

A Mediastinal Lesion Rarely Seen in Childhood: Pericardial Cyst

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Özet

Perikardiyal kistler uniloküler, dış duvarı mezotelyal veya endotelyal hücrelerden oluşan düz duvarlı konjenital benign kistlerdir. Tüm mediastinal lezyonlar arasında % 6-7 sıklıktadır. Çoğunlukla kardiyofrenik açıda görülmektedir. Genellikle asemptomatik olmakla birlikte hastaların %20 kadarında non spesifik semptomlar olabilmektedir. Tanıda PA akciğer grafisi, ekokardiografi ve BT en sık kullanılan yöntemlerdir. Difüzyon ağırlıklı MRG de önerilmiştir. Tedavide cerrahi eksizyon ön planda olup düşük morbidite ve mortalite oranları ile uygulanmaktadır. Cerrahi yapılmayan olgularda hemoraji, kistin spontan rüptürü ya da kistin enfekte olması gibi komplikasyonlar görülebilmektedir.

Anahtar kelimeler: Perikardiyal kist, Çocukluk çağı, Mediastinal lezyon

Abstract

Pericardial cysts are smooth-walled congenital benign cysts which are unilocular with an external wall comprised of mesothelial or endothelial cells. They account for 6-7% of all mediastinal lesions. They are usually found in the costophrenic angle. Although they are generally asymptomatic, up to 20% of the patients may have nonspecific symptoms. PA chest x-ray, echocardiography and CT are the most commonly used diagnostic methods. Diffusion-weighted MRI has also been suggested. Surgical excision is at the forefront in treatment, being performed with low morbidity and mortality rates. In cases for which a surgery cannot be performed, complications such as hemorrhage, spontaneous rupture of the cyst or infected cyst may develop.

Keywords: Pericardial cyst, Childhood, Mediastinal Lesion

Introduction

Pericardial cysts are congenital benign cysts which were defined by His in 1881. They are thought to result from incomplete closure of distal, ventral and parietal recesses of the pericardium (1). They account for 6-7% of all mediastinal lesions and its incidence is approximately 1 in 100,000 (2). These lesions which are usually localized in the costophrenic angle are thin-walled lesions with clear fluid inside whose diameters range from 3 to 30 cm. These cysts which are usually asymptomatic are diagnosed incidentally. However, up to 20% of the cases are symptomatic at the time of diagnosis (3). Surgical excision is at the forefront in treatment of pericardial cysts. It can be performed with low morbidity and mortality rates by using minimally invasive techniques (3, 4, 5). In this manuscript, a case which was diagnosed with pericardial cysts when admitted with a complaint of frequent pulmonary infection and then underwent surgical is reported.

Case Report

A 6 year-old male patient admitted to Pediatric Chest Diseases Outpatient Clinic due to frequent pulmonary infections. On the thorax CT scan (figure 2) taken after increased opacity was detected on PA chest x-ray (figure 1), a fluid-density lesion with dimensions of 4x3 cm was detected in adjacency to anterior part of the heart in the right paracardiac region and it was suggested to perform an USG or MRI in order to determine whether the lesion was of a cystic nature. On thoracic USG, a cystic lesion with dimensions of 36x18 mm was observed in the right supradiaphragmatic region and this appearance was interpreted as a pericardial recess. The

contrast-enhanced thoracic MRI and pulmonary angiography examinations, a cyst with approximate dimensions of 55x35 mm which exhibited hypointense signal characteristics on T1 and hyperintense on T2, did not show diffusion restriction and exhibited any septation in the solid component was observed in adjacency to the pericardium and it was primarily interpreted as a pericardial cyst. The patient was consulted to as for cardiac evaluation. At admission, patient's general condition was fine, he was conscious and had stable vital signs. On cardiac examination; the heart sounds were rhythmic, with no additional sound or murmur heard. Femoral pulses were palpated bilaterally equal. No arrhythmia was detected in electrocardiographic examination. On transthoracic echocardiography, a supradiaphragmatic solid cystic structure with dimensions of 52x36 mm which was hypoechoic, avascular and did not exhibit any flow pattern was observed between layers of the pericardium in right posterolateral site of right atrium. No evidence of tamponade or clinically significant compression was detected in the heart. This structure was primarily evaluated to be consistent with a pericardial cyst. The patient referred to department of cardiovascular surgery of our hospital underwent surgical extirpation. The histopathological examination of the cyst was evaluated as benign simple pericardial cyst. In the late-term control visit six months after the operation, all parameters, including transthoracic echocardiography, were determined to be normal.

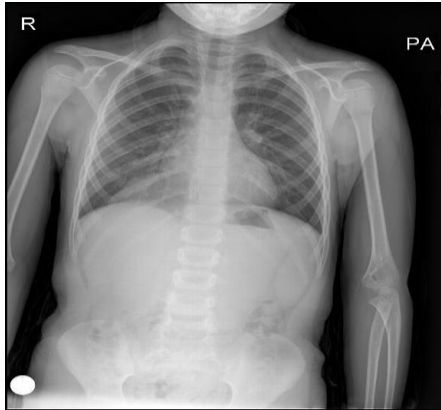


Figure 1. PA Chest x-ray of the patient



Figure 2. Thoracic CT examination of the patient

Discussion

Pericardial cysts are unilocular, smooth-walled cysts with an external wall comprised of mesothelial or endothelial cells (6). They account for 2.2% of mediastinal tumors and cysts in childhood. Their potential to transform into malignancy is low (3, 6). Pericardial cysts are usually encountered as settled on the diaphragm in the cardiophrenic angle. Of these cysts;

70% are located in the right cardiophrenic angle, 22% in the left cardiophrenic angle and 8% in various sites of the mediastinum (3). Although majority of the patients are asymptomatic, up to 20% may develop nonspecific symptoms such as cough, chest pain, dyspnea and palpitations (3, 7).

PA chest x-ray, echocardiography and CT are the most commonly used methods for diagnosis of pericardial cysts. Diffusion-weighted MRI has also been suggested as a noninvasive diagnostic method (7). While they exhibit anattenuation similar to fluid on CT, they exhibit hyperintense appearance on T2-weighted images and hypointense appearance on T1-weighted images on MRI. When the protein content in the fluid within the cyst density on CT may be enhanced, signals in T2-weighted images may be decreased and signals on T1-weighted images may be increased on MRI (8).

Pericardial cysts should be differentiated from solid tumors such as angioma, lipoma, neurogenic tumors, sarcoma, lymphoma, and metastatic and bronchogenic tumors, as well as from granulomatous lesions and abscess. Bronchogenic cysts and foregut cysts also are lesions that should be differentiated from pericardial cyst. Furthermore, diaphragmatic and hiatal hernias and aneurysms of the heart and great veins can also mimic the appearance of a pericardial cyst (9).

Surgical excision is at the forefront in treatment, being performed with low morbidity and mortality rates. Thus, complete excision of the cyst is recommended even in asymptomatic cases (3). In excision of cysts, minimally invasive techniques also are performed. Transtracheal or percutaneous cyst aspirations have been tried as methods alternative to surgery but they have not been widely accepted due to recurrence of cysts and, hence, increased morbidity (5). In cases for which a surgery cannot be performed, some complications due to enlargement of the cyst may develop. These complications include hemorrhage, hemodynamic instability and cardiac tamponade due to spontaneous rupture of the cyst, cardiac herniation and infected cysts (3, 5, 10).

In conclusion, surgical approach can be safely performed with low recurrence, morbidity and mortality for definitive diagnosis and curative treatment of pericardial cysts which are mediastinal lesions rarely seen in pediatric age group.

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