

Embolization of a large plantar arteriovenous malformation

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Arteriovenous malformations (AVMs) are among the most challenging vascular conditions to manage. AVMs can be asymptomatic or lead to pain, ulceration, and congestive heart failure if high flow. Although most AVMs are present at birth, many will not manifest until decades later after an insult such as trauma or infection leads to engorgement of the lesion.¹ When an AVM is suspected, ultrasound examination is usually the first-choice imaging modality as it is fast, accessible, and can determine if the lesion is high or low flow.² Magnetic resonance imaging (MRI) can help further characterize the lesion and surrounding tissue.² Treatment of AVMs includes percutaneous embolization with coiling and/or sclerotherapy and surgical excision.

A 54-year-old man presented with a 7 × 9 cm right plantar mass (A). Six years ago, the patient developed a subcentimeter plantar mass after an episode of cellulitis. Over the past 4 months, the lesion rapidly progressed causing significant pain and impaired mobility. The patient arrived with an MRI from an outside facility that was concerning for an AVM, so we proceeded with angiography to better evaluate the inflow and outflow of the lesion.

We selectively catheterized the right anterior tibial, posterior tibial, and peroneal arteries capturing anterior-posterior and lateral-view angiograms of each vessel. Panel B (Cover) exhibits a lateral view of the anterior tibial feeding the AVM with early venous filling. Additional images demonstrated that the AVM was also fed by the posterior tibial (C). We then embolized the feeding vessels with a combination of coils and a proprietary premixed, radiopaque, injectable embolic solution (D).

The patient's postoperative course was uncomplicated, and repeat MRI revealed complete thrombosis of the AVM. Orthopedic and plastic surgery were then performed, with a staged radical excision of the plantar AVM. This case illustrates the utility of embolization for large, high flow plantar AVMs. Ultimately, the patient will benefit from comprehensive care by an interdisciplinary surgical team.

The patient provided consent for publication of his case.

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