

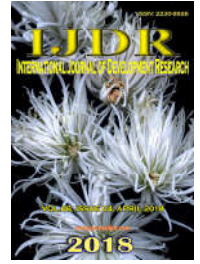


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EPICARDIAL CYST ORIGINATING FROM RIGHT VENTRICLE

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ABSTRACT

We Cystic structures within the pericardial cavity are rare. They are divided into epicardial and pericardial variants. Pericardial and epicardial cysts rarely cause symptoms. Pericardial cysts occur at the rate of 1 person per 100,000. Complete surgical excision is recommended when these cysts are detected. If cysts compress surrounding vital structures, cardiopulmonary bypass (CPB) should also be considered. Epicardial cysts originating directly from the epicardium are seen very rarely. This report describes a case of epicardial cyst in size of 20 cm radially with acute cardiac failure with no previous history of cardiac diseases who was transferred to our hospital in the department of cardio-thoracic and vascular surgery because of hemodynamic instability. Cases of pericardial cyst have been reported by many authors, but the incidence of epicardial cyst originating directly from the epicardium in the pericardial cavity is extremely rare. Herein, we report a case of epicardial cyst that was completely and successfully resected without ECC.

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INTRODUCTION

Epicardial cysts originating directly from the epicardium are seen very rarely. They are thought to result from failure of fusion of one of the mesenchymal lacunae that form the pericardial sac. Seventy five percent of them have no associated symptoms and are usually found incidentally during routine chest x-ray or echocardiography (Lau, 2004 and Patel, 2004). Many authors have reported several cases of pericardial cysts, the incidence of epicardial cysts originating directly from the epicardium is extremely low. Including the first report of Edwards and Ahmad, only 6 cases in total have been reported to date (Edwards 1972; Komeda 1985; Ozasa 1991; Scrofani 2002; Omeroglu 2004; Buyukates 2008). Pericardial cysts and diverticula are infrequent lesions, their recognition

and distinction from more significant abnormalities of the pericardium and contiguous anterior and middle mediastinum is important. Most pericardial cysts can be accurately diagnosed with appropriate plain films, chest fluoroscopy, and cardiac series. Cardiac ultrasound provides additional useful information if the mass approximates the chest wall (Friday, 1973; Felner, 1975). A few pericardial cysts resolve spontaneously, likely from rupture into the pleural space. The rates of spontaneous resolution or complications have not been reported. Cardiac tumours are infrequent clinical entities with an autopsy frequency ranging from 0.001% to 0.030% (Javier, 2010). The occurrence of metastatic cardiac tumours has been reported a 100-fold more commonly than primary lesions (Abushaban, 1993 and Reynen, 1996). Pericardial cysts are an uncommon benign congenital anomaly in the middle mediastinum. They represent 6% of mediastinal masses, and 33% of mediastinal cysts. Other cysts in the mediastinum are bronchogenic – 34%, enteric – 12%, thymic and others – 21% (Lau, 2004).

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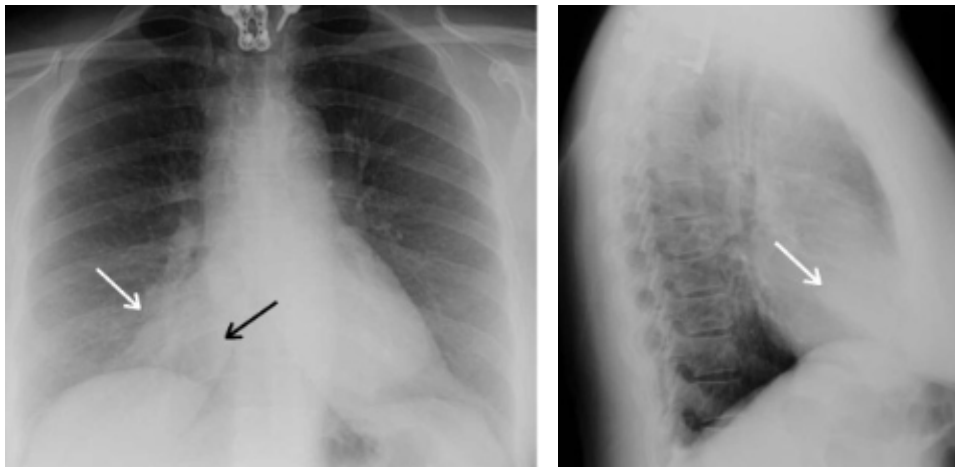


