Insertional Achilles Tendinopathy: Histology and biomechanics

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Meir Medical Center Kfar-Saba, Israel
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My disclosure is in the Final AOFAS Program Book. I have no potential conflicts with this presentation.
Study Purpose

To describe histopathologic findings from specimens of patients with IAT, and examine statistical connections between those findings, the presurgical clinical complaints, and the etiology of IAT.
Methods

- Analytical retrospective trial.
- Mean age was 48.9 (25-68) years. More than 68% were male.
- Pathological samples of the surgically excised area were taken.
- 15 patients and 16 feet.
- Osteoarthritic changes in the specimens graded based on the Osteoarthritis Research Society International scale of 0-5.
Results

• Bone destruction and remodeling with osteoclasts and osteoblasts in the Achilles insertion to the calcaneus.
• Most of the changes were described in the cartilage:
  severe osteoarthritis with areas of shrinkage, edema, pigmentation and ruptures, regenerative changes with extrinsic and intrinsic healing.
• The tendon itself was relatively conserved, without severe inflammatory changes.
• The average histopathology grade was 4.2±1.
• Statistical connection between the histopathologic grade and the functional level of the patients (p=0.004).
• No correlation between the histopathologic changes with severity of the pain, patient age, or etiology of the tendon injury.
Posterior surface of the calcaneus

Arthrotic changes
Cartilage changes

- Fibrilation and fissures in the cartilage
- Proliferation of chondrocytes - repair?

Proliferation of chondrocytes - repair?

- Fibrilation and fissures in the cartilage
Bone changes

Eburnated bone, destruction of bone, granulation tissue

New bone formation with osteoblasts and destruction from osteoclasts
Conclusion:

- The main changes in the insertion are in the fibrocartilage and bone
- The changes in the cartilage are advanced
- These changes explain failure in conservative treatment
- Posterior calcanectomy gives good result-removal of the main pathology