

VASCULAR IMAGES

Cystic adventitial disease of the popliteal artery

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A 35-year-old woman, who was an aeronautical engineer, presented with a 2-year history of worsening and limiting progressive intermittent claudication in the right leg. She had significant pain in her right calf and was unable to exercise. The patient was otherwise healthy and without any risk factors for peripheral arterial disease. Her ankle-brachial systolic pressure index was 1.1 on the right side. Her toe pressures were 93 in her right and 78 in her left.

An arteriogram at another institution revealed sluggish flow in the tibial arteries on the right with a question of a low-density region slightly compressing the artery. A magnetic resonance image was ordered to further delineate the low-density region (A, Cover).

The patient was taken to the operating room, and the right saphenous vein was harvested. The patient was placed in a prone position, and a popliteal incision was created. A 3.0- × 2.5- × 1.0-cm cyst was identified (B). The cyst was resected and a reversal saphenous interposition was placed, which resulted in normal leg perfusion (C). Other treatment options include enucleation of the cyst contents or resection with patch grafting. A low-powered micrograph revealed a multiloculated cystic process with areas of mucinous cystic degeneration. The patient was released after a short hospitalization and has remained symptom free.

DISCUSSION

A rare entity, cystic adventitial disease is often included on the differential list for claudication symptoms in young men without risk factors. The epidemiology of cystic adventitial disease finds a male/female ratio of approximately 15:1 and an average age in the fourth to the fifth decade.¹ Although cystic adventitial disease can occur in arteries and veins, the popliteal location is by far the most common. However, it is estimated to account for <0.1% of all patients who seek treatment for claudication.²

Approximately 380 worldwide reports of cystic adventitial disease have been made since the first published report in 1947 of this condition.³ The condition is often associated with normal pulses, ankle-brachial indices, and toe pressures, just they were with this patient, making the diagnosis difficult. This case emphasizes the benefit of magnetic resonance imaging and angiography in the diagnosis of cystic adventitial disease, which may only show slight compression of the popliteal artery on computed tomography angiography.

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