

Intraosseous Anomalous Drainage in a Patient with Varicose Veins: A Rare Anatomical Variant

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Intraosseous anomalous venous drainage of varicose veins is a rare anomaly. This is a 38-year-old lady who presented with left lower limb pain for 1 week. On inspection, there was erythema and mild swelling over anteromedial aspect of left lower extremity. On palpation of anterior aspect of lower third of left tibia, there was a firm mobile mildly tender mass.

X-ray of left lower extremity showed a small cortical defect at the anteromedial aspect of mid left tibia (→**Fig. 1**). This raised a suspicion for a possible osteoid osteoma. Computed tomography (CT) scan revealed a tubular structure crossing through the cortex of anterior midshaft of left tibia with intramedullary continuation superiorly and exiting through a defect at posterior superior aspect (→**Fig. 2**). It appeared to be connected to subcutaneous varicose veins. Magnetic resonance imaging (MRI) showed diffuse subcutaneous varicose veins with prominent pretibial varices that are directly connected to the anomalous intraosseous left tibia vein (→**Fig. 3**). Further evaluation with left lower limb venogram (→**Figs. 4 and 5**) demonstrated a network of mildly dilated veins with stagnation of the blood and prominent superficial veins at the level of the tibia.

Intra-osseous venous drainage of varicose veins in the lower extremities is rare. Most of the reported cases were unilateral involving the tibia.



Fig. 1 Anteroposterior and lateral left tibia/fibula views demonstrate well-defined lucency (arrows) at the anteromedial aspect of mid tibia cortex.

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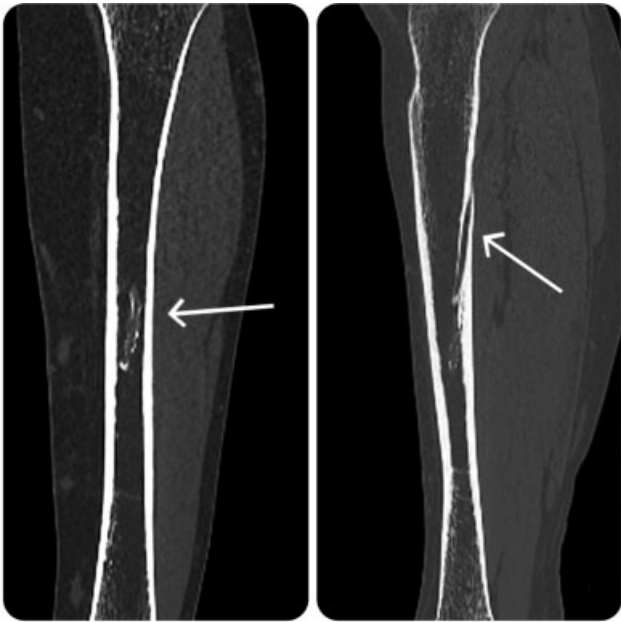


Fig. 2 Axial, coronal, and sagittal computed tomography cuts showing the intraosseous vein (arrows) coursing from anterior tibial cortex with intramedullary continuation and eventually exiting through the posterior cortex superiorly.



Fig. 4 Left lower limb venogram anterograde approach at the level of mid to distal third of the tibia demonstrates the network of mildly dilated veins and prominent superficial veins.

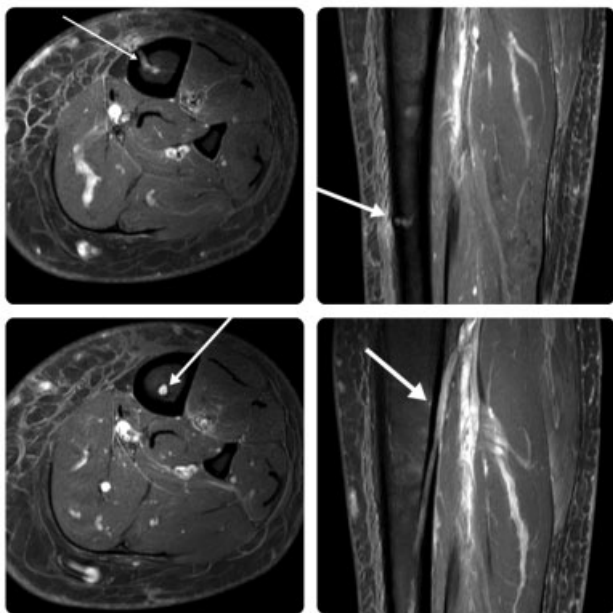


Fig. 3 Axial and sagittal magnetic resonance imaging cuts demonstrate the anomalous vein (arrows). There are multiple varicose veins in the surrounding soft tissue associated with subcutaneous edema.



Fig. 5 Left lower limb venogram anterograde approach at the level of mid to distal third of the tibia demonstrates the network of mildly dilated veins and prominent superficial veins.

Intraosseous varicose veins can be diagnosed with color Doppler ultrasonography demonstrating reflux. However, cross-sectional imaging is important to differentiate varicose veins from other differential diagnoses such as arteriovenous malformation, arteriovenous fistula, or hemangioma. CT scan and MRI usually show a dilated intraosseous vein with direct

connection to surrounding varicose veins. However, MRI is preferred due to better soft tissue resolution and absence of radiation.

Conflict of Interest

None.