

CLINICAL VIGNETTE

Pericardial Cyst in a 37-Year-Old Woman

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Case Report

A 37-year-old female with history of IBS, sleep apnea and asthma presents to Cardiology Clinic for pericardial cyst evaluation. She presented to a local hospital emergency room with abdominal pain. Abdominal ultrasound was concerning for a cyst and Chest CT showed a 10 centimeter pericardial cyst overlying the anterior left heart border. She recalled prior episodes of chest pain mostly with exertion, but did not remember developing chest pain when leaning forward or at rest. She denies shortness of breath, palpitations, orthopnea, presyncope or syncope. She recalled a prior echocardiogram more than 10 years ago but not location. Current echocardiogram showed normal left ventricular size and normal left ventricular systolic function (LVEF 55-60%) and no significant valvular dysfunction. A cyst was seen within the anterior pericardial space overlying the right ventricle measuring 10.5 cm by 4.5 cm. Mitral and tricuspid valve and left ventricular outflow tract had normal respiratory variation. Stress echocardiogram was not suggestive of ischemia with low probability of obstructive coronary artery disease.

Discussion

Pericardial cysts are rare benign intrathoracic lesions that typically develop as congenital anomalies. These fluid-filled cavities arise from incomplete fusion of the pericardial sac during embryogenesis.^{1,2} With an incidence of approximately 1 in 100,000 individuals, pericardial cysts account for about 7% of all mediastinal masses.^{1,3}

Pericardial cysts most commonly result from congenital malformations, though occasionally can develop after inflammation, surgery, or trauma.^{1,3} Histologically, these cysts are lined with mesothelial cells and attach to the parietal pericardium without communicating with the pericardial space.¹

The majority of pericardial cysts (>75%) are asymptomatic, discovered incidentally on routine chest imaging.^{3,4} When symptoms develop, they are generally due to compression of adjacent structures. Symptoms may include: chest pain, dyspnea, persistent cough and retrosternal pressure. Rarely, pericardial cysts can lead to more severe complications such as cardiac tamponade, arrhythmias, or obstruction of the right main stem bronchus.^{2,4}

Pericardial cysts are most commonly diagnosed using a number of imaging studies. Chest radiography often reveals a well-defined, round opacity at the cardiophrenic angle.² Computed tomography (CT) may demonstrate a thin-walled, homogeneous, low-attenuation lesion adjacent to the pericardium.^{1,2} Echocardiography may show an echolucent space typically adjacent to the right atrium.² Magnetic resonance imaging (MRI) can provide additional cyst characterization, including relationship to surrounding structures.³

Pericardial cysts have the following distribution: 51-70% at the right cardiophrenic angle, 28-38% at the left cardiophrenic angle, and 8-22% at other mediastinal locations^{2,4}.

Management of pericardial cysts depends on their size, location, and associated symptoms. Asymptomatic cysts have conservative monitoring with regular imaging.^{4,5} Symptomatic or large cysts may need intervention. Options include: aspiration, sclerotherapy and surgery. Percutaneous aspiration is effective but associated with a high recurrence rate, approximately 30% within 3 years.⁴ Sclerotherapy after aspiration may reduce recurrence rates.⁴ Surgical excision is considered the definitive curative treatment. It is performed via thoracotomy, sternotomy, or video-assisted thoracoscopic surgery (VATS).^{4,5}

Patients with pericardial cysts have generally excellent prognosis. Most remain asymptomatic and do not require intervention.⁵ Complications rarely occur, and prompt diagnosis and appropriate management typically have favorable outcomes.

Conclusion

While pericardial cysts are uncommon, they are an important consideration in the differential diagnosis of mediastinal masses. Most pericardial cysts are benign and asymptomatic, with rare potential complications. Imaging advances have improved diagnostic accuracy and appropriate management strategies from conservative monitoring to surgical intervention when necessary. Our patient was referred for an echocardiogram which confirmed the cyst location. There was no tamponade of RV dysfunction and she is being monitored clinically.

