PERCUTANEOUS TENDON ACHILLES LENGTHENING: A CADAVERIC STUDY

Muhammad Wafiuddin Ahmad[1]*, Aminudin Che Ahmad[1] and Shukrimi Awang[1]

[1]Department Of Orthopaedics and Rehabilitation, Kulliyyah of Medicine ,International Islamic University Malaysia

Corresponding Author's email: drwafi1986@gmail.com

ABSTRACT

Background: Ankle equines are the most prevalent foot deformity in children and in the adult diabetic population. Untreated equines will indirectly damage the adjacent structures and lead to inefficient gait.

Purpose: This study aims to determine the efficacy and safety of the percutaneous Tendon Achilles (TA) technique.

Methodology: Six fresh frozen cadaver leg specimens were used in this study and divided into three groups namely 1.5cm,2cm, and 2.5 hemisection groups. Forces were measured during the lengthening process. Soft tissue was dissected and using a measurement caliper the gap at the hemisection site, amount of overlapping tendon, and depth of blade in relation to adjacent neurovascular bundle were measured

Results: Tendon excursion distance: 2.5 cm hemisection distance yielded the highest excursion distance. Tendon Overlap: 2.5 cm or higher hemisection distance carry less risk of near or total tendon rupture when compared to the lower hemisection distance group Forces Vs ROM: The forces needed to increase 1degree range of motion (ROM) in the 2.5cm hemisection group is comparatively higher compared to 2cm and 1.5 cm group. The margin of Safety: No significant difference in each group, to prevent complications it is advisable not to extend the blade beyond the margin of safety at each hemisection cut by 0.74cm, 0.97cm, and 1.55cm at the proximal middle and distal hemisection respectively.

Conclusions: 2.5cm and higher hemisection distance provide more tendon lengthening, lesser risk of tendon rupture, and have a more protective effect in the earlier phases of rehabilitation.

Keywords: Percutaneous Tendon Achilles Lengthening