Idiopathic Chronic Hemorrhagic Pericarditis

Citation

Abstract
Pericardial diseases imitate more common cardiac diseases and therefore can be difficult to diagnose. We describe a case of idiopathic chronic hemorrhagic pericarditis. A pragmatic clinical and scientific approach for improved diagnosis of pericardial diseases is outlined.

INTRODUCTION
Recent advances in the study of pericardial disorders have opened new diagnostic windows to the heart through the pericardial sac(1). Diseases of the pericardium can be indolent or have a sudden onset. They may be primary, but more often are secondary to a systemic disease or previous therapy(2). Effective management of pericardial diseases requires an understanding of the pathophysiology and natural history of each disease entity, knowledge of the individual patient, and realistic application of therapy(2).

CASE REPORT
Our case was a 62-year-old male. He had been suffering from dyspnea for 3 months. He had been evaluated at another health facility and referred to our clinic for surgery with a diagnosis of pericardial cyst. His transthoracic echocardiographic examination revealed a cystic mass of 9.7x4.5 cm that compressed the right ventricle from outside, consisted of some solid components and originated from the free margin of the right ventricle. Thorax CT showed an encysted collection of fluid with diffusely thickened wall, located to the right anteroinferior of the heart, 4x9 cm in diameter, and fusiform in shape. This loculated pericardial fluid was compressing the right atrium and the right ventricle. Moreover, diffuse thickening of pericardium was prominent. In differential diagnosis, pericardial cyst or pericarditis was also considered (Figure 1). Pleural fluid was also present in the left hemithorax.

PPD(purified protein derivative of tuberculin)test was negative. There was no trauma anamnesis. No pathologic finding was available concerning the possible diagnoses of hydatid cyst and neoplastic involvement. Preoperatively his functional capacity was in New York Heart Association(NYHA) functional class II-III. He underwent operation.

We approached via median sternotomy. We freed the pericardium in this following order: first from the aorta and pulmonary artery, including the left ventricular outflow tract. Pericardial cyst invaded the anterior wall of the right ventricle and pericardium was extensively adhering and thickened. Following the incision and drainage of the cyst, due to the invasion of the right ventricle by the posterior
cystic wall; cannulation of right femoral vein, superior vena cava and ascending aorta was performed and cardiopulmonary bypass initiated (Figure 2).

**Figure 2**
Figure 2

Total excision of the cyst was performed. Right ventricular wall has thickened and was like parchment paper in quality. A polytetrafluoroethylene patch of 4x5 cm was inserted into the anterior wall of the right ventricle (Figure 3).

**Figure 3**
Figure 3

There was no major bleeding from the pericardial edges, nor was there evidence of phrenic nerve injury either perioperatively or postoperatively. The mechanical ventilation time was 8 hours. The volume of blood transfused was 2 units. The quantity of mediastinal drainage was 500 cc. The stay in the intensive care unit was 2 days. The hospital stay was 7 days. Postoperative diagnosis was made in a histologic section of the pericardium.

Hemorrhagic regions containing components of fibrosis and cholesterol clefts were observed in the pericardial wall (Hematoxylin and eosin stain, 40x magnification) (Figure 4).

**Figure 4**
Figure 4

During the 1st postoperative month, the functional capacity of our patient improved dramatically and he was in NYHA functional class I. Control echocardiogram postoperatively identified that cystic image anterior to the right ventricle disappeared and the patch inserted apically could be visualized (Figure 5).

**Figure 5**
Figure 5

**DISCUSSION**

Specific diagnosis of inflammatory, postinflammatory, autoreactive, or neoplastic pericardial disease can now be
made by epicardial and pericardial biopsy and by cytologic analysis of the pericardial fluid(1). New diagnostic techniques have improved the sampling and analysis of pericardial fluid and allow a comprehensive diagnostic approach(1). Noninvasive cardiac imaging techniques have made a striking impact on the evaluation and management of pericardial disorders(1).

Deciding on the extent of diagnostic evaluation in the individual patient requires good clinical judgment based on careful evaluation of the risk-benefit ratio of the planned diagnostic and therapeutic options(3). Echocardiography, thoracic computed tomography, and magnetic resonance imaging are three valuable imaging techniques for the management and pathophysiologic understanding of cardiac tamponade and constrictive pericarditis. However, these techniques should not be used independently from clinical findings(5). Magnetic resonance imaging, computed tomography, and transesophageal echocardiography are valuable in the assessment of pericardial thickness in suspected cases of constrictive pericarditis. Filling dysfunction associated with constrictive pericarditis is well demonstrated by Doppler flow velocity recordings of intracardiac flow jets, and pulmonary and hepatic venous flow streams. Magnetic resonance imaging and computed tomography are the techniques of choice in the recognition of unusual disorders such as pericardial cysts, tumors invading the pericardium, and congenital absence of pericardium (4). Echocardiography and computed tomography are useful for the diagnosis of pericardial cysts. Diagnosis of cardiac tamponade is aided by echocardiography, and Doppler echocardiography can help diagnose constrictive pericarditis(4). For the hemorrhagic pericardial effusion, echocardiography displayed numerous linear bands coursing across the pericardial space. Recognition of this characteristic image may predict that an effusion is loculated, and perhaps hemorrhagic, so that surgical drainage will offer the most definitive treatment(4). Invasive procedures should be limited mainly to patients in whom therapeutic intervention is necessary(3).

Advantages and problems of pericardectomy in constrictive disease are noted, and finally, a pragmatic clinical and scientific approach for improved diagnosis of pericardial diseases is outlined(1).

In conclusion; pericardial diseases imitate more common cardiac diseases and therefore can be difficult to diagnose(2). Noninvasive imaging aids not only in the diagnosis of pericardial diseases, but also in the guidance of optimal therapy(4).

CORRESPONDENCE TO
Doç. Dr. Ufuk YETKİN 1379 Sok. No: 9,Buğ Apt. D: 13 35220, Alsancak – İZMİR / TURKEY Tel: +90 505 3124906 - Fax: +90 232 2434848 e-mail: ufuk_yetkin@yahoo.fr

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Author Information

Ali Gürbüz
Clinical Chief in CVS, Assoc. Prof., Department of Cardiovascular Surgery(CVS), İzmir Atatürk Training and Research Hospital

Ufuk Yetkin
Clinical Deputy Chief in CVS, Assoc. Prof., Department of Cardiovascular Surgery(CVS), İzmir Atatürk Training and Research Hospital

Cengiz Özbek
Clinical Deputy Chief in CVS, Assoc. Prof., Department of Cardiovascular Surgery(CVS), İzmir Atatürk Training and Research Hospital

Orhan Gökalp
Resident in CVS, Department of Cardiovascular Surgery(CVS), İzmir Atatürk Training and Research Hospital

?smail Yürekli
Chief Resident in CVS, Department of Cardiovascular Surgery(CVS), İzmir Atatürk Training and Research Hospital

Aylin Çalış?
Chief Resident in Clinical Pathology, Department of Cardiovascular Surgery(CVS), İzmir Atatürk Training and Research Hospital

Nursen Postacı?
Clinical Deputy Chief in Cardiology, Department of Cardiovascular Surgery(CVS), İzmir Atatürk Training and Research Hospital

Murat Ye?il
Clinical Chief in Cardiology, Assoc. Prof., Department of Cardiovascular Surgery(CVS), İzmir Atatürk Training and Research Hospital