

Flexible Flat Feet Clinic Guidelines - Orthopaedic Practice

Definition

- a. Foot with low or absent longitudinal arch in weight-bearing conditions
- b. Anatomic characteristics: Excessive eversion of the subtalar complex during weightbearing with plantarflexion of the talus, plantarflexion of the calcaneus in relation to the tibia, a dorsiflexed and abducted navicular, and a supinated forefoot

Pathogenesis/Natural History

- a. Infants are born with flexible flatfeet, and the normal arch develops in the first decade of life
- b. Flat feet are normal and usual in infants, common in children, and are often present in adults with a decreasing prevalence with increasing age.

Clinical Presentation

- a. Can present at any age
- b. Equally prevalent in males vs. females

Evaluation

- a. Neuromuscular exam
 - Strength & evaluate for contractures (peroneals, Achilles, posterior tibial tendon)
 - Evaluate for asymmetry in foot size
 - Evaluate for clawing of toes and/or muscle wasting
 - DTRs, Clonus
- b. Foot evaluation
 - Foot & ankle motion including:
 - Subtalar motion
 - Dorsiflexion, Plantarflexion, Inversion, Eversion
 - Assess anatomic landmarks for pain
 - Evaluate arch (sitting and standing)
 - Evaluate heel position with feet plantigrade and on toes
 - Gait evaluation

Differential Diagnosis

- a. Vertical/oblique talus
- b. Tarsal coalition
- c. Accessory navicular
- d. Posterior tibial tendonitis
- e. Overcorrected clubfoot
- f. Tight Achilles
- g. Calcaneovalgus
- h. Peroneal spasms

Diagnostic Tests

- a. Radiographs
 - i. If rigid, painful, or asymmetrical
 - ii. AP foot, lateral plantar flexion/dorsi flexion

Treatment Options

- a. Flexible/Non-painful
 - * Developmental variant
 - * Provide parental education: most flexible flat feet resolve spontaneously and do not cause disability in adults, observation and time are the only treatments necessary (1,2,3)
- b. Flexible/painful
 - * PT for 6-8 weeks
 - * Orthotics
 - * Referral to MD if fail PT and +/- previous MRI

Follow up Recommendations

- a. If flexible/non-painful
 - 1. F/u prn with NP/PA
- b. If flexible/painful
 - 1. 6-8 weeks with NP/PA
 - 2. Then PRN
- c. Follow-up with surgeon
 - 1. Over age
 - 2. Rigid/painful/severe
 - 3. Flexible/painful who have failed PT and orthotics
 - 4. Congenital anomaly

Evidenced Based Literature Review

Cappello, T. & Song, K.M. (1998). Determining treatment of flatfeet in children. *Current Opinion in Pediatrics*. 10, 77-81.

Garcia-Rodriguez, A., Martin-Jimenez, F., Carnero-Varo, M., Gomez-Gracia, E., Gomez-Araena, J., & Fernandez-Crehuet, J. (1999). Flexible flat feet in children: A real problem? *Pediatrics*. 103(6), 84-86.

Herring, J. A. (2008). Disorders of the foot. In M.O. Tachdjian & J.A. Herring (Eds), *Tachdjian's Pediatric Orthopedics* (4th Ed) (pp.1035-1186). Philadelphia: Saunders Elsevier.

Staheli, L.T., Chew, D.E., & Corbett, M. (1987). The longitudinal arch. A survey of eight hundred and eighty-two feet in normal children and adults. *Journal of Bone & Joint Surgery*. 69, 426-428.