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Tuberculous pericarditis

Pericarditis tuberculosa

Leonardo F. Jurado ^{1,2}, Bibiana Pinzón ³, Zandra R. de la Rosa ¹, Marcela Mejía ¹,
Diana M. Palacios ^{1,2}

¹ Departamento de Patología y Laboratorios, Hospital Universitario Fundación Santa Fe de Bogotá, Bogotá D.C., Colombia

² Departamento de Patología, Facultad de Medicina, Universidad Nacional de Colombia, Bogotá D.C., Colombia

³ Departamento de Imágenes Diagnósticas, Hospital Universitario Fundación Santa Fe de Bogotá, Bogotá D.C., Colombia

Corresponding author:

Leonardo F. Jurado, Departamento de Microbiología, Facultad de Medicina, Universidad Nacional de Colombia, Carrera 30 N° 45-03, edificio 471, piso 3, Bogotá, D.C., Colombia

Teléfono: (312) 873 7570

lfjuradoz@unal.edu.co

Author's contribution:

All the authors contributed equally in the conception of the manuscript.

Tuberculous pericarditis is an infrequent but serious presentation of Tuberculosis (TB). Its diagnosis is difficult and often delayed or even not achieved, resulting in complications such as constrictive pericarditis with high mortality rates (1). In 2017, there were 10 million cases of active tuberculosis worldwide and 1.3 million related deaths, making tuberculosis the leading cause of death by a single pathogen worldwide (2). In Colombia during 2016 13626 new TB cases were reported; 83% (11338 cases) corresponded to pulmonary TB and 17% (2288 cases) to extrapulmonary TB, from these, 37 cases (1.6%) accounted to tuberculous pericarditis (3).

We describe a case of tuberculous pericarditis in a man with no apparent risk factors to develop the disease, which recalls the concept that no predisposing condition is necessary to develop TB (4).

A 62-year-old man presented to the emergency room with a history of malaise, fever, cough, dyspnea, and loss of 5 kg of weight during the past 30 days. His initial assessment showed normal vital signs, and no abnormalities in the white blood cells count, the erythrocyte sedimentation rate was 56mm/h, the C-reactive protein was 10.66 mg/L, and the procalcitonin level was less than 0.5 ng/mL, the serology for HIV was negative.

Chest X-rays demonstrated global cardiomegaly with a rounded heart shape (figure 1). The chest tomography showed abundant homogeneous and hypodense pericardial effusion, thickening of the pericardial membrane and enlarged lymph nodes (figure 2). An echocardiogram confirmed the accumulation of approximately 1300 ml of pericardial effusion, without hemodynamic compromise.

Considering the clinical and imaging characteristics, a pericardiocentesis was performed, obtaining 275 mL of yellowish liquid. Its cytological analysis was negative for

malignancy; adenosine deaminase (ADA) measurement was 101 IU/L, the polymerase chain reaction for *Mycobacterium tuberculosis* (IS6110), smear microscopy and culture (both MGIT and Lowenstein-Jensen) for mycobacteria were all negative.

Due to these inconclusive findings biopsies of the pericardium and mediastinal lymph node were performed; its pathological examination showed an extensive chronic granulomatous reaction with necrosis and giant cells (figure 3) the Ziehl - Neelsen staining showed acid-fast bacilli. Based on these results, anti-TB treatment plus prednisone was started. After stabilization of his clinical condition, the patient was discharged and completed six months of anti-TB treatment, achieving complete clinical recovery.

One to two percent of patients with pulmonary TB develop tuberculous pericarditis; however, it can also present as an isolated extrapulmonary form (5). In a Spanish series of 294 immunocompetent individuals with acute pericarditis, thirteen cases of tuberculous pericarditis were identified (4%); cardiac tamponade was observed in five cases and constrictive pericarditis in six patients (6).

Pericardial involvement can occur by extension from the lungs, adjacent lymph nodes, the sternum or even the spine, as well as through hematogenous spread. Frequently, tuberculous pericarditis corresponds to the reactivation of a previous infection, without an apparent primary site (7), as probably happened in the case described here.

Four pathological stages are described, initially, there is a fibrinous exudate with polymorphonuclear infiltration and formation of early granulomas, this is followed by a serosanguineous effusion with abundant lymphocytes and, finally, adsorption of the effusion with the onset of granulomatous necrosis, pericardial thickening, and fibrosis that can progress to constrictive pericarditis (7).

The clinical presentation is nonspecific and insidious, symptoms such as fever, night sweats, and weight loss, usually precede the cardiopulmonary symptoms, with cough, dyspnea, and pleuritic pain being the most frequent symptoms (8). In fact, this was the presentation of our patient, who did not develop a hemodynamic compromise.