Fig. A. Chest X-ray, abnormal mass lesion at the lateral side of the right ventricle.(from archive radiology)

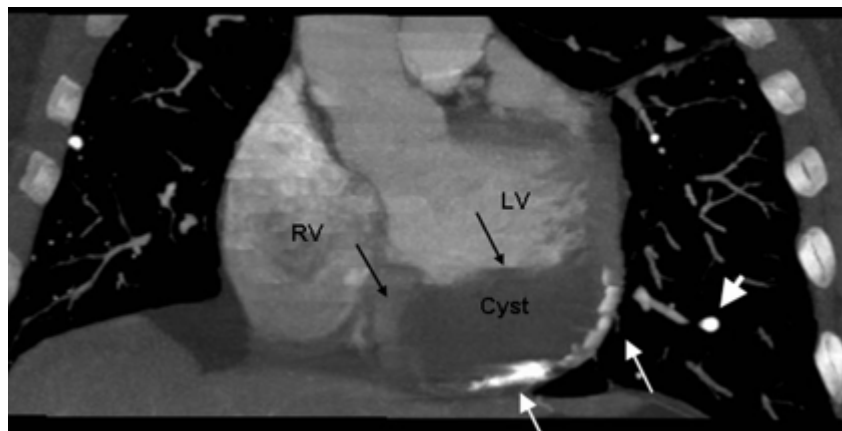


Fig. B. CT. an abnormal mass at the antero-basal (diaphragmic) side of the left ventricle (from archive radiology)



Fig. C. CT. an abnormal mass lesion at the lateral side of the outlet of the right ventricle (from archive radiology)

In the middle mediastinum 61% of presenting masses are cysts⁹. Pericardial and bronchogenic cysts share the second most common etiology after lymphomas (Lau, 2004). The presented case is of a symptomatic pericardial cyst. Three quarters of primary cardiac tumours are benign; approximately half of these are cardiac myxomas, and the rest are lipomas, papillary fibroelastomas, and rhabdomyomas. Among malignant primary cardiac tumour's, the most reported are those histopathologically considered as undifferentiated, followed by angiosarcomas and leiomyosarcomas (Lam, 1993).

Traditionally, cardiac tumours have been identified as curious autopsy findings resulting in a literature paucity of large clinical series, therefore, providing knowledge mostly based on case report collection (Sutsch, 1991). However, recent technological advances in non-invasive imaging modalities such as echocardiography and cardiac magnetic resonance imaging (MRI) have resulted in a rapid acquisition of real-time heart images with high spatial and temporal resolution and an excellent tissue characterization of the tumour (Araoz, 2000; Plana, 2009 and Salanitri, 2008).



Fig. D. Our patients CT. there was evidence of an abnormal mass lesion at the lateral side of the outlet of the right ventricle

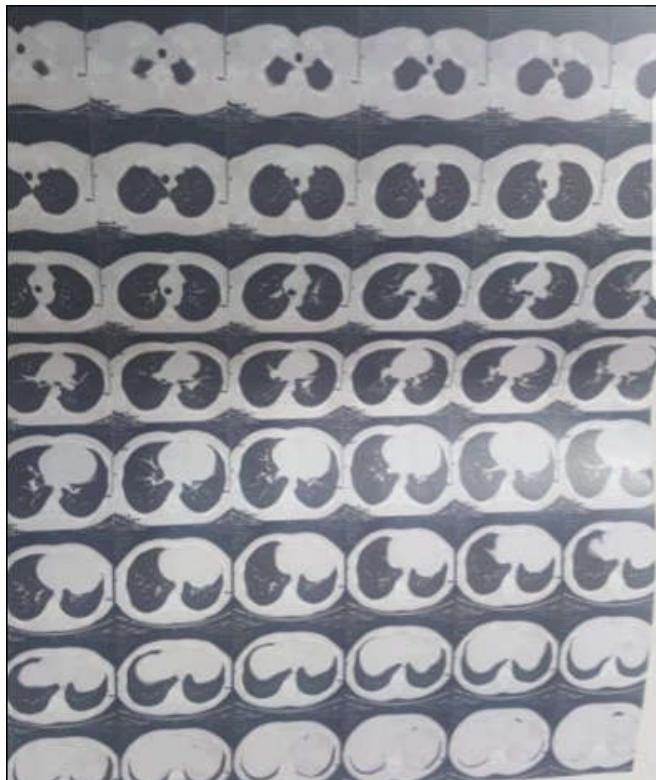


Fig. E. Our patients CT

It is unknown if a size or position of the cyst corresponds to a higher rate of complications. If present, symptoms are usually due to compression of adjacent organs and include atypical chest pain, dyspnoea, and persistent cough (Patel, 2004). Cardiac tamponade, obstruction of right main stem bronchus, and sudden death are the life-threatening emergencies that

