

A Rare Case of Metatarsus Adductus Secondary To A Congenital Synchrondrosis of The Navicular-Cuboid Complex

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Statement of Purpose

The purpose of this case study is to highlight an unusual secondary deformity caused by a rare tarsal coalition.

Literature Review

- The most common types of tarsal coalitions are the calcaneonavicular and talocalcaneal which represent 90% of all coalitions (1). The cuboid-navicular coalition accounts for less than 1% (2).
- In 2016, Worsham et al performed a systemic review of the literature on cuboid-navicular coalitions. Of all the cases they reviewed, none were reported to have a concomitant metatarsus adductus deformity.
- Coalitions are associated with a flat foot deformity and it has been found that treating the deformity along with resection of the coalition will improve the patient's outcome (3).

Case Study

- A 25-year-old female presented with left sided moderate to severe foot pain and in-toeing gait. The onset was gradual with increasing severity and was aggravated by weight bearing, uneven terrain and stairs. There are increasing difficulties with ADLs. All conservative treatments were unsuccessful.
- Exam revealed in-toeing gait with excessive internal rotation of the left foot.
- Radiographs revealed an increased metatarsus adductus angle. MRI was utilized to find a previously undiagnosed 100% fibrous coalition of the cubonavicular joint.
- The patient underwent cubonavicular coalition resection with adipose transposition.
- Post operative radiographs presented a corrected metatarsus adductus angle
- The patient returned to normal shoe gear and activity pain free.

Pre-Operative Imaging



Post-Operative Imaging



Analysis & Discussion

A tarsal coalition is a condition where two or more bones in the foot are joined, causing restriction of motion at that joint. The most common tarsal coalitions are the talocalcaneal coalition and the calcaneonavicular coalition. All other coalitions, including the cubonavicular coalition are rare with incidence less than 6% in the literature. Although coalitions are most commonly associated with a pes planus deformity, there have been scarce reports of a concomitant cavovarus foot deformity (4). The combination of a navicular cuboid coalition along with a metatarsus adductus has not been previously reported.

Although rare, the foot and ankle surgeon needs to consider a navicular-cuboid coalition as a differential diagnosis and utilize advanced imaging to evaluate for this condition (5). Furthermore, the patient should be evaluated for other foot deformities that have occurred secondary to the coalition and consider this in preoperative planning. In our patient the surgical goal was to not only resect the coalition, but to correct the increased metatarsus adductus angle.

References

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