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Nonosseous Tarsal Coalition of the Lateral Cuneocuboid Joint: A Case Report

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ABSTRACT

We describe a rare case of a nonosseous coalition of the lateral cuneocuboid joint with peroneal spasm that we successfully treated with resection. A 60-year-old female had been experiencing constant pain in her right foot, particularly when walking and going up and down stairs. The pain had been present for approximately 1 year after she had experienced a minor injury. Her right ankle showed plantar flexion restrictions (right 20° and left 40°) and was held in an antalgic valgus position. Sudden passive plantar flexion produced pain behind the lateral malleolus of the right ankle. Tenderness was detected in the right peroneus brevis tendon and the right sinus tarsi. On plain radiographs, the oblique view showed an irregularity in the articular surface of the lateral cuneocuboid joint in both feet. On computed tomography images, there was no osseous continuation in the lateral cuneocuboid joint, indicative of a nonosseous bridge between the lateral cuneiform and the cuboid. The nonosseous coalition between the lateral cuneiform and the cuboid was resected and the trabecular surfaces and cortical margins covered with a thin film of bone wax. The patient's recovery was unremarkable, and 1 year after surgery, she was able to walk without pain and was able to perform her usual activities and job.

Tarsal coalitions, such as talocalcaneal coalition and calcaneonavicular coalition, often cause peroneal spasm and rigid flatfoot. However, a tarsal coalition involving the lateral cuneiform and cuboid accompanied by peroneal spasm is quite rare. To the best of our knowledge, no other reports have been published of this condition in peer-reviewed foot surgical studies. We describe a nonosseous coalition bridging the lateral cuneiform with the cuboid that resulted in peroneal spasm and successful treatment with resection.

Case Report

A 60-year-old female presented to our hospital complaining of constant pain in her right foot, particularly when walking and going up and down stairs. The pain had been present intermittently for approximately 1 year after she had experienced a minor injury when she was hit on the right foot by a shopping cart. She had visited another hospital after the injury, where her foot had been fixed using a plaster slab with a no loading condition for 3 weeks, and she had been prescribed nonsteroid anti-inflammatory drugs. After 4 weeks, she was permitted to walk under full weightbearing conditions. Subsequently, she received an injection of 2% plain lidocaine and steroids to the sinus tarsi 5 times. However, the pain in her right foot persisted. She was referred to our institution 1 year after the right foot contusion.

On presentation, we performed a clinical examination and found that her right ankle plantar flexion was restricted to 20°, and she displayed approximately 40° of dorsiflexion at the left ankle. Moreover, she held her right ankle in an antalgic valgus position. Sudden passive plantar flexion produced pain posterior to the lateral malleolus of the right ankle. Tenderness was also detected in a right peroneus brevis tendon and the right sinus tarsi. On plain radiographs of each foot, no clear abnormality was visible on the dorsoplantar images; however, the medial oblique views showed irregularity of the cortical margins at the articular surfaces of the lateral cuneocuboid joint in both feet (Fig. 1). On computed tomography images, no distinct osseous continuation was seen uniting the lateral cuneiform with the cuboid. The coronal computed tomography view (Fig. 2) and reconstructed 3-dimensional images (Fig. 3) revealed irregular cortical margins between the lateral cuneiform and cuboid, without

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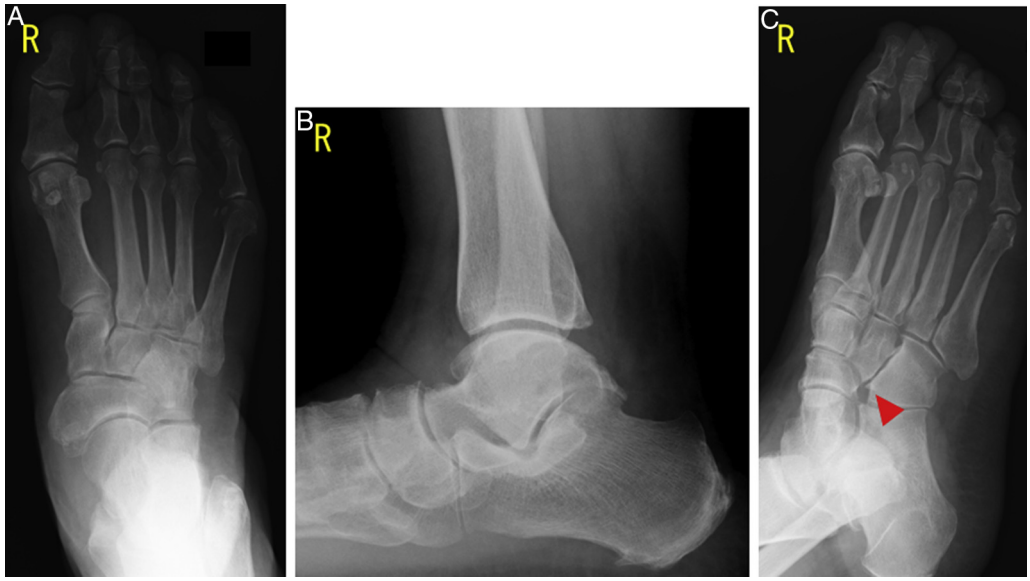