have been reported (Patel, 2004). Cardiac tamponade is usually due to intra-pericardial rupture of the cyst, although tamponade due to spontaneous hemorrhage into the cyst has also been reported (Patel, 2004 and Borges, 1997). Other reported complications include right ventricular outflow obstruction, inflammation and infection, pulmonary stenosis, partial erosion into adjacent structures, atrial fibrillation, and congestive heart failure (Patel, 2004; Komodromos, 2004; Shiraishi, 2000 and Hoque, 2005). There have been about twenty reported cases of pericardial cysts presenting before the age of eighteen (Patel, 2004). Seventy percent of them are located at the right cardiophrenic angle, 22% in the left, and the rest are in the posterior or anterior superior mediastinum (Lau, 2004). The size varies from 2 to 28cm².

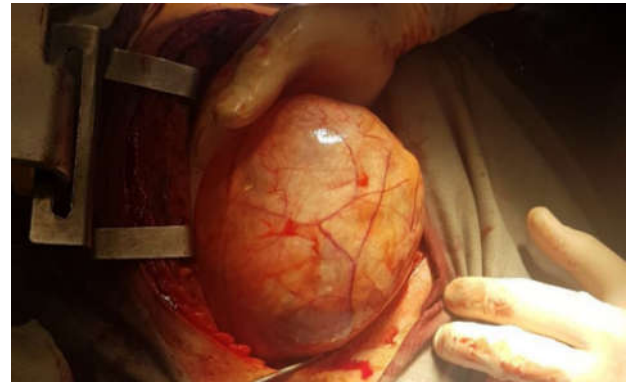


Fig. 1. Intraoperative image of 20 cm epicardial cyst



Fig. 2. Pericardial cyst with its pedicle

However, difficulties in diagnosis may arise in two settings:

- When the appearance of the chest radiograph is unusual, that is, the lesion does not lie in the right or less frequently the left anterior cardio phrenic angle; on

- When a presumed pericardial cyst is found in a symptomatic patient.

Conclusions

Pericardial and epicardial cysts rarely cause symptoms. Seventy five percent of them have no associated symptoms. Pericardial cysts occur at the rate of 1 person per 100,000. originating directly from the epicardium are seen very rarely. They are thought to result from failure of fusion of one of the mesenchymal lacunae that form the pericardial sac. Most pericardial cysts can be accurately diagnosed with appropriate plain films, chest fluoroscopy, and cardiac series. Cardiac ultrasound provides additional useful information if the mass approximates the chest wall. Cardiac magnetic resonance imaging (MRI) have resulted in a rapid acquisition of real-time heart images with high spatial and temporal resolution and an excellent tissue characterization of the tumour. Symptoms are usually due to compression of adjacent organs and include atypical chest pain, dyspnoea, and persistent cough. Cardiac tamponade, obstruction of right main stem bronchus, and sudden death are the life-threatening emergencies that have been reported. If cysts compress surrounding vital structures, cardiopulmonary bypass (CPB) should also be considered. We report herein a case of epicardial cysts that were successfully excised.

Case

A 30-year old man was admitted for evaluation of a mediastinal mass shown by echocardiography to be adjacent to both ventricles. Computed tomography (CT) On CT. there was evidence of an abnormal mass lesion at the lateral side of the outlet of the right ventricle. The CT number of the mass was 25, suggesting cystic lesion (Fig D, E). Substantially healthy 30-year-old man, without hereditary for ischemic heart disease, last 16 months symptoms of fatigue and retrosternal pain, cough and air hunger with the normal ECG, underwent echocardiography, requesting cardiac surgery consultation, and review of echocardiography and CT chest of the patient as shown certain individuals mediastinal mass. During operation a mass originating from the epicardium was diagnosed as an epicardial cyst. The patient accepted for open surgery without ECC, with preoperative diagnosis of epicardial cyst (Fig 1, 2). The patient was circulatory and respiratory stable with normal blood gas postoperative and discharged 72 hours after surgery.

Disclosure: The authors declare no conflicts of interest.

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