Children's Hospital of Wisconsin
Medical College of Wisconsin
Children's Specialty Group

Metatarsus Adductus Clinic Guidelines - Orthopaedic Practice

Definition

a. An adduction or medial deviation of the forefoot and is recognized as a contracture at the tarsometatarsal joints (1)
b. Adduction and a varying degree of supination of the forefoot, often associated with mild valgus angulation or the heel and medial tibial torsion (2)
c. Heel/hindfoot is not in equinus (4)
d. Heel bisector Classification

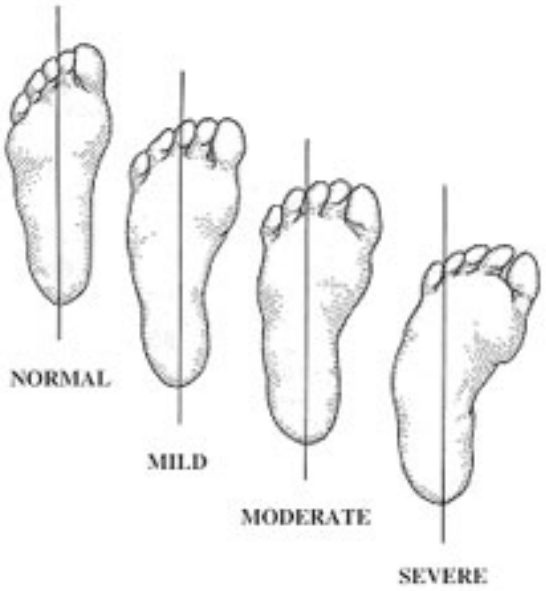

FIGURE 1: In normal foot, heel bisector intersects second and third toes. With increasing adduction, bisector is displaced toward the fifth toe. Note convex lateral border of foot in severe metatarsus adductus.

e. Flexibility classified according to extent of passive abduction of the forefoot against the stabilized hindfoot with reference to the heel bisector.
    i. Flexible: Abduction beyond the midline heel bisector
    ii. Partly flexible: Abduction only to the midline
    iii. Inflexible: No abduction possible

Pathogenesis/Natural History

a. Spontaneous resolution to normal in 83%(1) to 95% (4) of cases by age one
b. Pathogeneis is unknown but is believed to result from intrauterine crowding or positioning (4)

Clinical Presentation

a. Deformity usually present at birth but may not present until the first year of life (3)
b. Incidence estimated to be as high as 1 in 100 births (4)

Evaluation

a. Neuromuscular exam
b. Assessment of the foot, assess for degree of flexibility (4)
c. Evaluate for hip dysplasia or other congenital orthopedic conditions(4)
d. Evalaute heel bisector line (1)

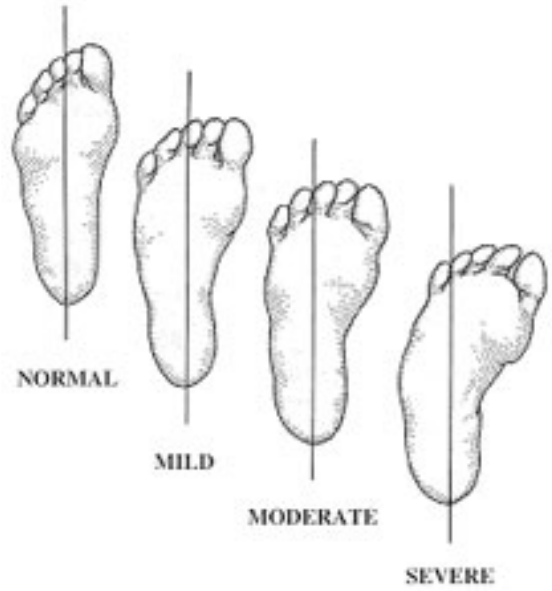

FIGURE 1: In normal foot, heel bisector intersects second and third toes. With increasing adduction, bisector is displaced toward the fifth toe. Note convex lateral border of foot in severe metatarsus adductus.

e. Identify: flexible, partially flexible, inflexible

Differential Diagnosis

a. Dynamic hallux varus
b. Internal rotation of the foot
c. Metatarsus primus varus
d. Skewfoot
e. Tibial torsion
f. Clubfoot

Diagnostic Tests

a. Radiographs- not needed unless child has failed casting
b. Xerox of feet

Treatment Options

Mild/Moderate Flexible & approximately 7 months of age

No intervention passively correctible deformity will spontaneously correct on its own by age 1 (3,4)

- Educate families that the deformity should not interfere with normal development and that the child will have no restrictions or limitations in any sports or activities (4).
- Follow-up PA/NP at 7 months of age
- Offer casting if child is chunky or very young using long leg plaster
    - If chunky/very young long leg plaster
    - Other children short leg plaster

Moderate/Severe Inflexible Serial Casting:

- Inflexible: Initiate treatment immediately
- If present at 8 months may initiate serial casting as the percentage of favorable outcomes decreases if treatment was initiated after the patient was more than 8 months of age (1)
- If flexible, partially flexible at 8 months may cast
- Follow-up post casting to ensure no recurrence

Follow up Recommendations

- If flexible & less than 7 months
    - f/u as needed at 7 months
- Bi-weekly for 6-8 weeks if treating with plaster casts (2)
- Follow-up with surgeon:
    - Over age 2years old
    - Rigid/Inflexible after casting
    - Operative treatment is not needed or desirable in patients who have mild or moderate deformities past age 2yo(3)

Evidenced Based Literature Review

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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.

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