SHORT REPORT

Repair of Huge True Aneurysm of Posterior Tibial Artery Using a Posterior Intermuscular Approach

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Introduction

Aneurysms of infrapopliteal arteries are rare. We report a rare true posterior tibial artery aneurysm and its successful aneurysmectomy and autologous saphenous vein graft replacement, through a posterior intermuscular approach.

Case Report

A 75-year-old woman was referred by her family doctor with a bulging pulsatile right calf. This patient had been complaining of mild weakness and tightness in the right calf for years. In the last 3 months, the expansion of the right calf had accelerated. There was no history of trauma or invasive treatment in the right calf. On physical examination, the whole right calf was bulging and pulsatile. There was no sign of limb ischemia, and there was no swelling due to venous stasis. Magnetic resonance imaging (MRI) showed a huge arterial aneurysm. Computed tomography with 3-dimensional imaging (SD-CT) revealed a large right posterior tibial artery aneurysm measuring 7.0 x 7.0 x 12.0 cm (Fig. 1). Arteriography confirmed a true aneurysm of the right posterior tibial artery.

The aneurysm was successfully treated by resection and replacement with an autologous reversed saphenous vein graft. In the prone position, a sigmoid skin incision was made from the right knee down to the medial side of the calf. With separation of the gastrocnemius muscle bundles, the popliteal artery and aneurysm covered by the soleus muscle was exposed. The soleus was partially separated. After clamping of the popliteal artery, the aneurysm was opened longitudinally. The aneurysm appeared to be purely atherosclerotic in origin; there was no sign of infection. The sac was bridged with reversed saphenous vein as an inlay procedure. There were no postoperative complications. Three dimensional CT revealed a patent graft with diminished aneurysmal mass (Fig. 2).

Discussion

Infrapopliteal artery aneurysms are rare, especially true aneurysms. Mönig et al.1 reviewed 15 reported occurrences in 1996, including two of their own. We have since found a further three cases in the literature.2,3

Because of the rarity of this disease there is no standard strategy for treatment. Although we were unable to find a report of rupture, an aneurysm of this size could easily concern us in terms of rupture with associated shock or leg ischemia, particularly if it could not be repaired safely.3,4 Even if other infracutural vessels are patent on angiography, they could be somewhat compressed by such a big aneurysm. So we thought that surgical treatment using saphenous vein graft reconstruction was the best way to save the leg. The posterior intermuscular approach was employed to minimize the possible complications such as nerve or vessel injuries, and it worked very well.5

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Fig. 1. Preoperative computed tomography shows arterial aneurysm occupying the right calf. Three dimensional image reveals its arterial connection.

Fig. 2. Postoperative computed tomography shows repaired aneurysm. Three dimensional image reveals a patent saphenous vein graft.
We conclude that surgical repair of an infrapopliteal artery aneurysm is the treatment of choice even if it is asymptomatic. The posterior intermuscular approach could be the safest method to avoid most complications.

References


