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CASE REPORT

Constrictive Pericarditis in a 42-Year-Old Female with a History of Tuberculosis

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ABSTRACT

A 42-year-old female with a history of tuberculosis treated with anti-tubercular therapy (ATT) presented with progressive abdominal distension for 7 years and shortness of breath for 2 years. Clinical evaluation, including echocardiography, revealed signs of constrictive pericarditis (Septal bounce). The patient underwent successful pericardiectomy, with marked improvement in cardiac function and resolution of ascites postoperatively. Histopathology confirmed fibrosed pericardial tissue, and microbiological studies were negative for active tuberculosis. This case highlights the importance of considering constrictive pericarditis along with ascites and deranged liver function as a long-term complication in patients with a history of tuberculosis.

KEYWORDS

• Tuberculosis • Pericarditis • Ascites

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INTRODUCTION

Constrictive pericarditis is a condition where the pericardium becomes thickened and fibrotic, restricting the heart's ability to fill during diastole. It is often seen as a sequela of infections such as tuberculosis, particularly in endemic areas. This case report presents a patient with constrictive pericarditis years after completing treatment for tuberculosis, emphasizing the importance of long-term follow-up and timely surgical intervention.

CASE PRESENTATION

Patient Information:

This is a 42 years old female presented with chief Complaints of progressive abdominal distensionfor 7 years,shortness of breath for 2 years. History of tuberculosis treated with ATT for 9 months, 7 years ago.

On Examination:

Patient is lethargic, dyspnoic, tachypnoic, ill built

- Respiratory system: bilateral basal region breath sounds are decreased.
- Pedal edema is present bilaterally
- Abdominal Examination: Distended abdomen with a palpable thrill, suggestive of ascites.
- Cardiac Auscultation: High-pitched, early diastolic murmur.

Investigations:

- 2D Echocardiogram (Preoperative Findings:
- Biatrial enlargement
- Septal bounce (Suggestive of Constrictive Physiology)
- Annulus reversus
- Moderate mitral regurgitation (MR)
- Mild tricuspid regurgitation (TR)
- Inferior vena cava (IVC) dilation with inspiratory collapse <50%
- Pericardial calcification
- Left ventricular ejection fraction (LVEF): 55%
- The findings were consistent with constrictive pericarditis, likely due to previous tuberculosis.

Treatment:

The patient underwent pericardiectomy to relieve the pericardial constriction and restore normal cardiac function. Preoperative tapping of 1 litre of ascitic fluid done.

Post-operative Course:

- Postoperative Care:
- Required ionotropic support for 3 days due to low cardiac output post-surgery.
- Paracentesis was performed for 5 consecutive days to manage ascites.
- Surgical drains were removed on postoperative days 2 and 5.
- Echocardiogram Postoperatively:
- At discharge: Improved ejection fraction.
- At 3-month follow-up: No septal bounce, no annulus reversus, and >50% inspiratory collapse of the IVC, suggesting improvement in right-sided heart function.

Liver function test also improved post operatively

Pathology and Microbiology:

- Histopathology: Hyalinized and fibrosed pericardial tissue, consistent with chronic constrictive pericarditis.
- Microbiological Studies:
- GeneXpert: No evidence of tuberculosis bacilli.
- Pus culture: No bacterial growth (aerobic).
- Ziehl-Neelsen stain: Negative for acid-fast bacilli (AFB), ruling out active tuberculosis.

DISCUSSION

The normal pericardium minimally impedes ventricular distensibility at normal cardiac operating volumes. In CP, pericardial non-compliance creates a stiff ventricular-pericardial unit, leading to increased diastolic pressures and more rapid rise in ventricular pressures for a given venous return. The noncompliant pericardium limits ventricular relaxation and determines ventricular diastolic pressure, resulting in elevated, equalized diastolic pressures in all chambers. Clinically, this presents predominantly as right-sided

congestion (jugular venous distention, edema, and ascites). Elevation in pulmonary capillary wedge pressure and a decreased cardiac output response to exercise (given inadequate ventricular filling) results in dyspnea and effort intolerance, although frank pulmonary edema is less common than typical systolic heart failure.[1-3]

Tachycardia occurs reflexively due to decreased cardiac output. Other signs and symptoms of decreased cardiac output include increased fatigue, hypotension, altered mental status, dyspnea, and tachypnea. Signs of active pericarditis may also ensue, including fever, pleuritic substernal chest pain, and a pericardial friction rub. Constrictive pericarditis is a recognized long-term complication of tuberculosis[4]. In this case, the patient presented with classic signs of right heart failure and symptoms of constrictive pericarditis, including abdominal distension (due to ascites) and dyspnea. The characteristic findings on echocardiogram, such as septal bounce and annulus reversus, were key in diagnosing constrictive pericarditis. Despite the patient's history of tuberculosis, microbiological tests were negative for active infection, highlighting the chronic, fibrotic nature of her condition.

Pericardiectomy was first performed and reported in 1913, and is regarded as a curative measure for CP. Although partial pericardiectomy has been recommended in some patients, complete pericardiectomy remains the definitive therapy and a potential cure in most CP patients as it allows the heart to function more normally by removing the restrictive pericardial tissue[5]. In our patient we have performed partial pericardiectomy as the calcification was very severe and adhered to myocardial tissue. Calcification at the base of heart is not touched. Pericardiectomy done from right phrenic to left phrenic nerve. The patient's postoperative recovery and follow-up echocardiograms demonstrated significant improvement, with resolution of constrictive physiology. And there is improvement in liver function tests. Complete resolution of ascites in 6 months.

CONCLUSION

This case emphasizes the need to consider constrictive pericarditis as a potential long-term complication in patients with a history of tuberculosis, even years after treatment. Early diagnosis and surgical intervention through pericardiectomy can significantly improve patient outcomes. Careful postoperative follow-up is essential to monitor for resolution of symptoms and improvement in cardiac function.

KEY POINTS

- Tuberculosis is an important cause of constrictive pericarditis, particularly in endemic areas.
- Echocardiographic features such as septal bounce and annulus reversus are crucial for diagnosing constrictive pericarditis.
- Pericardiectomy is the treatment of choice and can lead to significant improvement in symptoms and cardiac function.

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