Giant cavernous hemangioma in the aortic root and right atrioventricular groove

Yong Fu, MD,a,b Hao Ma, MD,a and Yingqiang Guo, MDa

Video clip is available online.

A 32-year-old man was referred to our hospital after the incidental detection of a cardiac tumor by echocardiography during a routine medical checkup. Echocardiography showed a large extramyocardial mass (measuring 7.7 × 6.7 cm) attached to the aortic root and the right atrioventricular groove and enclosing the right coronary artery (Figure 1, A and B). This finding was confirmed by means of contrast-enhanced computed tomography (CT) (Figure 2, A and B; Video 1, A).

FIGURE 1. Intraoperative transesophageal echocardiographic images showing a large extramyocardial mass attached to the aortic root and the right atrioventricular groove. A and B, Preoperative echocardiographic images. A, A large extramyocardial mass attached to the aortic root (white arrow) encloses the right coronary artery (red arrow). B, A large extramyocardial mass attached to the right atrioventricular groove (white arrow) encloses the right coronary artery (red arrow). C and D, Postoperative echocardiographic images showing no residual tumor.
We created a median incision and performed extensive tumor resection. Macroscopically, the tumor surface (measuring 10.0 cm × 6.7 cm) appeared dark red and was rooted in the aortic root and the right atrioventricular groove, showing expansive growth (Figure 3, A). After tumor removal (Figure 3, B), transesophageal echocardiography showed no residual tumor, and no right atrial or right ventricular compression (Figure 1, C and D).

Contrast-enhanced computed tomography did not show a residual tumor, and right coronary artery injury was not observed (Figure 2, C and D; Video 1, B). Pathologic examination showed that the tumor was mainly composed of large, thin-walled vessels with cystic dilatation and also showed that abundant red blood cells were present in the vascular lumen (Figure 3, C and D). Immunohistochemical staining showed that the tumor was positive for CD31 and negative for CD34, gut-1, and CAMTA1. Cardiac cavernous hemangioma was therefore pathologically diagnosed (Figure 3, E and F). The clinical course of a giant cavernous hemangioma in the aortic root

**FIGURE 2.** Contrast-enhanced computed tomographic images showing a large extramyocardial mass attached to the aortic root and enclosing the right coronary artery. A and B. Preoperative contrast-enhanced computed tomographic images. A, A large extramyocardial mass attached to the aortic root (white arrow). B, A large extramyocardial mass enclosing the right coronary artery (red arrow). C and D, Postoperative contrast-enhanced computed tomographic images showing no residual tumor and no right coronary artery injury.

and the right atroventricular groove is unpredictable, and surgical excision is considered both diagnostic and curative.¹


Reference