A 59-Year-Old Asymptomatic Man With Systolic Murmur and Mediastinal Mass*

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A 59-year-old man came to medical attention due to a heart murmur noted approximately 10 years ago. He gave no history of a cardiac murmur as a child. The patient had been asymptomatic in this time period. More specifically, he denied dyspnea on exertion, chest pain, peripheral edema, palpitations, or syncope. The patient was a lifelong nonsmoker, and had no weight loss, fevers, or sweats. A surface echocardiogram done 3 years ago had shown a cyst-like structure adjacent to the left ventricle.

Physical examination revealed a healthy man with normal first and second heart sounds and a grade 3/6 harsh systolic murmur heard best in the pulmonary area (second left interspace). There was no associated ejection click heard. No lymphadenopathy was noted. Chest radiography revealed a large left anterior mediastinal mass (Fig 1).

What is the diagnosis?

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FIGURE 1. Posteroanterior (left) and lateral (right) chest radiographs show a large left anterior mediastinal mass.
**Diagnosis: Likely pericardial cyst**

A two-dimensional echocardiogram revealed a large mass of cystic nature in the mediastinum that was compressing on the pulmonary artery in the region of the pulmonary valve (Fig 2). This produced moderate obstruction of the pulmonary artery with a mean gradient of 34 mm Hg and peak instantaneous gradient of 51 mm Hg. Chest CT scan showed that the heart was normal in appearance, except for an indentation on the main pulmonary artery by the mass in the left anterior mediastinum that measured 6 cm transverse and 16 cm craniocaudally (Fig 3). The mass appeared cystic, with areas of calcification seen within its wall. No additional mediastinal, hilar, airway, or lung parenchymal abnormalities were identified.

This most likely reflects a pericardial cyst, and given its compression of the main pulmonary artery with a modest gradient across the pulmonary valve, surgical excision was recommended to the patient. The patient declined surgery in favor of continued observation.

**DISCUSSION**

About one third to one half of the patients with mediastinal cysts or tumors are asymptomatic at the time of presentation.\(^1^\)\(^2^\) The absence of symptoms at the time of diagnosis is a good prognostic sign, as approximately 90% of these patients have a benign lesion; whereas in patients who are symptomatic, approximately one half have benign lesions and one half have malignant lesions.\(^2^\) Principal mediastinal tumors and cysts include thymic tumors, germ-cell tumors, lymphomas, foregut duplications or cysts, neural tumors, and pericardial cysts.\(^3^\)

Pericardial cysts, also called pleuropericardial cysts, are developmental anomalies with uncertain origins.\(^4^\) Of these cysts, 70% occur in the right cardiophrenic angle and are situated anteriorly, and the remainder occur in the left cardiophrenic angle but are occasionally seen in superior mediastinum.\(^3^\) Most of the pericardial cysts are discovered as an incidental radiographic finding.\(^4^\)\(^5^\) They may compress the right middle lobe bronchus, causing cough and dyspnea, but this is unusual because they are under low pressure. Isolated cases of right ventricular outflow tract obstruction by pericardial cyst have been reported.\(^6^\) Cases of cardiogenic shock due to right ventricular compression and spontaneous internal hemorrhage within a cyst leading to development of tamponade have been described.\(^7^\)\(^8^\) An unusual case of partial erosion of the superior vena cava has been reported.\(^9^\)

The diagnosis of pericardial cyst may be confirmed

![Figure 2. Transthoracic echocardiogram, in a modified suprasternal view, shows a cystic mass (marked by asterisk) compressing the main pulmonary artery in the region of the pulmonary valve (indicated by arrow). The trileaflet aortic valve is seen below the pulmonary valve.](image-url)
and treated in symptomatic patients at thoracotomy or video thoracoscopy, at which time the pericardial cyst is excised.\textsuperscript{4,10} This course of action removes any doubt about the accuracy of the preoperative diagnosis.\textsuperscript{5} Aspiration of the cyst is safe but carries the risk of anaphylaxis and dissemination in the rare case

\textbf{Figure 3.} Contrast-enhanced chest CT scans showing a cystic mass compressing the main pulmonary artery (top). The mass extends inferiorly to the left ventricular apex (bottom). Note the peripheral calcification in the cystic mass (marked by arrows).
of this being a hydatid cyst. When aspiration is used, there is usually a tendency for the fluid to reaccumulate.\textsuperscript{5} The prognosis following surgical excision is excellent, and there are no reported cases of malignant conversion.\textsuperscript{4}

**REFERENCES**