



Achilles Tendon Rupture Single Case Trial - 2022

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Aims and Objectives

Ellison et al 2017 showed the VACOped boot achieved a more significant degree of ankle equinus than a fix angle walking boot with wedges.

I set out to see if this translated into a difference in tendon rupture gap when measured with ultrasound.

Method

A modified (shell given additional window to allow for ultrasound) VACOped boot and fixed angle walking boot were used on one test subject who suffered a complete Achilles tendon rupture 3 days earlier

I measured to tendon gap at rest and in full passive equinus.

The tendon gap was then measured whilst wearing the fixed angle walking boot (FAWW) with wedges when non weight bearing (NWB) and fully weight bearing (FWB)

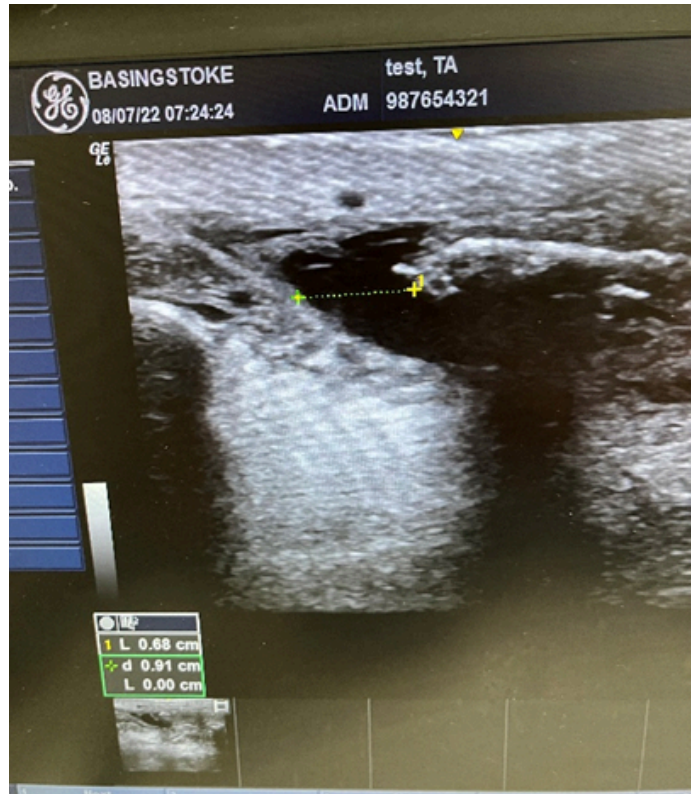
This was then repeated whilst wearing the VACOped boot again NWB and FWB.

Results

Patient without orthosis

0.91cm gap.

Closed to 0.03cm in full equinus



Patient wearing FAWW

0.35cm NWB

0.41cm FWB



Results continued...

Patient wearing VACOped
0.10cm NWB.
0.12cm FWB



Conclusion

The tendon gap in full equinus was 0.03cm.

The VACOped Boot tendon gap increased by 0.07cm (233%) NWB and 0.09cm (300%) FWB.

The fixed angle walking boot with wedges tendon gap increased by 0.32cm (1067%) NWB and 0.38cm (1267%)

This would suggest in this case study the VACOped boot maintains significantly reduced gap distance when compared to a fixed angle walking boot with wedges.

Further investigation with a larger sample size and more formal statistical analysis are now needed.

