

## VASCULAR IMAGES

# Multidisciplinary approach in the management of a giant axillary arteriovenous malformation

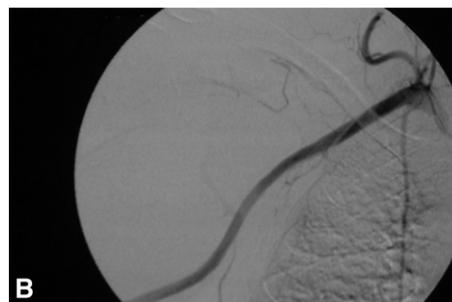
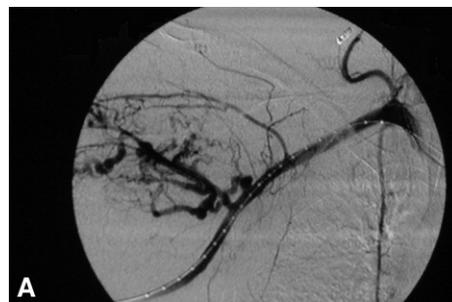
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A 42-year-old man presented in 2005 with a large pulsatile, nontender mass in the right axilla, with a continuous-flow bruit. The draining veins were prominent and pulsatile. He complained of edema and ischemic pain in his right hand. Ten years previously, he underwent surgery elsewhere to remove the mass, but the operation was aborted because of excessive bleeding. Subsequently, the mass enlarged and became symptomatic.

The diagnosis was confirmed by preoperative magnetic resonance angiography (MRA) (Cover) and intraoperative arteriography (A) that showed a large arteriovenous malformation (AVM) nourished by branches of the thyrocervical trunk (mainly the suprascapular artery), branches of the axillary artery (mainly the anterior circumflex humeral and posterior circumflex humeral arteries) and collaterals.

We treated this patient with a multidisciplinary approach of endovascular therapy combined with surgical/excisional therapy. First, the suprascapular artery was embolized with platinum coils (Hilal embolization microcoils, Cook) (A) to provide a good proximal neck for the stent-graft, in order to avoid sacrificing the internal mammary artery. Next, a Gore Viabahn stent-graft was deployed to occlude the origin of the axillary artery branches and collaterals (B). This procedure to block the feeding vessels was done only as a preoperative adjunctive measure to facilitate subsequent surgical excision to reduce bleeding. One week later, the venous component of the AVM was treated with direct puncture sclerosis using 95% ethanol. Since the lesion had multiple noncommunicating compartments it required eleven sites of injection. Ethanol is essential to permanently damage this primitive embryonic tissue before planned surgical excision. Six weeks after this sclerotherapy, we observed shrinkage of the lesion and the mass was resected with minimal bleeding. The edema and the ischemic pain resolved. A 2-year follow-up MRA showed no arterial inflow to the resected AVM (C).

Management of an AVM by a multidisciplinary approach that integrates endovascular and excisional therapies offers good results with no recurrence in early follow-up.<sup>1</sup> Aggressive control of inflow arteries, outflow veins and collateral vessels is essential to minimize morbidity and reduce recurrence.



### REFERENCE

1. Lee BB, Do YS, Yakes W, Kim DI, Mattassi R, Hyon WS. Management of arteriovenous malformations: a multidisciplinary approach. *J Vasc Surg* 2004;39: 590-600.

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