Fig. 1. (*A* to *C*) A 60-year-old female presented with a nonosseous tarsal coalition of the lateral cuneocuboid joint. On the plain radiographs, no clear abnormalities were seen on the dorsoplantar image; however, the oblique view showed an irregularity in the articular surface of the lateral cuneocuboid joint (*C, arrowhead*).

distinct osseous bridging. Magnetic resonance imaging revealed an irregular surface and a soft tissue (nonosseous, noncalcified) continuation of the lateral cuneocuboid joint on the coronal view (Fig. 4).

Injections of 2% plain lidocaine into the joint between the lateral cuneiform and cuboid was temporally effective at eliminating pain; however, after the patient returned to her normal activities, the initial symptoms recurred within several hours. From the clinical and imaging examination findings, we diagnosed a nonosseous coalition (bar, bridge) between the lateral cuneiform and cuboid bones with symptomatic peroneal spastic flatfoot. Because conservative treatment had failed to yield sustained relief, the decision was made to surgically excise the coalition.

Approximately 6 weeks after her initial presentation to our service, the patient was taken to the operating room where she was positioned supine and placed under the general anesthesia. A thigh tourniquet was used for exsanguination. An incision was made on the lateral cuneocuboid joint. The extensor digitorum brevis was identified and retracted medially. The dissection was continued along the cuboid until the lateral cuneocuboid joint was exposed. The nonosseous coalition between the lateral cuneiform and the cuboid was identified (Fig. 5), after which it was resected with osteotomes and rongeurs (Fig. 6). The exposed trabecular surfaces and cortical margins were covered with bone wax, and the wound was closed in anatomic layers. Postoperatively, the patient was started on an exercise program consisting of midfoot and hindfoot motions. She was allowed to place her weight on the joint as long as the foot could tolerate it, starting the day after the surgery. She was able to walk on the foot from the fourth day after surgery. At the 6-month follow-up visit, she was able to walk without pain and was able to perform her usual activities and job. At 24 months after surgery, she was satisfied with the outcome, wearing her regular shoes and unrestricted in regard to weightbearing activities.

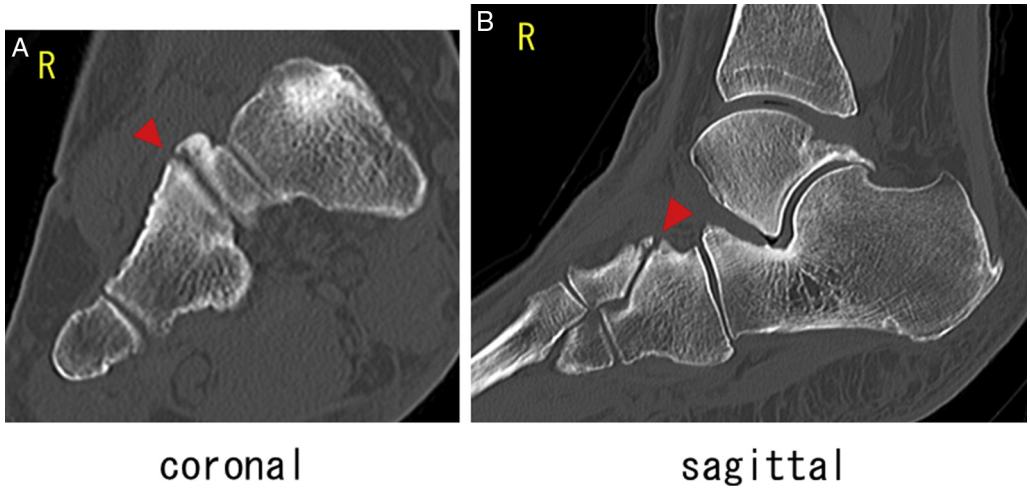

Fig. 2. (*A* and *B*) On the computed tomography images, the osseous continuation in the lateral cuneocuboid joint was not visible; however, the coronal view showed noncontinuous bridging and an irregular surface on the lateral cuneocuboid joint *(arrowhead).*