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Radiology Quiz

A different ball game

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HISTORY

A 70-year-old woman presented with chronic pain and swelling over her right ankle. Increased pain on prolonged walking and standing made it difficult for her to bear weight on her right leg recently. No history of diabetes or other chronic systemic disorder was present. There were deformity and limitation of the ankle movement without any distal neurovascular deficit. Ankle radiographs were done as the initial investigation.

- What are the radiographic findings?
- What is the etiology?
- What are the associated disorders?

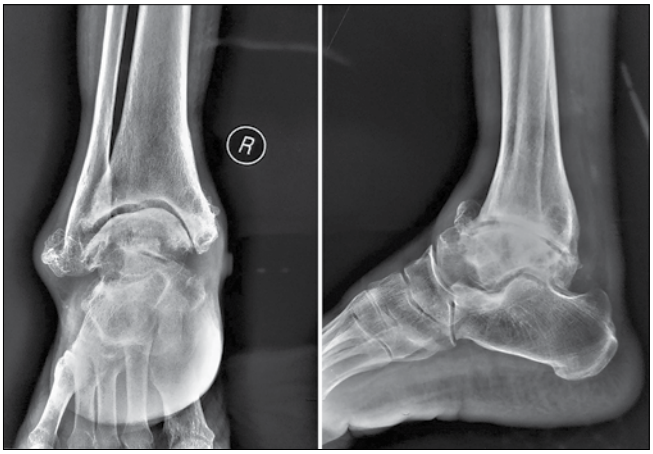

Figure 1: The ankle radiograph in the orthogonal planes shows the dome-shaped talus both in the anteroposterior and lateral views. The talar outline with the corresponding outline of the distal tibia articular surface forms a "ball-and-socket" joint. There are associated arthritic changes and an osteochondral body adjacent to the distal fibula that may be secondary to advanced degenerative changes. Chronic arthritic changes may have contributed to the formation of the loose osteochondral body.

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FINDINGS

The talus appears in a dome-shaped outline in both anteroposterior and lateral views. The corresponding distal tibia has a concave shape matching that of the unusual looking talar dome [Figure 1]. The ankle radiographs show arthritic changes in the tibiotalar joint and osteochondral masses on the lateral aspect below the distal fibula.

DIAGNOSIS

An arthritic ball-and-socket ankle joint.

PEARLS AND DISCUSSION

The ball-and-socket ankle joint is a rare anomaly and was first described by Lamb, in 1958, through his series of five cases.[1] This is considered a congenital deformity, but another theory suggests that this condition may result secondary to various pre-existing congenital conditions. The ball-and-socket joint develops by 4–5 years of age.[2] However, the confirmation of the deformity to be present from birth must be fully ascertained.[3] Familial affliction has also been described.[4] The fibula may or may not be contributing to the deformity. This anomaly may be an occasional and incidental finding. Symptomatic cases, not amenable to conservative treatment, may require osteotomies for associated valgus/varus deformities for better alignment and reduction of joint pressure. An arthrodesis of tibiotalar or tibiotalocalcaneal joints may be required in selected cases where the condition is associated with severe arthritic changes.[5] The condition is described to be associated with some congenital and acquired disorders given below.

Key associated congenital abnormalities are as follows:

- Lower limb congenital shortening
- Tarsal coalition (talonavicular, talocalcaneal, or calcaneocuboid)
- Aplasia/hypoplasia fibula
- Absent digital rays
- Clubfoot
- Congenital insensitivity to pain.

Key acquired associated conditions are as follows:

- Poliomyelitis
- Following talocalcaneal arthrodesis (Grice procedure) done at an early age
- Abnormal ligamentous laxity.

AUTHOR'S CONTRIBUTIONS

GSD collected the data, did literature search and approved the final draft, and is responsible for the manuscript's content and similarity index.

DECLARATION OF PATIENT'S CONSENT

Author certifies that he has obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initials will not be published and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

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CONFLICTS OF INTEREST

There are no conflicting relationships or activities.

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