Regarding the diagnostic approach, this is established through the detection of *M. tuberculosis* bacilli in smear microscopy or culture of the pericardial fluid and/or the identification of bacilli or granulomatous inflammation by the pathological examination of the pericardium (7). Pericardiocentesis is a common and useful procedure for the diagnosis of tuberculous pericarditis; the extracted fluid should be evaluated by smear and culture, ADA concentration, and cytology (8). In many cases, after this evaluation, the diagnosis is not achieved, therefore, and as described here, a pericardium biopsy is necessary.

Conflicts of interest

The author declares no conflict of interest.

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Figure 1. Chest X-ray. PA projection. Global cardiomegaly with rounded cardiac shape.

No opacities were observed.



Figure 2. Contrast-enhanced chest computed tomography, mediastinal window. Thickening of 3 millimeters and abnormal pericardial enhancement. Pericardial effusion, which does not produce compression of the right-ventricle. Pre-aortic adenopathy with heterogeneous enhancement. (White arrow)

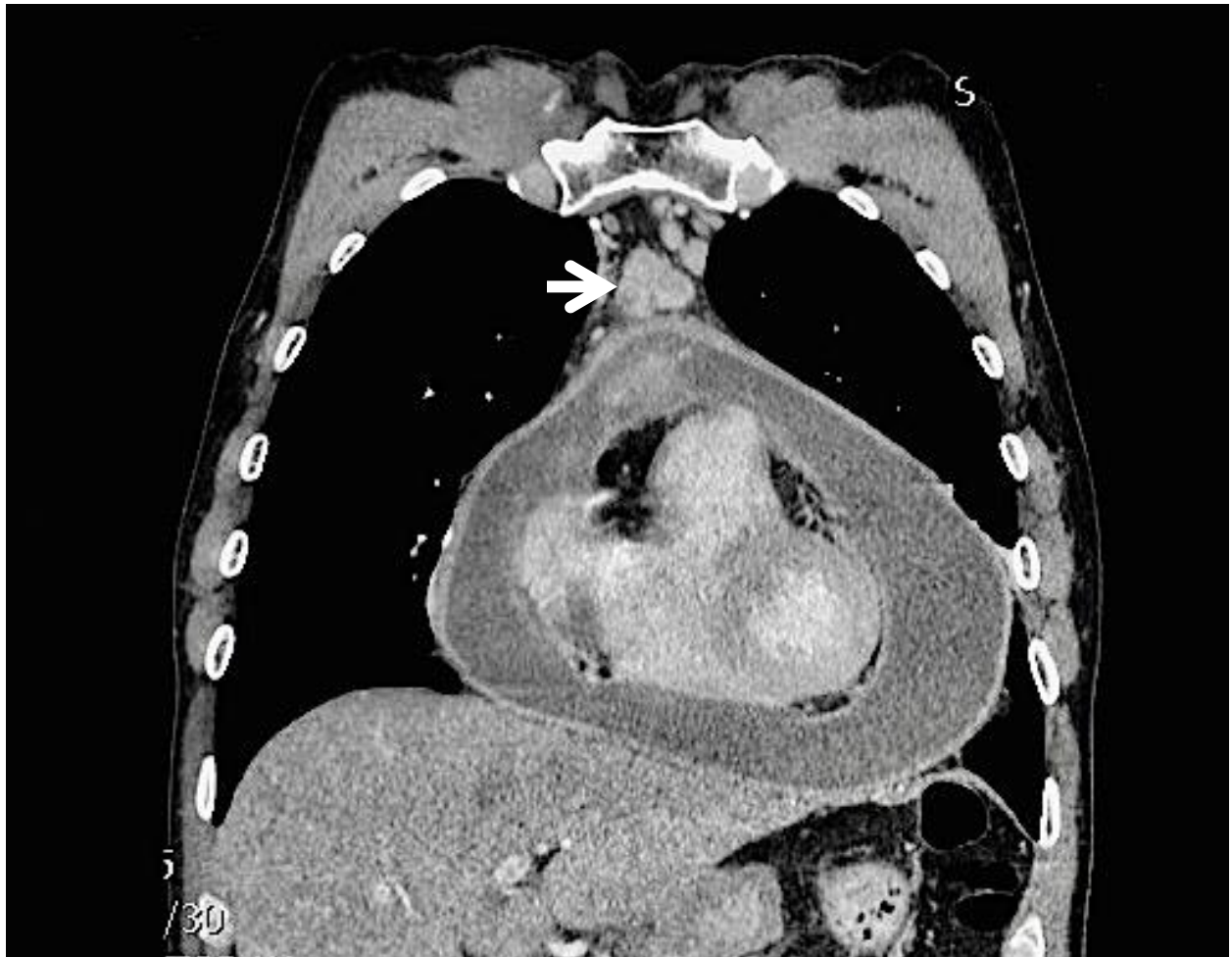


Figure 3. A and B. Pericardium compromised by chronic granulomatous inflammation with central necrosis and multinucleated giant cells. Hematoxylin-Eosin. 40X. C. Zielh-Neelsen stain showing acid-fast bacilli (Black arrow). 100X.

