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Paper #214

Individual Treatment Selection for Acute Achilles Tendon Rupture Based on yhe Copenhagen Achilles Length Measurements (CALM)

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Summary:
The present study suggests the Copenhagen Achilles Length Measurement (CALM) to guide choice of treatment. A cut off of 7% elongation at baseline would have caught 77% of patients who ended up with an elongation above 10% at 1 year.

Abstract:

Background

Acute Achilles tendon rupture (ATR) can be treated operatively or non-operatively. An evidence based selection tool is needed to guide choice of treatment.

Purpose/aim of the study
To investigate if treatment selection in patients with ATR can be guided by Amlang's ultrasound classification (AmC) or the Copenhagen Achilles Length Measurement (CALM).

Materials And Methods

The study was performed as a prospective cohort study on patients included in a randomized controlled trial (identifier: NCT02015364). Patient were 18 to 70 years, treated non-operatively and allocated to either early controlled motion or immobilization. AmC and CALM were performed at baseline and correlated to outcome at 1 year. The primary outcome was the Achilles tendon Total Rupture Score (ATRS). Secondary outcomes were: heel-rise-work test, re-rupture rate and CALM at 1 year. ROC analysis was performed to determine a cut off for acceptable elongation of CALM at baseline given that elongation at 1 year was not to exceed 10%. ClinicalTrial.gov Identifier: NCT02062567.

Findings

Results

From February 2014 to December 2016 CALM was performed at baseline in 130 patients and AmC in 109. AmC showed no statistically significant correlation to any outcome parameter. CALM at baseline correlated to CALM at 1 year r=0.214 (p<0.01). No other outcomes correlated to CALM.

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The ROC model had AUC = 0.67. An elongation of 7% at baseline had a sensitivity of 0.77 and specificity of 0.50.

Conclusions

Elongation of the Achilles tendon at baseline measured with CALM was weakly correlated to elongation at 1 year follow up suggesting that CALM at baseline can predict elongation at one year. A cut off of 7% elongation at baseline would have caught 77% of patients who ended up with an elongation above 10% at 1 year.