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Radiological Studies

Fig. 1A, B. Anteroposterior and lateral views of the leg with special reference to the upper portion of the tibia demonstrate two intraosseous, well marginated, lytic lesions in the proximal portion of the tibia. Thickening of the cortex is present, particularly on the posterior surface of the tibial shaft. Multiple striations are noted in the cortex radiating from the intraosseous lucencies.

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History

A seventeen-year-old male was referred to the Orthopedic Service for evaluation of a five-year history of swelling and a two-month history of pain in the right leg.

Examination showed equal leg lengths with increased diameter of the right calf. A palpable bruit was felt over the anterolateral aspect of the proximal end of the tibia. Varicosities and extensive trophic changes were noted over the distal pretibial region. The dorsalis pedis and posterior tibial pulses were intact.

Radiological studies of the right tibia were obtained, showing radiolucencies and striations in the upper half of the tibia with thickening of the tibial cortex posteriorly (Fig. 1A and B).
Radiological Studies

Fig. 2. Angiographic examination of the leg show enlarged feeding arteries and multiple intra- and extraosseous aneurysms drained by early venous channels. The presence of complex, dilated veins is also observed.

Fig. 3. Subtraction technique during the angiographic examination shows an intraosseous aneurysm (solid arrow) corresponding to the lytic defect in bone, drained by multiple enlarged intraosseous venous channels (open arrow). These features account for the bony striations noted in Figure 1.

Diagnosis: Congenital Intraosseous Arteriovenous Macrofistulous Anomaly (Malformation)

The differential diagnosis includes Paget disease of bone, an infective process and soft tissue tumor with secondary changes in bone.

Discussion

An arteriogram via the right femoral artery demonstrated a large intraosseous, as well as extraosseous, macrofistulous arterio-venous malformation (Fig. 2). During the arterial phase large intraosseous aneurysms were observed to fill the lytic tibial defects noted on plain films. Multiple extraosseous aneu-