Management of Achilles Tendon Lesions

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Achilles Tendon Dysfunction

- Acute Achilles rupture
- Tendonitis
- Tendonosis
  - Insertional
  - Noninsertional

Achilles Tendon

Anatomy
- Largest and strongest tendon
- Conjoined tendon of the gastroc and soleus
- Fibers twist 90°
- Broad insertion onto the calcaneal tuberosity
- Superficial fibers continuous with plantar fascia
**Achilles Tendon Dysfunction**

Rupture


tendonitis
tendinosis

retrocalcaneal bursitis

**Achilles Tendinopathy**

Anatomy

- Haglund's deformity
- Retrocalcaneal bursa and pre-Achilles bursa

**Achilles Tendinopathy**

Anatomy

- Blood supply: Three regions:
  - Musculotendinous junction
  - Anterior meso-tenon
  - Tendon-bone junction
- Region of relative hypovascularity 2 to 6 cm proximal to insertion
**Achilles Tendon Rupture**

- Acute rupture
- Middle aged male
- Pain in the back of the calf (Somebody kicked me!)
- Palpable defect
- Positive Thompson's test
- Usually primary repair

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**Achilles Tendonitis**

- Achilles tendonitis (Paratenosynovitis)
  - Inflammation of the tendon sheath
  - Overuse injury in younger, active individuals
  - Pain that worsens with activity
  - Crepitus in acute phase
  - Adhesions, stenosing in chronic phase
  - Swelling over the Achilles

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**Achilles Tendonosis**

- Achilles tendonosis
  - Intrasubstance degeneration or microtearing
  - Older patient with co-morbidities
  - Pain when initiating activity
  - Morning pain/Stiffness
  - Pain may improve with activity
  - Enlarged tendon
Achilles Tendinopathy

- Terminology is confusing
- Diagnosis:
  - Inflammatory vs. degenerative
  - Structure involved: tendon or paratenon
- Conditions may coexist
- Difficult to distinguish clinically
- Tendonosis: noninsertional and insertional*

*Achilles Tendinopathy

Etiology: Intrinsic vs. Extrinsic

Intrinsic Factors
- Age
- Male gender
- Systemic disease (e.g. Diabetes)
- Excessive Pes Cavus/Planus
- Weakness

Extrinsic Factors
- Overuse
- Training errors (intensity, uphill/downhill, uneven surfaces)
- Also occurs in sedentary individuals
- Local steroid injection
- Fluoroquinolones
Achilles Tendinopathy

Differential Diagnosis
- Rheumatoid arthritis
- Gout
- Seronegative arthropathies (ESR, HLA-B27, ANA, CRP)
- Lyme disease
- Diffuse idiopathic skeletal hyperostosis (DISH)

Noninsertional Achilles Tendinopathy

Diagnosis
- Activity-induced pain 2 to 6 cm proximal to insertion
- Morning pain or stiffness
- In runners:
  - Pain at start and after run
  - Pain during run
- Tender nodules or fusiform enlargement
- Dorsiflexion may increase
- "Painful arc" sign

Insertional Achilles Tendinopathy

Diagnosis
- Tenderness at Achilles insertion
- Retrocalcaneal bursitis: Medial and lateral fullness of retrocalcaneal space
- Morning pain/stiffness
- Pain aggravated by shoe wear, stair climbing, and activity
- Limited dorsiflexion
Achilles Tendonopathy

Imaging
- Standing radiographs
  - Posterior superior process (Haglund’s)
  - Calcifications
- Ultrasound
- MRI

Achilles Tendonopathy

Non-operative Treatment
- More successful in noninsertional type
- MRI may be predictive in insertional type
- Probably more effective in early stages
- Eccentric strengthening protocol†
- Heal lifts, shoe modification
- Activity modification

Achilles Tendonopathy

Non-operative Treatment
- NSAIDS‡
- Topical glyceryl trinitrate†
- Brisement
- Steroid injections not recommended


Scott, et al. Foot Ankle Int. v 29(7), 2008
**Achilles Tendinopathy**

Nonoperative Treatment

- Shock wave therapy
- Plasma-Rich Plasma*


**Noninsertional Achilles Tendinopathy**

Surgical treatment

- Underlying condition must be considered
- Peritendinitis: excision of paratenon and adhesions
- Tendinosis:
  - Percutaneous longitudinal tenotomy**
  - Débridement
  - Reconstruction (V-Y lengthening, turndown)
  - Augmentation (tendon transfer, graft)

Insertional Achilles Tendinopathy

Surgical treatment
- Many approaches described
- Goals:
  - Remove degenerative tendon/Calcifications
  - Excise inflamed bursa
  - Resect calcaneal prominence
- Achilles reattachment?

Thank You!