

CARDIOVASCULAR IMAGES

A joint publication of the Department of Radiology and Heart Center

Sudden Hypotension and Transient ST Segment Changes in a Patient with an Aortic Valve Mass

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Clinical History

A 55 year-old woman presented with nausea, vomiting, and abdominal pain. An abdominal CT showed a cystic and solid right ovarian mass. Upon laparotomy, she was found to have an ovarian abscess, and her blood cultures were notable for *Streptococcus pneumoniae*. A trans-esophageal echocardiogram (TEE) revealed a freely moving elliptical mass with smooth borders attached to the right coronary cusp of the aortic valve, consistent with a fibroelastoma. Two days after the TEE, the patient had an episode of sudden and profound hypotension with transient ST elevation in the inferior leads. An emergent transthoracic echocardiogram (TTE) was notable for the absence of the previously visualized mass on the aortic valve, severe right ventricular dilatation and dysfunction, and preserved left ventricular function. A CT was performed to exclude a pulmonary embolus, with surprising results.

Findings

The TEE (Figure 1) showed a 1.4 x 0.7 cm, mobile mass attached to the right coronary cusp of the aortic valve (arrow). A gated cardiac CT (Figures 2, 3) showed total occlusion of the proximal 1.6 cm of the right coronary artery (RCA) (arrowheads). The mass in the right coronary cusp of the aortic valve noticed on TEE was not seen within the aortic root. Instead, there was a short protrusion of tissue retrograde from the ostium of the proximally occluded RCA (arrow). These findings suggested embolization of the aortic valve mass into the RCA. Severe systolic dysfunction and enlargement of the right ventricle was noted.

Discussion

Fibroelastomas are the second most common primary cardiac tumors¹. They are more commonly detected in the sixth decade of life and they appear to be more common in males. The most common location is the aortic valve, which accounts for over a third of the cases, followed by the mitral, tricuspid and pulmonic valves^{1,2}. A significant fraction of fibroelastomas are asymptomatic, and valvular dysfunction is rare. Embolic events such as transient ischemic attacks and stroke appear to correlate with tumors larger than 1 cm, as was the case with our patient. Fibroelastomas can also cause angina, myocardial infarction, pre-syncope, syncope and pulmonary embolism. Although no randomized data exists due to the low prevalence of these tumors, resection is generally indicated in patients with history of embolic events.

REFERENCES

1. Gowda RM; Khan IA; Nair CK; Mehta NJ; Vasavada BC; Sacchi TJ. Cardiac papillary fibroelastoma: a comprehensive analysis of 725 cases. *Am Heart J* 2003 Sep;146(3):404-10
2. Sun JP; Asher CR; Yang XS; Cheng GG; Scalia GM; Massed AG; Griffin BP; Ratliff NB; Stewart WJ; Thomas JD. Clinical and echocardiographic characteristics of papillary fibroelastomas: a retrospective and prospective study in 162 patients. *Circulation* 2001 Jun 5;103(22):2687-93

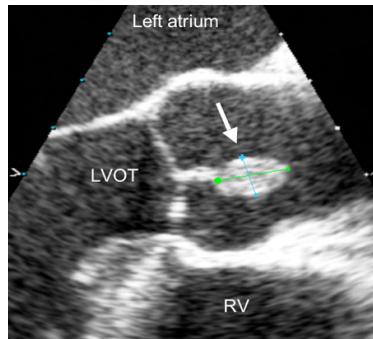


Figure 1.

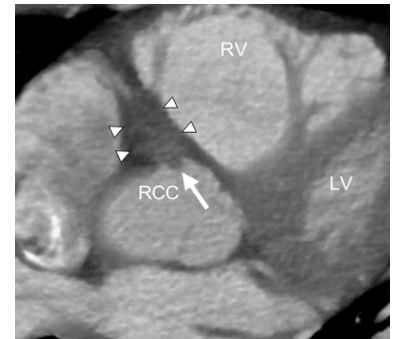


Figure 2.



Figure 3.

Figure 1: TEE showing a 1.4 x 0.7 cm mass attached to the aortic valve leaflets.

Figure 2: Axial maximum intensity projection (MIP) cardiac CTA image showing ostial occlusion of the RCA with a soft-tissue density partially protruding back into the right coronary sinus (RCS).

Figure 3: Sagittal multiplanar reformation (MPR) cardiac CTA image showing complete occlusion of the proximal RCA.

