in northern Sweden, at the Sports Medicine Clinic in Umeå, by a coincidence it was found that painful eccentric calf muscle training relieved the pain in patients with chronic painful midportion Achilles tendinopathy [1]. Furthermore, when the pain was gone the tendon thickness decreased and the structure was improved [2]. This started research on the basic biology and innervation patterns, and it was shown that the nerves were located mainly outside, and not inside, the Achilles midportion. Also, the nerves were located close to blood vessels, thereby you could trace the nerves by using Ultra Sound (US) with Colour Doppler (CD). Following treatment methods using first US +CD-guided sclerosing polidocanol injections, and now mini surgical scraping, targeting the blood vessels to get the nerves outside the tendon, has shown good clinical results, decreased tendon thickness and improved structure [3-7]. We learned a lot about where the nerves were located using the sclerosing injection treatment, but the method is operator dependant and time consuming (most often multiple treatments are required). Therefore, that method has now been substituted to the one-stage mini surgical approach. With this surgical approach a return to professional heavy Achilles tendon loading sport within 4-6 weeks is common. However, not all patients were cured with that approach, complaining from medial side pain, and in a following research project the pain was found to be caused by a nearby located plantaris tendon [6]. After local removal of the plantaris tendon the pain disappeared, and again the tendon thickness decreased and the structure improved.

Is it then the same for the more complicated Achilles insertion with multiple different tissues involved? Well, we have done research also on innervations patterns in patients suffering from chronic painful insertional Achilles tendinopathy, and found that the most nerve rich tissue was the superficial bursa, followed by the retro-calcaneal bursa, and very few nerves were found inside the Achilles tendon [8]. Following treatment methods, using US and CD examinations for correct diagnosis and guidance during treatment, was first sclerosing injections, followed by surgery. We found sclerosing injections to be not good enough, and focused on surgical treatment. For insertional Achilles tendinopathy there is a wide range of pathology, some patients have bursa pathology only, while others have bursae, bone (Haglund-like deformity, bone spurs, loose bone ossicles), Achilles tendon and plantaris tendon pathology together [9-11]. Guided by the US and CD findings, in local anaesthesia, *via* open procedures only the pathological tissues (believed to cause pain) were removed. In

patients with intra-tendinous bone formations and loose bone fragments, localised tenderness at pre-operative palpation indicated pain related pathology, and was an indication for removal. Removal was performed *via* US-guided minor longitudinal tenotomy. Postoperative follow-ups showed that the removed superficial bursa tissue was replaced by a 2-3 mm thick scar tissue layer, the retrocalcaneal bursa was replaced by a scar tissue that fills out the space between the deep side of the Achilles tendon and the upper calcaneus, and sites for tenotomies and intra-tendinous bone removal where within 6-12 weeks replaced with scar tissue difficult to differentiate from the adjacent tendon tissue. This type of surgical procedure allow for immediate weight bearing, but time is needed for proper filling of the defects and load tolerance, and a 10-12 week rehabilitation period is often needed before return to pre-injury Achilles tendon loading activity. By using this technique to remove only painful pathology the commonly used tendon detachment procedure (Nunley) and osteotomy procedure (Keck'n Kelly), requiring long periods with immobilisation and following rehabilitation, can often be avoided.

Altogether, finding where the pain comes from and remove the pain seem to be the important factors. If pain is removed the Achilles tendon seem to quickly respond in a favourable way, and for the insertion the scar tissue that replace the removed tissue seem to relatively quickly adapt to the new circumstances.

By using tendon provocative activity before careful clinical examination-including palpation for tenderness, US and CD examination, sometimes guided diagnostic injections using a local anaesthetic, there is a good chance to find the tissues where the pain comes from.

References

1. Alfredson H, Pietilä T, Jonsson P, Lorentzon R. (1998) Heavy-loaded eccentric calf-muscle training for the treatment of chronic Achilles tendinosis. *Am J Sports Med* 26:360-366.
2. Öhberg L, Lorentzon R, Alfredson H (2004) Eccentric training in patients with chronic achilles tendinosis- normalized tendon structure and decreased thickness at follow-up. *Br J Sports Med* 38: 8-11.
3. Alfredson H, Öhberg L (2005) Sclerosing injections to areas of neovascularisation reduce pain in chronic Achilles tendinopathy: A double-blind randomized controlled trial. *Knee Surg, Sports, Traumatol, Arthrosc* 13: 338-344.
4. Lind B, Öhberg L, Alfredson H (2006) Sclerosing polidocanol injections in mid-portion Achilles tendinosis: remaining good clinical results and decreased tendon thickness at 2-year follow-up. *Knee Surg, Sport Traumatol, Arthrosc* 14: 1327-1332.
5. Alfredson H (2011) Ultrasound and doppler-guided mini-surgery to treat midportion achilles tendinosis: results of a large material and a

-
- randomised study comparing two scraping techniques. Br J Sports Med 45:407-410.
6. Spang C, Harandi VM, Alfredson H, Forsgren S (2015) Marked innervation but also signs of nerve degeneration between the achilles and plantaris tendons and presence of innervation within the plantaris tendon in midportion Achilles tendinopathy. J Mus Skel Neur Interact 15:197-206.
 7. Masci L, Neal BS, Wynter Bee W, Spang C, Alfredson H (2021) Achilles scraping and plantaris tendern removal improves pain and tendon structure in patients with mid-portion achilles tendinopathy-a two-year follow-up case series. J Clin Med 10: 2690-2695.
 8. Andersson G, Backman L, Christensen J, Alfredson H (2017) Nerve distributions in insertional achilles tendinopathy - a comparison of bone, bursae and tendon. Histol Histopathol 32: 263-270.
 9. H Alfredson, C Spang (2020) Surgical treatment of insertional achilles tendinopathy: results after removal of the subcutaneous bursa alone-a case series. BMJ Open Sport & Exercise Medicine 6: 2-7.
 10. Alfredson H, Masci L, Spang C (2021) Ultrasound and surgical inspection of plantaris tendon involvement in chronic painful insertional Achilles tendinopathy: a case series. BMJ OpenSport & Exercise Medicine 7: 34-39.
 11. Lindén L, Granath M, Hedlund P, Spang C, Alfredson H (2023) Ultrasound and doppler-guided surgical treatment for insertional Achilles tendinopathy-Results from a case series in a southern Sweden county hospital. Foot Ankle Orthop 8: 55-60.