Os vesalianum pedis is an accessory bone located proximal to the base of the fifth metatarsal. Its prevalence has been reported to be from 0.1% to 1.0%. This bone is found within the peroneus brevis tendon and is asymptomatic in the majority of people. We describe a patient with os vesalianum pedis with a distinct mediocuboidal articulation. The radiologic differential diagnosis of the ossicle is discussed. (J Am Podiatr Med Assoc 95(6): 583-585, 2005)
elastic bandage, and nonsteroidal anti-inflammatory medication. The patient was asymptomatic at a follow-up visit 2 weeks later and remained so at 1 year.

Discussion

The lateral oblique radiographs of our patient demonstrated that the ossicle was separated from the metatarsal by a thin radiolucent line of constant width. There was a distinct articulation between the ossicle and the cuboid bone. Inoue et al noted a similar articulation intraoperatively in a patient with os vespalianum pedis. The presence of a cuboidal articulation is important in the differential diagnosis of this accessory bone, which includes Jones fracture, stress fracture of the proximal fifth metatarsal, avulsion fracture of the fifth metatarsal, secondary center of ossification of the proximal fifth metatarsal, Iselin’s disease, and nonunion.

The proximal part of the fifth metatarsal region may be injured in inversion sprains of the ankle. Avulsion or Jones fracture is the most common injury pattern. Radiographically, a Jones fracture is a transverse fracture at the junction of the diaphysis and metaphysis that does not extend distal to the fourth and fifth intrametatarsal articulation. Avul-
sion fracture is located in the proximal pole of the fifth metatarsal. Radiographically, a fracture line appears in the transverse plane that can be slightly oblique. A stress fracture of the proximal fifth metatarsal is a diaphyseal pathologic fracture that is located at the proximal 1.5 cm of the shaft. Stress fractures are more distal and in the transverse plane on plain radiographs. Before bony maturity, the secondary center of ossification appears as a small, shell-shaped fleck of bone oriented slightly oblique to the metatarsal shaft and is located on the plantar lateral aspect of the tuberosity of the fifth metatarsal. Traction apophysitis as a result of macrotrauma or repetitive microtrauma presents as pain, swelling, and occasionally bony and cartilaginous overgrowth. Tiny avulsion fractures may develop at the weak apophyseal growth cartilage owing to tightness or overloading of muscle–tendon units, resulting in Iselin’s disease. Radiographs, especially oblique views, show the enlargement of apophyses and often fragmentation of the ossification center. If bony maturity is reached and symptoms persist, nonunion should be suspected.

The thin radiolucent lines that separate ossicles from metatarsals on radiographs likely represent synchondrosis. Attachments to the metatarsal by fibrous tissues were observed during surgery to treat os vesalianum. These radiolucent lines were oriented nearly horizontally in our patient. Because the ossification center of the fifth metatarsal apophysis is linear initially and longitudinally oriented parallel to the metatarsal shaft, abnormalities of the secondary ossification center may cause a more vertically or obliquely oriented boundary between the proximal part of the fifth metatarsal and abnormal bones. Although the radiographic separation lines were oriented nearly horizontally in our patient, views of the metatarsal–ossicle boundary, which likely represent synchondrosis, may suggest that os vesalianum pedis is a developmental variant rather than a true ossicle in this case.

Our patient was clearly asymptomatic until an inversion injury of the right foot occurred. The traumatic event might have initiated the symptoms at the base of the fifth metatarsal. Conservative management resulted in resolution of the symptoms. The differential diagnosis of lateral foot pain with an ankle inversion injury should include symptomatic os vesalianum pedis. A unique characteristic of our case was a distinct articulation of os vesalianum pedis with os cuboideum. This articulation is a typical distinctive feature of os vesalianum pedis.

References