

## Videoscopic Resection of a Giant Symptomatic Pericardial Cyst: Case Report

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### ABSTRACT

A 47-year-old woman presented with shortness of breath, chest discomfort, and hoarseness. She was found to have an enlarged cardiac silhouette on plain chest radiography. Computed tomographic scan and magnetic resonance imaging were diagnostic of a giant pericardial cyst. The patient underwent successful videoscopic removal of the cyst with complete resolution of her symptoms.

### INTRODUCTION

Pericardial cysts are usually incidental shadows seen on plain chest films in middle-aged adults. The typical cyst is located in the costophrenic angle, typically on the right side. The cysts contain clear transudate fluid whose density on computed tomographic (CT) scan helps confirm the clinical suspicion. Because pericardial cysts are usually asymptomatic, the treatment is typically observation. Indications for surgery include uncertainty of the diagnosis and/or cardiopulmonary symptoms. The purpose of this report is to describe a case of a giant symptomatic pericardial cyst that was successfully removed with the use of videoscopic technique.

### CASE REPORT

A 47-year-old woman presented with shortness of breath and chest discomfort of recent onset. She had been followed for several years, however, with a diagnosis of cardiomegaly. She had no significant medical or surgical history. Her vital signs were stable and her physical exam was unremarkable. Laboratory studies, including hematologic and blood chemistries, were within normal limits. A plain chest film revealed findings interpreted as cardiomegaly. An echocardiogram demonstrated a very large cystic mass on the left side adjacent to the heart. CT and magnetic resonance images (MRI) were diagnostic of a giant left-sided pericar-

dial cyst (Figures 1 and 2). The patient was advised to undergo surgical resection.

The patient was brought to the operating room and placed in the right lateral decubitus position. A double-lumen endotracheal tube was placed for split-lung ventilation. The left lung was collapsed and the chest entered with a 1-cm incision in the lateral aspect of the lower left chest. The videoscope was inserted and a direct inspection was performed. There was a giant pericardial cyst bulging in the field, requiring needle decompression for further visualization. Several hundred milliliters of clear fluid was evacuated from the cyst. The incision was extended to 3 cm, allowing for insertion of an endograsper and endoscissors. The cyst was completely removed with these instruments and sent to pathology. A 28-French chest tube was placed in the incision.

The patient's recovery was uneventful. She was discharged on the fourth postoperative day. The fluid cytology was normal and the pathology specimen was consistent with a pericardial cyst. Outpatient follow-up was significant for complete resolution of her chest pain, shortness of breath, and hoarseness.

### DISCUSSION

Pericardial cysts usually represent incidental findings during evaluations of the chest. They are usually small and asymptomatic and are simply followed up with periodic radiographic or echocardiographic studies. Occasionally, giant pericardial cysts are reported [Yeh 1967], some of which may cause unusual symptoms of chest pain [McLeod 2002]. In these cases, a thorough cardiac evaluation is necessary to determine if the etiology of the chest pain is related to the heart, the cyst, or some other structure. Depending on the age of the patient, coronary syndromes may require cardiac catheterization. The diagnosis of chest pain related to the cyst, therefore, is a diagnosis of exclusion.

The diagnosis may be suspected when an extracardiac shadow is located in the right costophrenic angle. Atypical locations have been reported and are usually mistaken for other entities [Kutlay 2002, Losanoff 2002]. Confirmation of the diagnosis may be obtained with CT or MRI scans of the chest. The typical findings on these imaging studies include fluid of water density in a cystic mass adjacent to the pericardium. Echocardiography is also helpful in determining the relationship of the cyst to the heart and adjacent structures. As

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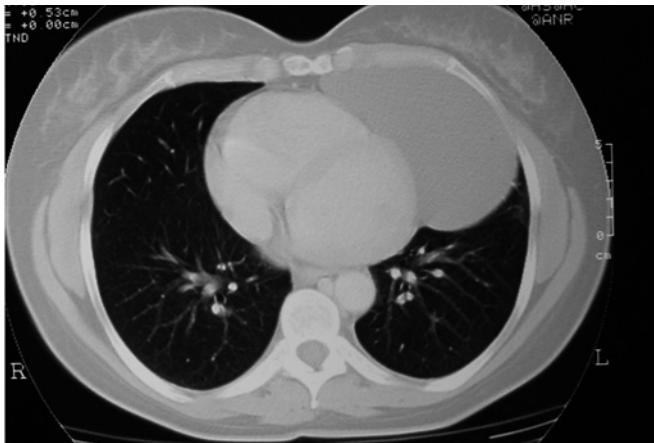


Figure 1. Computed tomographic scan image of giant left-sided pericardial cyst.

demonstrated in this case, echocardiography was the first test that enabled determination that the patient's cardiomegaly was not due to cardiac enlargement per se, but rather to the cyst. If there are any unusual findings on any of the investigational studies or if symptoms are believed to be associated with the mass, then surgical investigation is indicated.

The interventional approach to pericardial cysts includes needle aspiration, open surgical removal, or videoscopic removal. The application of needle drainage has the advantage of being the least invasive procedure. Reaccumulation of the fluid, injury to adjacent structures, and limited opportunity for assessment of pathology (other than by cytology and microbiology) are potential disadvantages of needle drainage. Sclerosis of a pericardial cyst is not advised because occasional cysts may communicate with the pericardium, in which case the sclerosant may result in an acute inflammatory reaction with possible shock. Open resection affords the best exposure and the most complete assessment of the mass. The thoracotomy incision, however, is the most invasive and the most uncomfortable for the patient. Videoscopic removal, on the other hand, affords the best features of being minimally invasive with excellent exposure and rapid recovery. The application of a thoracoscopic technique for pericardial cysts, giant or otherwise, represents a safe and definitive procedure in our and other's experience [Weder 1994, Song 2002]. The technique requires proper placement of a double-lumen endotracheal tube for single-lung ventilation, a small 1-cm incision along the chest wall for initial inspection, and either extension of the incision or creation of a counter incision to accommodate additional endoscopic instruments for resection. We prefer to drain the cyst with an endoscopic needle, thereby improving visualization for complete cyst resection. Using these methods,



Figure 2. Magnetic resonance image of giant left-sided pericardial cyst.

we have found that the exposure is excellent and the results are satisfactory.

In summary, we report the case of a giant symptomatic pericardial cyst that was successfully resected using a thoracoscopic approach. In our opinion, a videoscopic technique represents a safe and definitive approach to this unusual problem.

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