

# Tibialis Posterior Insufficiency



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- Introduction
- Functional Anatomy
- Etiology
- Clinical Presentation
- Treatment

# Tibialis Posterior Insufficiency

## Introduction

- Flatfoot – Acquired, congenital
- Acquired
  - Tarsal Coalition
  - Neurologic
  - Tib. Post. Insufficiency
    - Frequently not appreciated

# Tibialis Posterior Insufficiency Anatomy

- Deep posterior compartment
- Tendon in fibro-osseous groove
- Multiple insertions –mainly navicular and med. Cuneiform
- Posterior and medial to subtalar and ankle joint – flexes ankle and inverts hindfoot
- Locks subtalar complex in push off

# Tibialis Posterior Insufficiency ?Etiology?

- Trauma
- Systemic inflammatory process
- Impingement in tunnel
- Hypovascularity

# Tibial Posterior Insufficiency



# Tibialis Posterior Insufficiency ?Etiology?

- Tib post has 1.5 cm excursion
- Static supporters become overloaded and painful
  - Spring ligament, TN capsule, Plantar Fascia
- Painful Flatfoot develops
  - Hindfoot equinus and valgus
  - Midfoot collapse and abduction

# Tibialis Posterior Insufficiency Presentation

- 40-60 years 15% bilateral
- 75% women
- Obese, hypertension
- Vague, insidious onset, activity related medial pain
- 50% traumatic event
- Calf pain
- deformity



# Tibialis Posterior Insufficiency Presentation

- Later
  - Lateral pain
  - Stiffness

# Tibialis Posterior Insufficiency Presentation

- Tenosynovitis
- Deformity
  - Rigid or passively correctable
- Equinus contracture
- “too many toes sign”
- Single limb heel raise

# Too Many Toes Sign



# Single limb heel raise



# Radiographic Analysis



# Radiographic Analysis



# Radiographic Analysis



# Radiographic Analysis

- U/S
- MRI



# Classification

- Johnson and Strom
- Type 1 – Tenosynovitis, no deformity
- Type 2 – flexible deformity
- Type 3 – Rigid Deformity
- Type 4 – Ankle involvement

# Treatment Type1

- Non-operative
  - NSAIDS, Injections
- Operative
  - Debridement
  - Medial Displacement Calcaneal Osteotomy

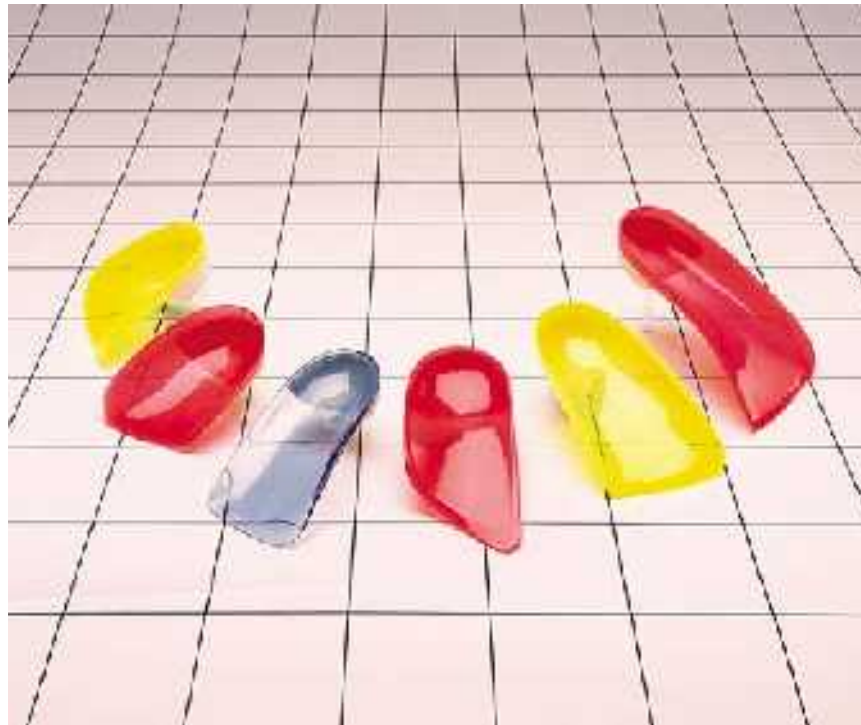
# Medial Displacement Calcaneal Osteotomy



# Treatment Type 2

## Non-operative

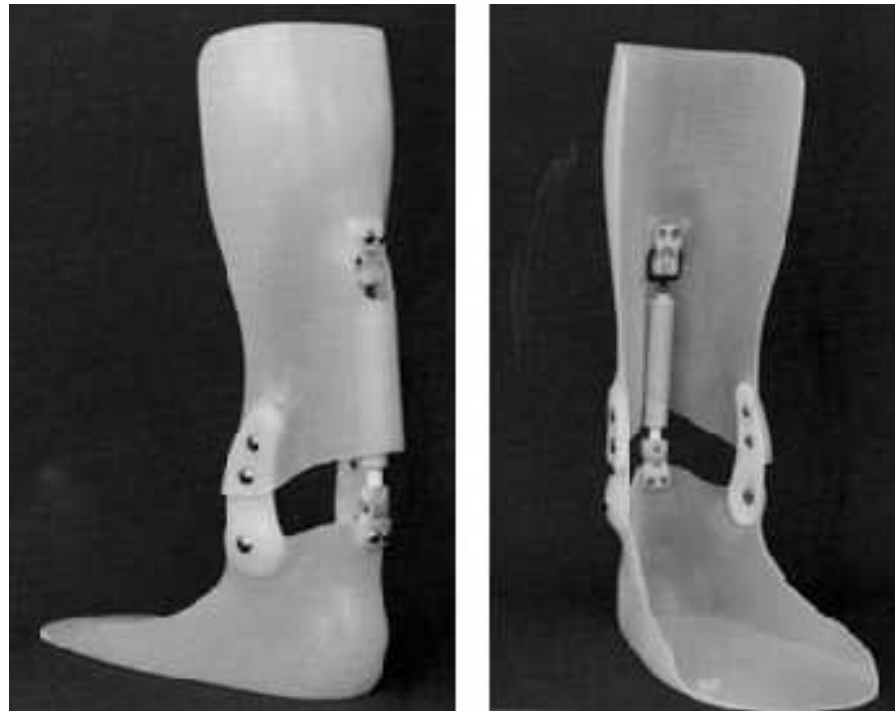
- UCBL heel cup



# Treatment Type 2

## Non-operative

- AFO



# Treatment Type 2

## Non-operative

- ? How aggressive surgically should you be ?
- ? What percentage will progress to a Type 3?

# Treatment Type 2

- Triple Arthrodesis
  - Older, systemic, gold standard
  - Inherent problems in young - Ankle OA



# Treatment Type 2

- Motion Sparing Procedure
  - FDL tendon Transfer
  - Calcaneal Osteotomy
  - Spring Lig and TN capsule reefing
  - Lateral procedure?
  - Medial column fusion
  - ?Combination?
  - Tendo-Achilles lengthening
  - Can easily be converted to a triple
  - Long time to improve



# Treatment Type 3

- Triple
- Tendo-Achilles lengthening

# Treatment Type 4

- Pantalar Arthrodesis

# Summary

- Probably more common than we think
- Keep high index of suspicion
- ? Aggressive surgically
  - Especially in the younger woman
- More study on natural history and what to do with a 1 and 2!
- Pomeroy JBJS 1999 Vol.81-A 1173-1182