IN BRIEF:

Topics in Pediatric Orthopedics

Gillette Children's Specialty Healthcare

Understanding Pediatric Flatfoot

By Libby Weber, M.D., pediatric orthopedic surgeon

Overview

Flatfoot (pes planus) refers to loss of the medial longitudinal arch, and it commonly occurs in conjunction with a valgus heel or pronation. For most children under the age of 3, flatfoot is a normal variant. However, it can be a source of anxiety for primary care providers and parents alike.

There are two distinct types: flexible flatfoot, which may or may not be associated with Achilles tendon tightness, and rigid flatfoot.

Flexible Flatfoot

Description and Diagnosis

Typically, flexible flatfoot is painless and occurs bilaterally. Often the family history includes a similar loss of medial longitudinal arch or ligamentous laxity. Families usually report that children are able to play normally.

During the physical exam, the child displays a normal range of motion in the subtalar and ankle joints with no differences from side to side. The child has a typical arch while sitting or if asked to do a heel rise.

As part of the physical exam, observe the child walking. Often, the attachment of the Achilles tendon is biased toward the lateral side of the heel. If the Achilles tendon is tight, children often learn to accommodate for that by walking on their toes or pronating their heels. Significant tightness in the Achilles tendon is unusual for young children, so investigating underlying pathology is recommended. Children should also undergo a thorough work-up if the flat footedness is one-sided or represents a change from baseline walking patterns.

Treatment for Flexible Flatfoot

When no other symptoms are present, flexible flatfoot does not require treatment. With growth, children tend to lose their ligamentous laxity, strengthen their intrinsic muscles and often develop an arch. Supporting the arch with a shoe insert is not recommended, because arch supports allow the intrinsic muscles to atrophy, making it less likely that an arch will develop. If the Achilles tendon is tight, a stretching program or physical therapy should be initiated.

Rigid Flatfoot

Description and Diagnosis

With rigid flatfoot, the least common type, the foot remains flat when the child is sitting on the exam table or when the child is asked to stand on his or her toes. These symptoms signal that there is a mechanical problem. To identify the underlying issue, specialized imaging studies will be required. A child who has rigid flatfoot is more likely to have pain. Causes for rigid flatfoot include congenital vertical talus, tarsal coalition or trauma.

Treatment for Rigid Flatfoot

The initial treatment for rigid flatfoot depends largely on the underlying pathology, but symptoms can often be alleviated with a functional orthosis aimed at minimizing subtalar motion. If the symptoms cannot be controlled with an orthosis, children with rigid flatfeet often need surgery.

Libby Weber, M.D., is a board-certified orthopedic surgeon who has a special interest in orthopedic trauma and limb reconstruction. She received her medical degree from Indiana University School of Medicine in Indianapolis, and completed her residency at Dartmouth Medical School. Subsequently, she completed a limb reconstruction and pediatric fellowship at the Royal Children's Hospital in Melbourne, Australia, as well as a pediatric orthopedic fellowship at Brown Medical School/Hasbro Children's Hospital in Providence, Rhode Island. She is a member of the American Academy of Orthopaedic Surgeons, Ruth Jackson Orthopaedic Society and the Pediatric Orthopaedic Society of North America.

Key Insights

- Flatfoot (pes planus) refers to loss of the medial longitudinal arch, and for most children under the age of 3, flatfoot is a normal variant.
- There are two distinct types: flexible flatfoot, which can be associated with Achilles tendon tightness, and rigid flatfoot.
- Typically, flexible flatfoot is painless, occurs bilaterally, and often coincides with a family history of flatfoot.
- When no other symptoms are present, flexible flatfoot does not require treatment and shoe inserts are not recommended.
- Treatment for rigid flatfoot depends on the underlying pathology. Often symptoms can be alleviated with a functional orthosis aimed at minimizing subtalar motion. If that is not effective, children with rigid flatfeet often need surgery.

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One-Call Access

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About *InBrief*

InBrief has been developed by pediatric orthopedic specialists at Gillette Children's Specialty Healthcare as a resource for primary care providers. If you have comments or questions, please contact Paul Fiore, M.B.A., F.A.C.H.E., program manager, Center for Pediatric Orthopedics, at pfiore@gillettechildrens.com.

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When to Refer a Child with Flatfeet for Treatment

Refer a child with flatfeet for treatment if:

- The feet are asymmetric.
- The loss of arch had a sudden onset.
- The flatfeet are stiff or painful.
- The Achilles tendon is tight.

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