



Case Report

Multiple unilateral tarsal coalitions in a nonsyndromic patient^{☆,☆☆}Edward J. Richer^{a,*}, Barbara K. Pawley^b^a Department of Radiology, C.S. Mott Children's Hospital, University of Michigan, 1540 E Hospital Dr, Ann Arbor, MI, 48109, USA^b Department of Radiology, University of Kentucky Chandler Medical Center, 800 Rose St, Lexington, KY, 40536, USA

ARTICLE INFO

Article history:

Received 31 August 2015

Received in revised form 25 September 2015

Accepted 16 October 2015

Keywords:

Tarsal

Coalition

Talocalcaneal

Calcaneonavicular

ABSTRACT

Tarsal coalition is relatively frequent, with an estimated prevalence of 1–2%. Coalitions are most commonly talocalcaneal or calcaneonavicular, accounting for 90% of cases. While it is well known that bilateral tarsal coalitions can occur in up to 50% of cases, the presence of multiple coalitions in the same foot is less well described. In this report, we present a case of talocalcaneal and calcaneonavicular coalitions occurring in the same foot and briefly review the relevant literature.

© 2015 Elsevier Inc. All rights reserved.

1. Introduction

Congenital tarsal coalition is a relatively frequent cause of foot and ankle pain, occurring with an estimated prevalence of 1–2% [1,2], although the true prevalence is unknown. Coalition is thought to occur due to a defect in mesenchymal differentiation during development with resulting absence of a normal joint space between the involved bones. Coalitions may be osseous, cartilaginous, or fibrous in nature. The most common tarsal coalitions are talocalcaneal and calcaneonavicular, which account for up to 90% of all cases, with talonavicular, calcaneocuboid, and cubonavicular coalitions much less common. Symptoms of coalition may include tarsal or hindfoot pain, rigid or spastic flatfoot, and restricted range of motion. However, in some cases, coalition may be asymptomatic. While it is well known that bilateral tarsal coalitions are frequent, occurring in up to 50% of cases, the presence of multiple coalitions in the same foot is less well documented in the literature. Correctly identifying multiple coalitions in the same foot is critical as therapeutic decisions, including conservative management versus surgery, may be altered. In this report, we present a case of talocalcaneal and calcaneonavicular coalitions occurring in the same foot in an adolescent male.

2. Materials and methods

An institutional review board waiver was obtained for this retrospective case report. The clinical symptoms and physical exam findings

were obtained from the electronic medical record system. Plain radiographs and computed tomography (CT) images were retrospectively collected from the Picture Archiving and Communication System.

3. Results

Our case features a 14-year-old male who presented with symptoms of dorsal foot pain for several months, with limited plantarflexion and subtalar motion of the right foot compared to the left, and with a relative flat foot gait on the right. The patient was otherwise healthy and was noted to participate in competitive sports, including football. Radiographs demonstrated findings of calcaneonavicular coalition (Fig. 1), including the “anteater sign” on the lateral view, and a complete bony bridge on the oblique view. The anteater sign was described by Oestreich et al. as an elongated anterior process of the calcaneus resembling the nose of an anteater [3]. The lateral view also demonstrated a more subtle finding of loss of the normal subtalar joint space, known as the *C sign*. The *C sign* was described by Lateur et al. as a continuous line made up by the medial talar dome and posteroinferior sustentaculum tali, due to lack of a normal joint space [4]. A subsequent unenhanced CT of the right ankle confirmed the presence of both calcaneonavicular and talocalcaneal bony coalitions (Figs. 2, 3).

4. Discussion

It is well documented that tarsal coalitions are frequently bilateral, occurring in up to 50% of cases [5,6], and imaging of the contralateral foot is often recommended to exclude an asymptomatic coalition. Less well documented in the literature is the frequency of multiple coalitions in the same foot. Multiple coalitions have been associated with a variety of syndromes, such as tarsal–carpal coalition syndrome, fibular

☆ Funding/Support: None.

☆☆ Disclosures: The authors declare that they have no conflicts of interest.

* Corresponding author. Tel.: +1-734-232-9246; fax: +1-734-647-5452.

E-mail address: richerej@gmail.com (E.J. Richer).

