

Good Results with Painful Eccentric Calf Muscle Training for Patients with Painful Midportion Achilles Tendinosis-Implications for New Treatments

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Commentary

Painful eccentric calf muscle training was demonstrated to be a good treatment model for chronic painful midportion Achilles tendinopathy. The model using the concept with painful tendon loading was completely against the world wide used model for treatment of tendinopathy were pain-free tendon loading was used. The good clinical results using this model raised our interest to perform intensive research on the pain-mechanisms associated with chronic painful Achilles tendinopathy.

In our experience it is essential to perform an ultrasound examination to verify the diagnosis tendinopathy, and to exclude partial ruptures before painful eccentric training is instituted [1]. This is especially important in patients that have had previous injection treatments, because not these injections have caused partial ruptures in the tendon tissue. Eccentric training in patients with partial ruptures most often causes a dramatic worsening and sometimes a total rupture. Another reason to perform ultrasound examination before instituted treatment is that a sub-group of patients have a normal Achilles but instead painful plantaris tendinopathy [2,3].

We found that different activity level groups responded a bit different to painful eccentric calf muscle training. The best clinical results were found among recreational middle aged individuals, where around 85% of the patients were cured. High level athletes seemed to respond less good with around 60% good clinical results. A sub-group of patients have midportion Achilles tendinopathy with plantaris tendon involvement [4,5]. This group often respond poorly to eccentric training, with instead a worsening of the pain. The pain is then located on the medial side of the Achilles.

Hundreds of biopsies from the inside and outside of the Achilles midportion in Tendinopathy patients showed that there were very few nerves inside the Achilles tendon but lots of sensory and sympathetic nerves outside (ventral side) the Achilles [6,7]. These nerves were found in close relation to blood vessels, vessels that could be identified using dynamic ultrasound+Doppler examination. This finding has resulted in new ultrasound and Doppler-guided treatment methods, sclerosing polidocanol injection treatment [8] and mini surgical scraping [9]. Especially the mini surgical scraping method, sometimes combined with plantaris tendon removal [10-12], is commonly used. This method, with treatment instituted in the region with nerves outside the tendon, is combined with a rapid postoperative rehabilitation allowing for a return to full tendon loading and high level sport activity already within 4-6 weeks.

In conclusion, with the treatment methods painful eccentric training, ultrasound and Doppler-guided sclerosing polidocanol injections and ultrasound and Doppler-guided mini surgical scraping,

the prognosis to cure chronic painful midportion Achilles tendinopathy is very good. Patients having plantaris tendon involvement, where the plantaris tendon cause a mechanical interference with the Achilles, needs surgical removal of the plantaris. This is done together with the Achilles scraping procedure and does not lengthen the rehabilitation process. Patients having partial ruptures (often seen in patients having had injection treatments) needs to be treated with intra-tendinous revision procedures, combined with long rehabilitation periods.

References

1. Alfredson H, Masci L, Öhberg L (2011) Partial midportion Achilles tendon ruptures: new sonographic findings helpful for diagnosis. *Br J Sports Med* 45: 429-432.
2. Masci L, Spang C, van Shie H, Alfredson H (2016) How to diagnose plantaris tendon involvement in midportion Achilles tendinopathy-clinical and imaging findings. *BMC Musculoskeletal Disorders* 17: 97.
3. H Alfredson, L Masci, C Spang (2018) Surgical plantaris removal for patients with plantaris tendon related pain only and a normal Achilles tendon: A case series. *BMJ Open Sport Exercise Med* 4.
4. Alfredson H (2011) Midportion Achilles tendinosis and the plantaris tendon. *Br J Sports Med* 45: 1023-1025.
5. Alfredson H (2017) Education review: Persistent pain in the Achilles mid-portion? Consider the plantaris tendon as a possible culprit! *Br J Sports Med* 51: 833-834.
6. Bjur D, Alfredson H, Forsgren S (2005) The innervation pattern of the human Achilles tendon-Studies on the normal and tendinosis tendon using markers for general, sensory and sympathetic innervations. *Cell Tiss Res* 320: 201-206.
7. Andersson G, Danielson P, Alfredson H, Forsgren S (2007) Nerve-related characteristics of ventral paratendinous tissue in chronic Achilles tendinosis. *Knee Surg Sport Traumatol Arthrosc* 15: 1272-1279.
8. 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.
9. Alfredson H, Öhberg L, Zeisig E, Lorentzon R (2007) Treatment of midportion Achilles tendinosis: similar clinical results with US and CD-guided surgery outside the tendon and sclerosing polidocanol injections. *Knee Surg Sport Traumatol Arthrosc* 15: 1504-1509.
10. H Alfredson, G Andersson, L Backman, J Bagge, P Danielson, et al. (2013) Us and Doppler-guided surgical treatment based on immunohistochemical findings in midportion Achilles tendinopathy shows good clinical results and fast return to activity. *BJSM* 47.
11. 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.
12. Spang C, Alfredson H, Ferguson M, Roos B, Bagge J, et al. (2013) The plantaris tendon in association with midportion Achilles tendinosis-

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Tendinosis-like morphological features and presence of a non-neuronal cholinergic system. Histol Histopathol 28: 623-632.