Case Reports

Cardiac Hemangioma

A Case Report and Discussion

Joseph B. Pigato, MD
Valavanur A. Subramanian, MD
John C. McCabe, MD

A cardiac hemangioma is a rare form of primary cardiac tumor. To our knowledge, only 34 cases of cardiac hemangioma have been discussed in the literature at the time of this writing. We report the case of a patient who presented with 1 episode of exertional dyspnea. The medical history, physical exam, work-up, surgical approach, and outcome are discussed. Other published reports on this topic are also reviewed. ***(Tex Heart Inst J 1998;25:83-5)***

Hemangiomas are common benign congenital vascular lesions. They most often occur in the skin, but are occasionally found in internal organs.[1] Cardiac hemangiomas are quite rare. While the prevalence of primary cardiac tumors is estimated to be between 0.002% and 0.3% at autopsy, 75% of these are benign, and only 5% of all benign primary cardiac tumors are hemangiomas.[2,3] To our knowledge, only 34 other cases of cardiac hemangioma have been described in the literature. We report the case of a patient who presented with 1 episode of exertional dyspnea.

Case Report

A 74-year-old woman presented at our institution 4 weeks after having reported to her primary care physician complaining of shortness of breath while walking up a hill. Her medical history included gastritis, diverticulosis, and benign colonic polyps. During her episode of dyspnea and afterward, she was without chest pain, diaphoresis, nausea or vomiting, syncope, or palpitations. Physical examination revealed normal heart sounds, with no murmurs and no evidence of cardiomegaly. However, cardiomegaly was evident on her chest x-ray. Electrocardiography showed a normal sinus rhythm with nonspecific ST and T wave changes.

The patient was then referred to a cardiologist at our institution who performed transthoracic echocardiography (Fig. 1), which showed a normal left ventricular ejection fraction, moderate left atrial dilatation, and a large rounded echogenic mass within the posterosuperior portion of the heart. The mass appeared to be located predominantly within the left atrium, attached to portions of the interatrial septum and the aortic root. The patient was then admitted to our institution. A computerized tomographic (CT) scan of the chest, abdomen, and pelvis with oral and intravenous contrast showed a 5- x 6-cm mass within the left atrium, a hiatal hernia, and a calcified fibroid uterus. The presence of the left atrial mass was then confirmed by magnetic resonance imaging (MRI) of the chest. The MRI showed a mass in the left atrium that measured 5.6 cm in diameter and appeared to arise from the inferior aspect of the atrial septum and the postero-inferior wall of the left atrium. Its signal quality was homogeneous. A transesophageal echocardiogram revealed a mass within the posterior portion of the left atrium that appeared to deform the interatrial septum as it protruded into the right atrium. The left and right sides of the heart were catheterized; these invasive studies revealed a left ventricular ejection fraction of 60% and normal coronary arteries, but failed to show a right or left atrial filling defect.

The patient was taken to the operating room for elective excision of the cardiac mass, which was believed to be an atrial myxoma. A standard midline sternotomy was performed, and the patient was placed on cardiopulmonary bypass. A mass palpated in the posterior of the left atrium was thought to be either inside the left atrium or within the left atrial wall. A left atriotomy revealed that the mass

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From: *The Section of Cardiothoracic Surgery, Department of Surgery, Lenox Hill Hospital, New York, New York 10021*

Address for reprints: *John C. McCabe, MD, 130 East 77th Street, New York, NY 10021*

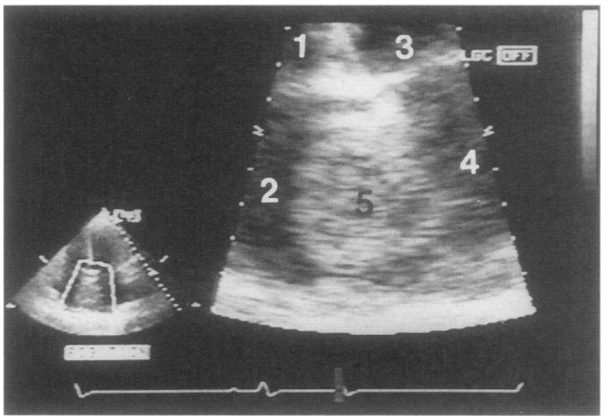

Fig. 1 *Transthoracic echocardiography shows the cardiac hemangioma in the left atrium.*