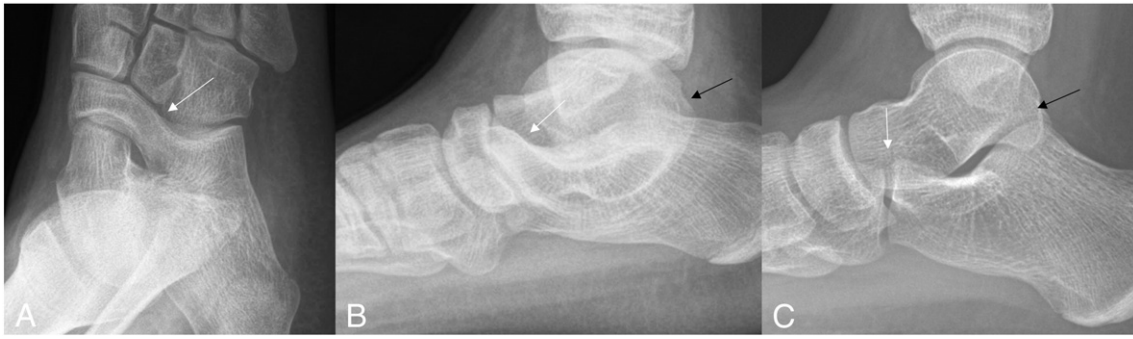


Fig. 1. Oblique (A) and lateral (B) foot radiographs demonstrate calcaneonavicular and talocalcaneal coalitions. Anteater sign (B, white arrow), with an elongated anterior process of the calcaneus. C sign (B, black arrow), with a continuous osseous shadow from talus to sustentaculum tali. Lateral ankle radiograph (C) shows the normal appearance of the anterior calcaneus (white arrow) and subtalar joint (black arrow).

hemimelia, Nievergelt-Pearlman Syndrome, and Apert syndrome (Fig. 4). Clarke, however, performed a survey of nonsyndromic patients with tarsal coalitions at his institution and found that 20% had more than one in a single foot [7]. Given this relative frequency, failing to di-

while multiple coalitions may require more extensive surgery such as a triple arthrodesis.

The classic radiographic finding of calcaneonavicular coalition is the anteater sign, the elongation of the anterior aspect of the calcaneus,

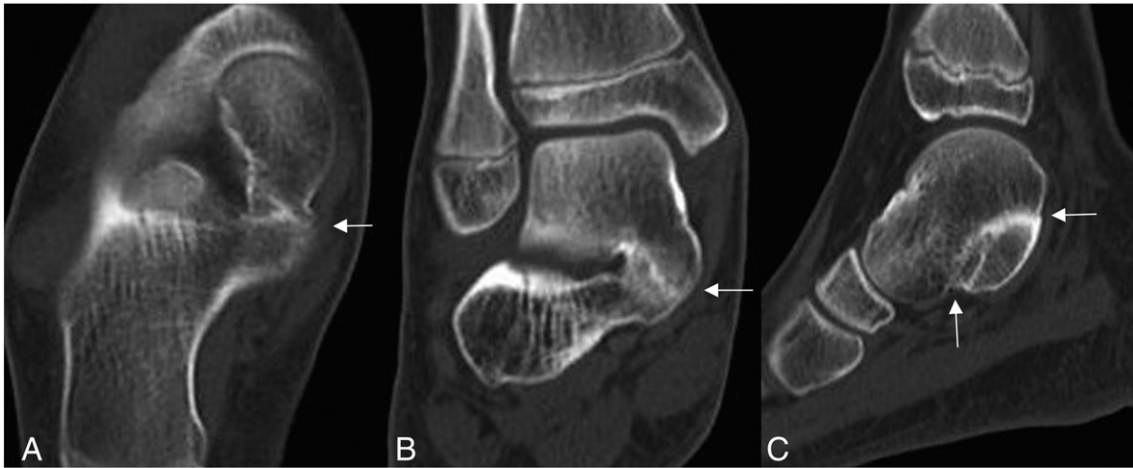


Fig. 2. Axial (A), coronal (B), and sagittal (C) images from noncontrast ankle CT demonstrate the osseous talocalcaneal coalition shown on prior radiographs.

agnose more than one coalition may lead to patient morbidity, as the patient may undergo therapy such as surgery which could suboptimally or inappropriately treat the condition. Therapy for coalitions is typically initially nonoperative, including orthotics, activity modification, or casting in an attempt to alleviate symptoms. Surgery is reserved for patients who have failed conservative therapy. A single bony coalition may be resected, with interposition of fat or tendon between the two bones,

which is best depicted on a lateral view. Oblique radiographs may also depict a bony bridge between the calcaneus and the navicular. Findings of talocalcaneal coalition may include the classic “C sign” on the lateral view, resulting from bony bridging between the talus and the sustentaculum tali, or the talar beak, resulting from impaired subtalar joint motion. Both clinicians and radiologists should be cognizant of the fact that multiple tarsal coalitions may exist in the same foot, even



Fig. 3. Axial (A) and sagittal (B) images from noncontrast ankle CT demonstrate the osseous calcaneonavicular coalition shown on prior radiographs. Note the CT correlation to the radiographic anteater sign (B).

Download English Version:

<https://daneshyari.com/en/article/4221218>

Download Persian Version:

<https://daneshyari.com/article/4221218>

[Daneshyari.com](https://daneshyari.com)