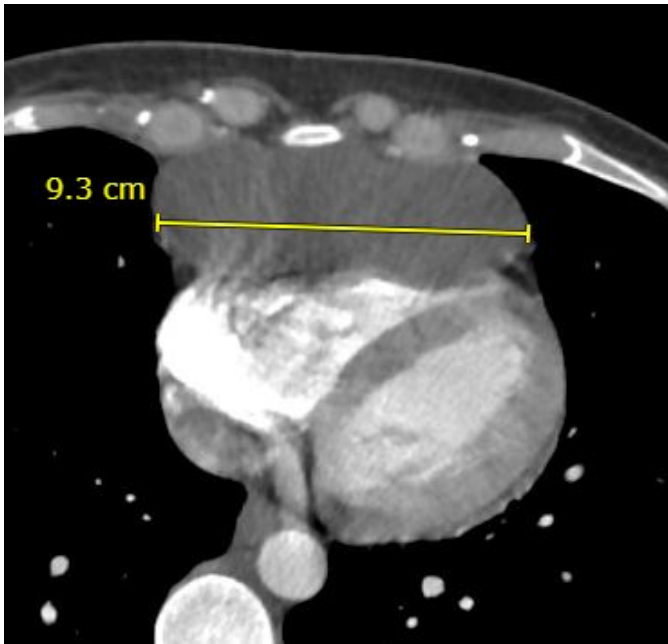


Figure 1. CT with 10 cm pericardial cyst overlying the anterior left heart border.

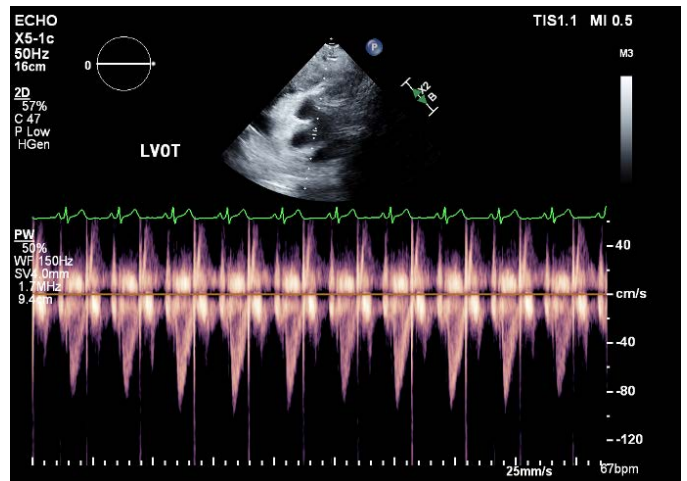
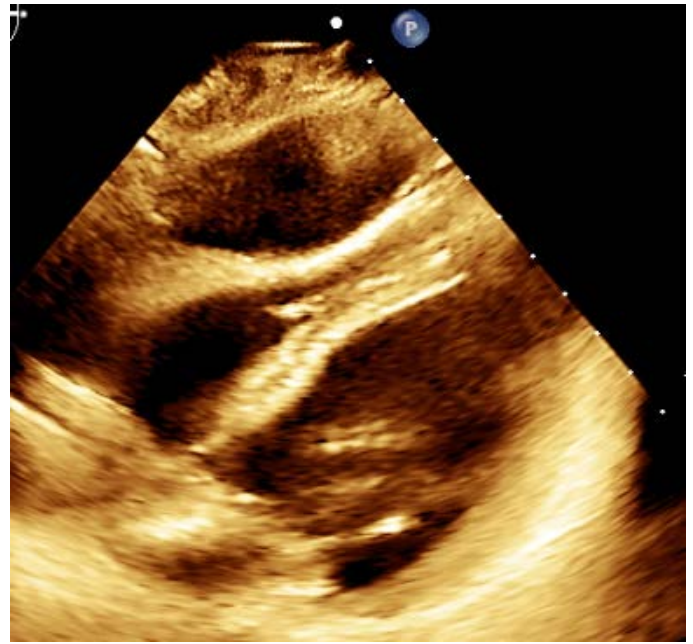


Figure 2. Echocardiogram with large pericardial cyst with no tamponade physiology.

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