1 = right ventricle; 2 = right atrium; 3 = left ventricle; 4 = left atrium; 5 = hemangioma

Fig. 2 *This photograph of the divided specimen reveals the size, spongy quality, and well-demarcated border of the cardiac hemangioma.*

arose from the posterior left atrial wall. The left atrial endocardium was smooth, although compressed by the extrinsic mass. Incision of the epicardium overlying the left atrium revealed a mass approximately 10 cm in diameter. We shelled out the mass, which appeared to be a well-encapsulated structure. We sent the mass to pathology for a frozen-section consultation, and it was diagnosed intraoperatively as a cavernous hemangioma (Fig. 2). Several feeding vessels were clipped and a rent in the coronary sinus was repaired. The left atrium was closed, cardiopulmonary bypass was discontinued, and the chest wall was closed in the usual manner. The postoperative course was uneventful and the patient was discharged home on the 7th postoperative day.

The final report from pathology confirmed the cardiac mass to be a hemangioma.

Discussion

The origin of hemangiomas is uncertain; they are thought to be either true neoplasms or hamartomas. Cavernous hemangiomas have large vascular channels, frequently interspersed with small, capillary-type vessels. Upon gross examination, they are red-blue, soft, spongy masses. The lesion, although nonencapsulated, is demarcated by a sharp border. Microscopic examination reveals that cavernous hemangiomas are composed of large, endothelial-lined, blood-containing spaces separated by sparse connective tissue.[1]

Cardiac hemangiomas are quite rare. To our knowledge, only 34 cases have been reported in the literature to date.[4-35] The reported cases include 20 females and 14 males, ranging in age from 6 weeks to 63 years. The majority of the reported cases were identified while working up the patients' symptoms or clinical findings. The most common presentation is exertional dyspnea, but arrhythmias, pseudoangina, and signs of right heart failure are not uncommon presentations. Rarely, the initial presentation includes pericardial effusion, pericarditis, or failure to thrive. Two of the 34 patients were asymptomatic.[4]

Auscultation of such patients often reveals a systolic murmur similar to that associated with pulmonary stenosis.[4] The initial work-up frequently yields an abnormal chest x-ray.[4] Echocardiography has an 81% accuracy rate in detecting cardiac tumors, while CT scans and MRI have had a virtually flawless accuracy rate in exposing this condition. Cardiac catheterization studies (particularly ventricular angiograms) can help to diagnose a cardiac tumor in 40% of cases by revealing an intracavitary filling defect. Coronary arteriography often helps to establish the diagnosis; the classic finding is a vascular blush.[36] In our patient, echocardiography, CT scanning, and MRI all identified the cardiac mass; however, there was no evidence of an intracavitary filling defect and coronary arteriography failed to find a vascular blush.

Preoperative diagnosis of a cardiac hemangioma occurs in a minority of cases. In our case, a cardiac tumor was suspected, but the nature of the tumor was unknown.

All 34 of the patients whose cases are reported in the literature underwent surgery.[4-35] The most common approach was a median sternotomy; a lateral thoracotomy was the 2nd most common approach. Nineteen of these patients were placed on cardiopulmonary bypass. Twenty of the 34 patients underwent total resection, 5 underwent incomplete resection, and 9 underwent simple biopsy after their tumors were judged unresectable. Follow-up information was available for 16 of the 34 patients, and

the surgical outcome was generally favorable. Although 1 patient died on the 1st postoperative day, the remaining patients were alive at last follow-up, which ranged from 2 months to 6 years after operation.[1] Our patient is doing well at 10 months of follow-up.

Conclusion

Cardiac hemangiomas are rare tumors. Their diagnosis is facilitated by echocardiography, followed by contrast-enhanced CT scan or MRI. Cardiac catheterization and arteriography are important to establishing the diagnosis. In addition, these invasive studies provide information on tumor extent, vascular supply, and resectability. The postoperative outcome is generally favorable.

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