



Ankle and Subtalar Synovitis in a Ball-and-Socket Ankle Joint Causing Posterolateral Painful Coarse Crepitus: A Case Report



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ABSTRACT

A 17-year-old girl with bilateral ball-and-socket ankles reported left medial heel pain. Her left heel had gone into a varus position on tiptoeing, and a painful clunk had occurred when returning to normal standing. The clunk persisted after physiotherapy and treatment with an orthosis. Subtalar arthroscopy and peroneal tenodescopy showed mild diffuse synovitis of the ankle joint, especially over the posterior capsule, and a patch of inflamed and fibrotic synovium at the posterolateral corner of the subtalar joint. The clunk subsided immediately after arthroscopic synovectomy and had not recurred during 5 years of follow-up. We found no other reported cases of ankle and subtalar synovitis occurring in patients with a ball-and-socket ankle joint.

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The ball-and-socket deformity of the ankle is rare anomaly characterized by a rounding of the tibiotalar joint in the frontal plane and a relatively short and broad lateral malleolus (1). The anomaly is presumably not congenital itself but secondary to congenital conditions in the peritalar region (2). The rounded talar shape is caused by disturbed or increased ankle mobility, secondary to limited movement of the subtalar and midtarsal joints. In every case, the promoting agent acts before 5 years of age, when the capacity of the immature talocrural joint to remodel is high (3,4). The anomaly can present as part of a triad with a shortened limb and tarsal coalition. In some cases, it will be a component of the spectrum of fibular hypoplasia of the limb. Some cases of fibular hemimelia have been associated with lateral ray deficiency and others have not (1).

The natural history of the anomaly has been debated, and no consensus has been reached regarding the need for treatment (2). Although some investigators have claimed that all patients will be asymptomatic and that treatment is not indicated, others have advocated the use of an ankle-foot orthosis to control pronation and prevent progressive ankle valgus (6). Some have also advocated

debridement of the impinging osteophytes or subtalar arthrodesis to address impingement or arthrosis (1,7). We describe a case of a ball-and-socket ankle with a painful hindfoot clunk due to ankle and subtalar synovitis. To the best of our knowledge, no other reported cases have been published in English-language studies.

Case Report

A 17-year-old girl with a history of left medial heel pain had worn insoles for many years. She reported increased left heel pain after prolonged walking 1 year before presentation. She was otherwise healthy and had no family history of a similar problem or any rheumatologic disease.

She had left valgus heel with a tight gastrocnemius. No flatfoot deformity was detected in the footprint. Her left heel went into a varus position on tiptoeing, and a painful clunk was apparent on returning to normal standing (Supplemental Video S1). No peroneal subluxation or dislocation was detected. Radiographs of the weight-bearing joint showed bilateral ball-and-socket ankles with a left valgus ankle (Fig. 1). No radiographic evidence of tarsal coalition was found, but both elbows were lax and asymptomatic (Fig. 2). No clinical evidence was seen of any underlying rheumatologic disease.


A supramalleolar orthosis and physiotherapy reduced the medial heel pain. However, the painful clunk persisted. Fluoroscopy of the left ankle showed that the ankle went into a valgus position on dorsiflexion and that the joint was congruent in this position. Subtalar arthroscopy showed mild diffuse synovitis of the ankle joint, especially over the posterior capsule. A patch of inflamed and fibrotic

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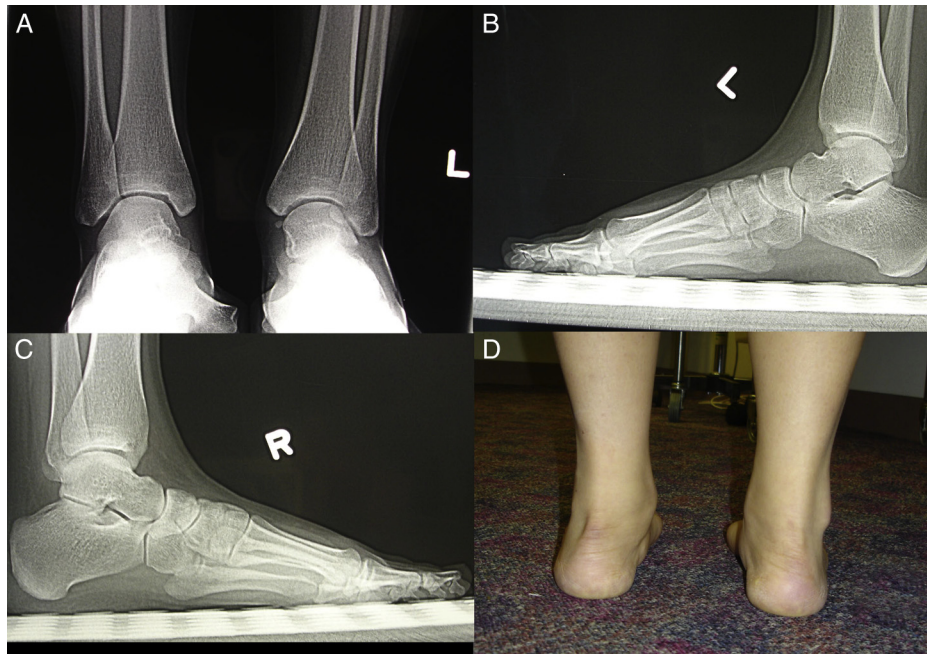


