Incision Size of the Interosseous Membrane Window Size for Tibialis Posterior Tendon Transfer and MRI Analysis.

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Disclosure

No conflicts no disclose

- Incision Size of the Interosseous Membrane for Tibialis Posterior Tendon Transfer and MRI Analysis.
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- My disclosure is in the Final AOFAS Mobile App.
- I have no potential conflicts with this presentation.
• Posterior tibial tendon transfer (PTTT):
  • For correctable inversion and plantar-flexion
    • Charcot-Marie-Tooth, Mononeuropathy, etc.
  • Circumtibial or transmembrane transfer
• Transinterosseous membrane transfers:
  • No current recommendation on interosseous membrane incision size
  • Potential complications if size too small: tendon entrapment, tendon rupture
  • First study to analyze this technical detail
• Determine interosseous membrane incision size in PTTT through a geometric analysis and a MRI analysis
Materials and Methods

• 11 leg MRI analyzed
• Inclusion criteria:
  • Skeletally mature patients
  • No previous trauma or tumor
  • No previous tibialis posterior symptoms
• Measurements on MRI
  • Tendon diameter at 10, 12 and 15 cm proximal to medial malleolus
  • Posterior to anterior compartment distances
  • Geometric analysis to obtain tendon transfer angle
    • Obtaining membrane incision size
Geometric analysis
Results

- Maximum tendon diameter was at 15 cm proximal to the medial malleolus: 19.5 mm (2 cm aprox)

- Posterior to anterior compartment distance: 9-13 mm

- Total tendon length used for transfer: 7 cm (estimated)
  - Transferred tendon calculated angle:
    - 25 – 30 degrees of obliquity

- Membrane size required: 2.5 times tendon diameter
• Inverse relationship between tendon transfer angle and membrane incision size
Currently there is no recommendation on the interosseous membrane incision size in PTTT.

This is the first study to address this topic.
Minimum interosseous membrane window size should be 2.5 times the tendon diameter: Aprox. 5 cm

Allows a safe tendon passage, avoids entrapment and rupture