

# A Pericardial Cyst Excision in a Patient Who Underwent Off-Pump Right Anterolateral Thoracotomy With Real Time Transesophageal Echocardiography

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**Abstract:** *A Pericardial cyst is an uncommon benign congenital anomaly in the mediastinum (1). We present asymptomatic case of a large pericardial cyst which is located in the right paracardiac region of patient who had undergone a cystectomy via right anterolateral minithoracotomy through the fourth intercostal space.*

**Keywords:** Mediastinal Cyst, Echocardiography, Transesophageal, Thoracotomy.

## 1. Case Report

A 46-year-old woman was admitted to the hospital for chest pain, dyspnea, and recently persistent cough. The initial general physical examination was normal. We suspected a Mediastinal Cyst in the right cardiophrenic angle after the presentation abnormal chest X ray (Fig 1).

The computerized tomography (CT) scan revealed a large thin-walled, homogeneous, water-attenuation mass cavity, approximately 60x50 mm in size, in the right paracardiac region. In addition to the CT scan, a mass with a density close to that of water was confirmed with preoperative cardiac magnetic resonance imaging (MRI), which showed a contrast failed visualization and a 35x51x35mm of size.

After the induction of anesthesia, a transesophageal echocardiography (TEE) probe was inserted. The standard surgical intervention through the right fourth intercostal space was performed. An echocardiographic examination revealed a cyst structure with pseudomembrane inside (Fig 2A). Under TEE guidance, the 38x52 mm cyst, located in the right paracardiac region, was carefully isolated. There was no adhesion between the mass and cardiovascular components so that the mass was en bloc resected. A TEE examination at the end of the operation showed a successful pericardial cyst excision. (Fig 2B,C). No hemodynamic and respiratory problems were encountered throughout the surgery. At the end of the surgery, the patient was transferred to the intensive care unit (ICU) and connected to the mechanical ventilator. A postoperative chest x-ray was obtained. After three hours from the admittance to the ICU she was extubated successfully. The patient was transferred to the ward on the first postoperative day. On the fourth postoperative day, she was discharged from the hospital uneventfully. A histopathological examination of the resected specimen confirmed the diagnosis of a pericardial cyst.

## 2. Discussion

Pericardial cysts are uncommon in benign mediastinal lesions, with an estimated incidence of 1:100000 (1). Pericardial cysts are generally asymptomatic but there may be symptoms usually due to compression of adjacent organs such as atypical chest pain, dyspnea, and persistent cough. Life threatening emergencies such as cardiac tamponade, obstruction of right main stem bronchus, and sudden death have also been reported (2).

The contrast CT scan and MRI are the diagnostic modalities and can be used for follow-up of the pericardial cysts. TEE and echocardiography are extremely valuable in diagnosis and follow-up of pericardial cysts (2).

The management of pericardial cysts includes observation, percutaneous drainage, and resection. Large size, symptoms, patient concern, uncertainty of malignant potential, and prevention of life threatening emergencies are the main indications for surgical resection of pericardial cysts. The video-assisted thoracic technique is an alternative minimally invasive approach. Although video-assisted thoracoscopic surgery (VATS) is increasingly being performed, its indication is still controversial (3).

Two-dimensional echocardiography is used in making an accurate diagnosis of a pericardial cyst, as well as in follow-up of these patients for the development of possible complications (2). To differentiate the density of the lesion, echocardiography is a very useful tool, but additional imaging by CT or MRI is also necessary (4).

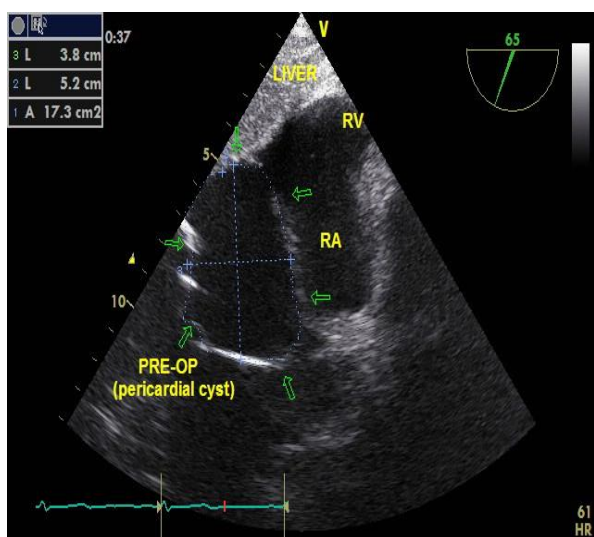
We have reported a rare case of a pericardial cyst that was excised using both a minimally invasive technique with off-pump and TEE confirmation. In this case report the diagnosis, density information and localization of a pericardial cyst was done with TEE successfully. According to our point of view it is superior to other diagnostic methods such as CT and MRI in terms of intraoperative monitoring, and confirmation of the resection of the mass.



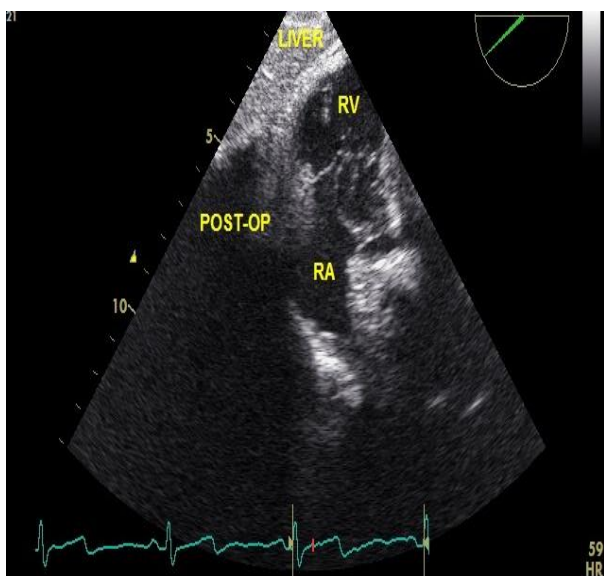
**Figure (Fig) 1:**Preoperative ( PRE-OP) chest x-ray, The arrows indicates a right paracardiac mass



**Figure 2C:** Resected Specimen.



**Figure 2A:** TEE examination (transgastric view). The arrows indicates a right paracardiac mass, containing liquid and membrane. LV, left ventricle; RV, right ventricle; PRE-OP



**Figure 2B:** TEE after resection of the mass. LV, RV, POST-OP, postoperative

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