Fig. 1. (A–C) Bilateral ball-and-socket ankles with left valgus deformity in a 17-year-old female. The left medial malleolus was short and the middle and posterior talocalcaneal articulations were obviously open. Additionally, no collapse was seen of the medial column, suggesting pronation of the feet. (D) The left valgus heel.

synovium was noted at the posterolateral corner of the subtalar joint (Fig. 3). The cartilage in the ankle and the subtalar joint had not degenerated, and no abnormality was detected by peroneal tendoscopy. The painful clunk subsided immediately after arthroscopic synovectomy. At the latest follow-up visit, 5 years later, the painful clunk had not recurred (Supplemental Video S2), and she reported only mild medial ankle pain after prolonged walking. Radiographs revealed no interval change in her ankles (Fig. 4).

Discussion

Some investigators believe that no ball-and-socket deformity is present in patients without subtalar fusion and that it will not develop in cases with fibrous or cartilaginous coalitions in the midfoot because these types of “soft connections” allow residual mobility in the subtalar joint (2,5). However, in our patient, the radiographs did not show synostosis in the subtalar or the midtarsal joint. Moreover, subtalar

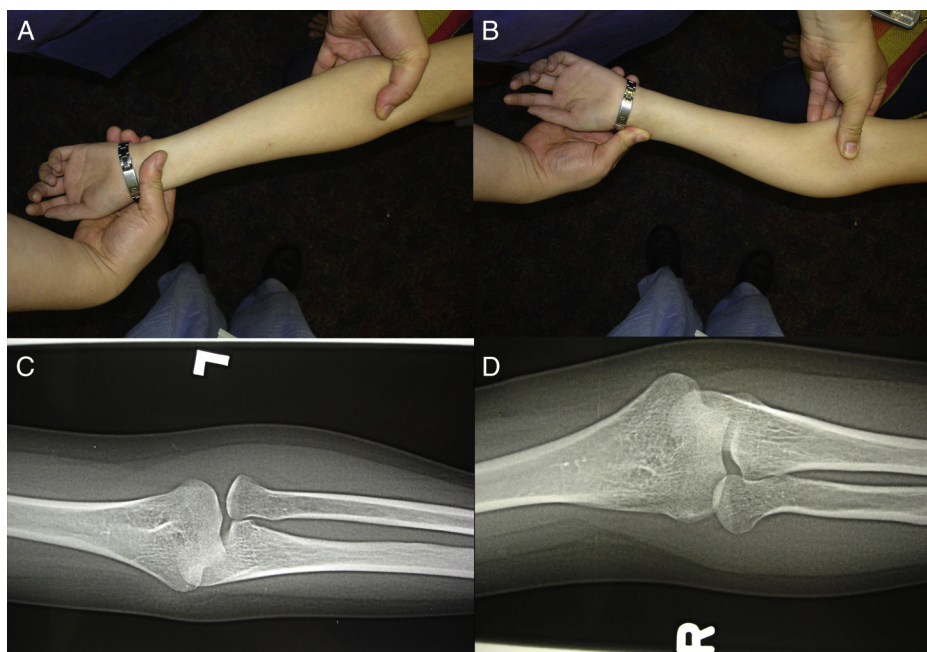


Fig. 2. (A and B) Her right elbow showed an excessive valgus deformity on valgus stress. (C and D) The capitellum of both elbows was hypoplastic.

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