Coronary ostial plasty using femoral artery patch in Takayasu aortitis: A 15-year follow-up study

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Takayasu aortitis is the cause of noninfectious inflammation with unknown etiology and commonly results in vascular luminal narrowing. Occasionally, aortic wall thickness affects the coronary ostia and causes angina pectoris or acute coronary syndrome. Previously, we reported on coronary ostial angioplasty with a superficial femoral artery (SFA) patch in Takayasu aortitis.

A 45-year-old woman with Takayasu aortitis experienced angina pectoris and underwent surgical bilateral coronary ostial angioplasty with an SFA patch. Coronary angiography showed localized stenotic lesions of both the right coronary artery and the left coronary artery ostia without any stenotic lesion of the distal coronary artery. A portion of the SFA was harvested longitudinally and incised to make a rectangular patch. The resected portion of SFA was reconstructed with a vascular prosthesis. After transection of the ascending aorta, aortotomy was extended to the roof of the left coronary artery along a straight line. The patch was sutured such that it created a curtain fold that arched over the roof of the coronary artery, thus ensuring a sufficient orifice for the coronary ostium (Figure 1 and Video 1). A follow-up computed tomography scan, conducted 15 years after surgery showed that both coronary artery ostia were wide in diameter, without calcification or aneurysmal dilatation (Figure 2). The patient remains asymptomatic and requires no further intervention. The patient provided informed consent for the publication of the study data.

In Takayasu aortitis, patients are relatively young and coronary artery stenosis is generally limited to the ostium without distal lesion. Moreover, the long-term patency of aortocoronary bypass grafting has been unsatisfactory because of intimal thickening of the aortic wall. In terms of patch material, saphenous...
vein, pericardium, pulmonary artery, or internal thoracic artery has been used for coronary ostial plasty, although these patch materials and their long-term efficacy are debated. The SFA is usually free from inflammation and it is easy to manage because it possesses adequate tissue affinity for the thickened aortic wall. Furthermore, a long-term solution was desirable in the present case. The superficial femoral artery could potentially be an ideal patch material for coronary ostial plasty in Takayasu aortitis.

References
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FIGURE 2. Computed tomography images obtained 15 years after surgery, during follow-up. A, Longitudinal views through the coronary ostia showing wide diameter. B, Three-dimensional reconstruction image indicating patency of the coronary ostium without calcification or aneurysmal dilatation. LCA, Left coronary artery; RCA, right coronary artery. *Superficial femoral artery patch.