

Pes Planus

Kakwani

Tibialis Posterior:

1. Dynamic arch stabilizer
2. Powerful invertor of the foot
3. “Lock-in” the talonavicular joint

Tibialis Posterior Dysfunction

- Local Ischaemia
- Mechanical Factors – acute kinking at MM level
- Predisposition from physiological flat foot
- Overactivity of Peroneus Brevis
- Trauma

Pre-disposing factors

- Female
- >40 yrs
- Obese
- Sero-negative arthropathies
- Pes Planus
- IDDM
- Steroids - especially local injections

History

- ▶ Any **medial hindfoot pain**
- ▶ **Has your foot recently changed shape**
- ▶ Reduced walking ability
- ▶ Fatigue on standing or walking

Pes Planus

- Look
 - Stand – inc tip toe
 - Walk (Failure of restoration of arch)
 - Sit – inc shoes, scars, insoles, walking aids etc
- Feel
 - Bony landmarks, joints
 - Tendons – (Tibialis posterior)
 - Sensation
 - Pulses
- Move
 - Passive ROM – Ankle / subtalar / mid-tarsal
 - Proximal to Distal
- Special tests:
 - Beighton's criteria (Flexible flatfoot)
 - Marfans / Ehler Danlos
 - Silver Skiold

Stage	Symptoms	Pathology	Arch	<i>Valgus Hindfoot</i>	<i>Single-Limb Heel-Rise</i>	<i>“Too Many Toes”</i>
I	Medial ankle pain, swelling	Synovitis	Normal	Negative	Normal	Negative
IIA	Medial ankle pain, swelling, ± <i>sinus tarsi pain</i>	Tenosynovitis and degeneration	<i>Loss</i>	<i>Positive</i>	<i>Abnormal</i>	Negative
III	Sinus tarsi pain, <i>fibular abutment pain</i>	Degenerative arthritis of the hindfoot	Loss	Positive	Abnormal	<i>Positive</i>
IV	Sinus tarsi pain, fibular abutment pain, <i>ankle pain</i>	Degenerative arthritis of the hindfoot <i>Deltoid insufficiency</i> <i>Talar tilt</i>	Loss	Positive	Abnormal	Positive

R_x Stage I / II

Flexible Flat Foot

- ▶ Medial arch support
- ▶ NSAIDS / Topical or Oral
 - ** NO STEROID INJECTION **
- ▶ Cast or Air Cast Boot for 6/52
- ▶ Speed or Laced Ankle Brace

Non –op R_x Stage I / II Orthoses

- ▶ Medial Arch Support + Heel Cup
- ▶ Holds Hindfoot Varus
 - Alleviate Tendon Stress
 - Improve Gait – Gastroc function
 - Prevent Progression
- ▶ Cast / Boot
 - As above but...more so
- ▶ 65% Good / Excellent Results
 - W Chao et al F&A Int 1996 Non – op management of tib post

Stage 1

- ▶ Surgical Treatment
 - Tenosynovectomy,
 - Possible tendon transfer, and/or
 - Medial slide osteotomy

Stage 2

- ▶ Surgical Treatment
 - Tendon transfer,
 - Medial slide osteotomy,
 - Lateral column lengthening

Stage 3

- ▶ Surgical Treatment
 - Hindfoot fusion, most commonly triple arthrodesis.
 - Correction requires fusion of all three joints.

Stage 4

- ▶ Surgical Treatment
 - Complete correction of foot deformity, possible deltoid reconstruction.
 - For severe arthritis, perform ankle fusion or total ankle arthroplasty, including correction of foot deformity

Goals

- ▶ Achieving proper alignment
- ▶ Maintaining as much flexibility as possible.

References

- ▶ Myerson MS (1997) Adult acquired flatfoot deformity: treatment of dysfunction of the posterior tibial tendon. *Instr Course Lect* 46:393–405
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- ▶ Sitler DF, Bell SJ (2003) Soft tissue procedures. *Foot Ankle Clin* 8:503–520
- ▶ Teasdall RD, Johnson KA (1994) Surgical treatment of stage I posterior tibial tendon dysfunction. *Foot Ankle* 15:646–648

Questions ???