



## CHIRURGIE THORACIQUE / THORACIC SURGERY

**CASE REPORT:  
EARLY SURGICAL TREATMENT OF TUBERCULOUS CONSTRICTIVE PERICARDITIS**

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**Abstract**

A 25-year-old male Peruvian patient presented with a low grade fever and chest pain, and was diagnosed with tuberculous constrictive pericarditis. He underwent pericardiectomy via a median sternotomy approach, received postoperative anti-tuberculous chemotherapy, and was subsequently discharged from the hospital. A contemporary aggressive approach to this problem is presented and discussed.

**Key Words:** Tuberculosis Constrictive pericarditis - Pericardiectomy

**Introduction**

Pulmonary tuberculosis (TB) remains a significant health care problem in Peru and worldwide despite significant advances in medical treatment and prevention<sup>1</sup>. In Africa, with 11% of the world population, the prevalence of TB is 29% and accounts for 34% of the global TB mortality<sup>2</sup>. This is, in large part, related to the associated incidence of coinfection with HIV/AIDS patients, ranging from 25-64%<sup>2</sup>. Moreover, despite aggressive medical treatment initiatives, multiple drug resistant TB (MDRTB) has emerged and become widespread<sup>3</sup>. Isolated involvement of the pericardium continues to occur, especially at the subacute tuberculous seroeffusive constrictive, and chronic constrictive pericarditis stages. The present case and review highlights the current surgical approach to chronic constrictive TB pericarditis in Peru.

**CASE REPORT**

A 25-year-old male with no previous history of health problems presented with a low grade fever and chest pain. He had associated recent weight loss, and recurrent chills and fever.

On physical examination, the patient was afebrile, pulse rate 112/min and regular, blood pressure 135/80 mmHg, and respiratory rate 14/min. Jugular venous pulse (JVP) was elevated (30 cmH<sub>2</sub>O), cardiac dullness increased, and muffled heart sounds, ascites and bilateral leg edema. Laboratory results were normal, except for Hemoglobin 9.97g/dL. Sputum smear and culture was negative for acid-fast bacilli (AFB). Chest roentgenogram (CXR) showed an enlarged and globular cardiac silhouette without calcification and no obvious parenchymal lung disease (**figure 1**). ECG showed sinus tachycardia and decreased voltage (**figure 2**).

A 2D Echocardiogram (2D ECHO) revealed a global pericardial effusion with fibrin strands and pericardial thickening without calcification (**figure 3**). Approximately 800cc of greenish yellow pericardial

fluid was obtained with blind percutaneous pericardiocentesis. Laboratory analysis revealed: glucose 22 mg/dL, LDH 1357 U/L, total protein 6.64 g/dL, WBC 2,000 (PMN 70%), ADA 34.4 U/L, and a negative sputum smear for AFB.



**Figure 1:** Preoperative CXR: enlarged cardiac silhouette. There was no evidence of concomitant tuberculous pulmonary parenchymal disease.



**Figure 2:** Preoperative ECG with decrease in QRS voltage in all leads.

The postoperative diagnosis was confirmed with the presence of tubercle bacilli in the histologic section of the pericardium, and a positive tissue culture without drug resistance (**figure 5,6**). Four drug anti-tuberculous chemotherapy was started postoperatively with isoniazid, rifampicin, ethambutol, and pyrazinamide, and continued for six months. The patient had an uneventful postoperative course and was discharged on the 17<sup>th</sup> postoperative day. Clinical follow-up was favorable. The postoperative CXR showed a decreased cardiac silhouette and a residual right pleural effusion (figure 7).

Repeat 2D ECHO showed decreased pericardial thickening and effusion, and preserved biventricular myocardial function (figure 8).

Clinical findings revealed regression of the JVP, and resolution of abdominal ascites and bilateral lower limb edema

**Figure 3:** Preoperative 2D ECHO showing pericardial effusion, fibrous strands, and thickened pericardium, without calcium

An elective subtotal pericardiectomy was performed via a median sternotomy approach, with the bilateral phrenic nerves defining the anterolateral and posterior extent of pericardial resection. The operative findings revealed a fibrous pericardial peel or rind involving the anterior right ventricle, the anterolateral left ventricle, and extension to the inferior right and left ventricles (**figure 4**).

**Figure 5 :** Arrow on Tubercular granuloma (H & E staining method)

**Figure 6.** Arrow pointing to Acid-Fast Bacilli ("red snappers"). (Ziehl Neelsen staining method).

**Figure 4:** Operative pericardiectomy view. Tubercle granulomas are present in both the parietal pericardium (blue arrows) and the epicardium (blue lines).

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