PERICARDIAL TUBERCULOSIS: AN ESSENTIAL DIFFERENTIAL DIAGNOSIS IN PERICARDITIS

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ABSTRACT

Pericardial tuberculosis is a rare and potentially fatal form of extrapulmonary manifestation of tuberculosis, representing a diagnostic challenge, especially in endemic regions. This article reviews its clinical, epidemiological, and diagnostic aspects, based on literature published between 2012 and 2024. Pericardial infection with Mycobacterium tuberculosis occurs by hematogenous or lymphatic dissemination and can progress to cardiac tamponade or constrictive pericarditis. The clinical picture is insidious, with symptoms such as chest pain, dyspnea, and prolonged fever. Diagnosis requires clinical correlation and tests such as echocardiogram and pericardial fluid analysis, with elevated ADA being a useful marker. Treatment follows the standard tuberculosis regimen, and may include corticosteroids and invasive procedures in severe cases. Early recognition is essential to reduce the morbidity and mortality associated with this condition.

Keywords: Pericardial tuberculosis. Pericarditis. Cardiac tamponade. Differential diagnosis. Public health.

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INTRODUCTION

Tuberculosis (TB) remains a serious global public health problem, especially in developing countries. Among its various extrapulmonary presentations, pericardial tuberculosis represents a rare but potentially fatal form that defies clinical and laboratory diagnosis. It is estimated that pericardial tuberculosis occurs in approximately 1% to 4% of patients with pulmonary TB, accounting for up to 7% of cases of cardiac tamponade.[1]

This extrapulmonary form results from hematogenous or lymphatic dissemination of *Mycobacterium tuberculosis* to the pericardium, and can rapidly progress to cardiac tamponade or constrictive pericarditis if not diagnosed and treated early. Delay in diagnosis, often caused by low clinical suspicion and limitations of diagnostic methods, contributes to a high rate of morbidity and mortality.[2]

OBJECTIVE

The objective of this chapter is to review the clinical, epidemiological, and diagnostic aspects of pericardial tuberculosis, emphasizing its importance as a differential diagnosis in cases of pericarditis, especially in TB-endemic regions.

METHODOLOGY

An integrative review of the national and international scientific literature was carried out, using the terms "tuberculous pericarditis", "pericardial tuberculosis" and "diagnostic approach". Articles published between 2012 and 2024 that addressed the epidemiology, pathophysiology, diagnosis, and treatment of pericardial tuberculosis were selected.

EPIDEMIOLOGY AND PATHOPHYSIOLOGY

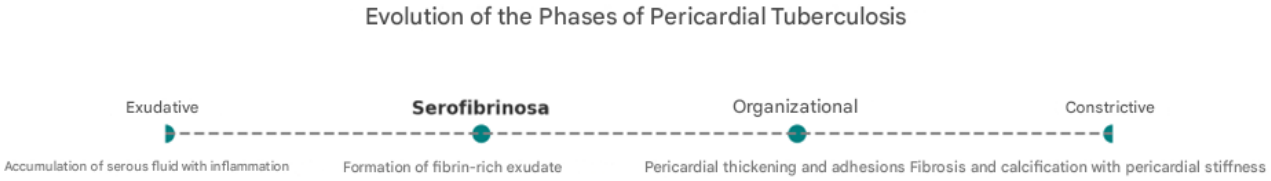
Pericardial tuberculosis is more prevalent in areas of high TB endemicity and in immunosuppressed individuals, especially those with HIV. Infection usually occurs by direct dissemination from infected mediastinal lymph nodes, or by hematogenous route. The inflammatory response in the pericardium can lead to exudate formation, pericardial thickening, fibrotic adhesions, and calcifications.

The clinical course occurs in four phases: exudative, serofibrinous, organizational, and constrictive.[3] Diagnosis in the early stages can prevent progression to pericardial constriction, a serious complication that may require pericardiectomy.

CLINICAL PICTURE

Clinical symptoms are usually insidious, with pleuritic chest pain, dyspnea, prolonged fever, and dry cough. Signs of hemodynamic compromise such as jugular turgide, hypotension, and muffled heart sounds may indicate cardiac tamponade.

Figure 1. Evolution of the clinical manifestations of pericardial tuberculosis in the different phases.



DIAGNOSIS

The diagnosis of pericardial tuberculosis is challenging. Echocardiography is essential to identify pericardial effusion and signs of tamponade. Analysis of pericardial fluid often shows exudate with a predominance of lymphocytes, elevated proteins, and ADA (adenosine deaminase) >40 U/L—the latter with a sensitivity greater than 85%.[4]

AFB in pericardial fluid has low sensitivity (40–60%), but its positivity is highly suggestive. Culture is the gold standard, despite being time-consuming. Pericardial biopsy, when possible, can confirm the diagnosis by the presence of granulomas and AFB.

TREATMENT

Treatment follows the standard regimen for pulmonary tuberculosis, with rifampicin, isoniazid, pyrazinamide, and ethambutol for two months, followed by rifampicin and isoniazid for another four months.[5] The use of corticosteroids may be beneficial in some cases, especially to prevent progression to constrictive pericarditis.

In severe situations, with cardiac tamponade, pericardiocentesis is necessary. In chronic cases of constriction, pericardiectomy may be indicated.

CONCLUSION

Pericardial tuberculosis, although rare, should always be considered in the differential diagnosis of pericarditis, especially in vulnerable populations or endemic regions. Clinical suspicion combined with the rational use of laboratory and imaging tests is essential to avoid late diagnosis and its complications. Early approach and appropriate treatment are crucial for a good prognosis of patients.

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