

## PERONEUS BREVIS VERSUS BOSWORTH'S REPAIR OF ACHILLES TENDON: A BIOMECHANICAL COMPARISON

<sup>1</sup>Sebastian GG; <sup>1</sup>Haseeb A;

<sup>1</sup>Department of Orthopaedic Surgery, University of Malaya, Lembah Pantai, Kuala Lumpur, Malaysia.

### INTRODUCTION:

Neglected Achilles tendon ruptures is a significant issue that leads to functional impairment in patients and a significant challenge to surgeon's in choosing the suitable method of repair or reconstruction. Many methods have been described, however biomechanical studies on strength of repair is still lacking, especially for Bosworth's method which have not been biomechanically tested before.

### MATERIALS & METHODS:

4 Pairs of Cadaveric Achilles tendons were harvested and prepared for biomechanical testing to compare the failure load (N) and stiffness between the Peroneus brevis and Bosworth's reconstruction method

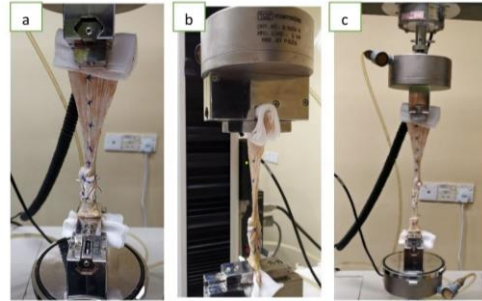
### RESULTS:

The mean load to failure and of the Peroneus brevis repair (Failure load 163.1 $\pm$ 92.0 N, Stiffness 7.2  $\pm$  1.6 N) method was higher than the Bosworth's method (Failure load : 119.7  $\pm$  61.2N, Stiffness 6.2  $\pm$  1.6N). There are however no difference between both the methods due to the small sample size during covid-19 pandemic.

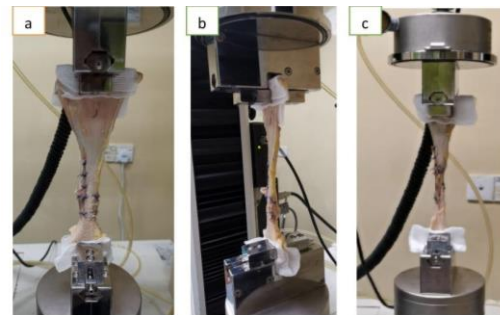
### CONCLUSION:

Peroneus brevis reconstruction method is biomechanically stronger than Bosworth's method in Achilles tendon reconstruction. However both can still be an option for reconstruction when individualized to patients. However a larger sample size of the study is needed in the future to derive a statistical significance.

**Figure 1: Peroneus brevis repair**



**Figure 2: Legend. Bosworth's repair**



### REFERENCES:

1. Lee YS et al. Reconstruction of neglected Achilles tendonhe modified Bosworth method. 2005. Orthopaedics. 28(7):647-650
2. Turco et al. Achilles tendon ruptures - peroneus brevis transfer. 1987. Foot and ankle. 7(4): 253-259.