

Case Report

Successfully Managed Case of Cardiac Tamponade due to Tuberculous Pericardial Effusion: A Case Study

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ABSTRACT

Pericardial tuberculosis (TB) is considered a rare form of extra-pulmonary TB that affects up to 2% of patients with TB. Because of its rarity, the clinical presentation of pericardial TB is nonspecific and requires a high degree of clinical suspicion, which may delay the timely diagnosis and intervention and result in late complications and increased mortality. We herein describe a 24-year-old female medical student who was referred to our department of cardiovascular surgery complaining of fever, dyspnea on exertion, orthopnea, edema, nonproductive cough, and fatigue. Imaging studies on the chest showed pericardial effusion and thickened pericardium. The pericardial fluid analysis was positive with TB. Timely management was achieved through cardiac surgery (pericardial window) and medical treatment. Therefore, we conclude that in patients who present with pericardial effusion, TB should be a major suspect, especially in developing countries and successful management could be achieved through pericardial windowing in combination with anti-TB drugs and corticosteroids. (*Iranian Heart Journal 2021; 22(1): 109-111*)

KEYWORDS: Pericardial effusion, Tuberculosis, Cardiac tamponade

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Pericardial tuberculosis (TB) is a rare form of extra-pulmonary TB and accounts for up to 2% of all cases of pulmonary TB.¹ The diagnosis of pericardial TB is difficult, hence delayed or missed diagnoses, which can lead to late complications such as constrictive pericarditis with effusion and increased mortality.² Herein, we report a successfully

managed case of cardiac tamponade due to tuberculous pericardial effusion.

CASE REPORT

A 24-year-old female medical student was referred to our hospital complaining of low-grade fever, dyspnea on exertion, orthopnea, and general edema of 2 weeks' duration. The patient also complained of nonproductive cough and fatigue with

progressive weight loss for a month prior to her consultation.

She denied any history of known medical or surgical condition except for pulmonary TB, for which she was treated 11 years earlier. In addition, the patient had no known history of diabetes or human immune deficiency virus (HIV).

On physical examination, she was oriented, albeit unwell, and acyanotic. Additionally, she exhibited bilateral lower limbs pitting edema, fever (38.3°C), tachypnea (respiratory rate = 21/min.), tachycardia (125/min), and hypotension (98/70 mm Hg). Her heart sounds were distant without added sounds, and her jugular venous pressure was elevated. There were normal vesicular breath sounds at the upper zones of both lungs, but they diminished at the lower zones, especially the left lung.

Chest radiography showed an enlarged cardiac shadow, and the computed tomography of the chest highlighted pericardial thickening with effusion (Fig. 1 & 2). Three sputum tests were negative.

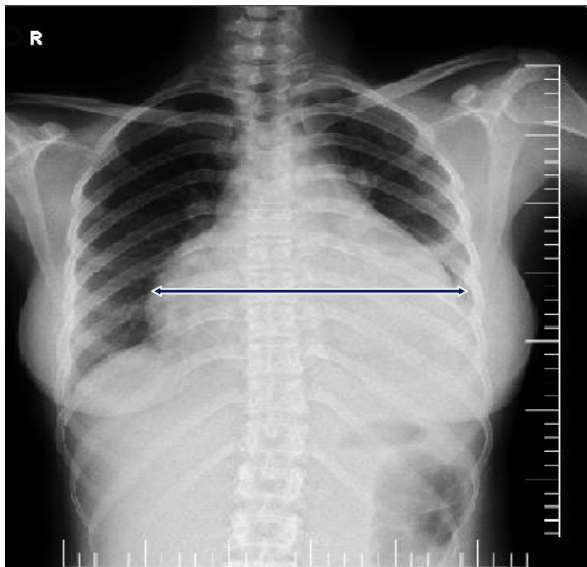


Figure 1: Chest X-ray on admission indicates an enlarged cardiac shadow due to pericardial effusion with pericarditis.

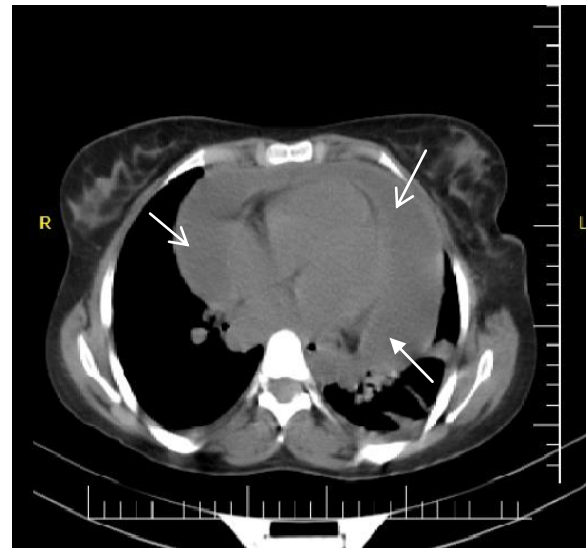


Figure 2: Computed tomography on admission shows pericardial fluid and thickened pericardium due to pericarditis.

A pericardial window was performed through a lower medial sternotomy after failed attempts at pericardiocentesis. A total of 900 cc of purulent fluid was drained, and a sample of pericardial tissue and fluid was sent for microbial and biochemical studies. The pericardial fluid report was positive, in favor of TB. The patient's blood pressure immediately rose after surgery to 125/80 mm Hg. Anti-TB therapy, in combination with corticosteroids, was then started. After 2 weeks of hospitalization, the patient was discharged because her clinical status had improved and her cardiac shadow had decreased on chest X-ray. At 6 months' follow-up, chest X-ray showed a normal cardiac area without pericardial effusion (Fig. 3).

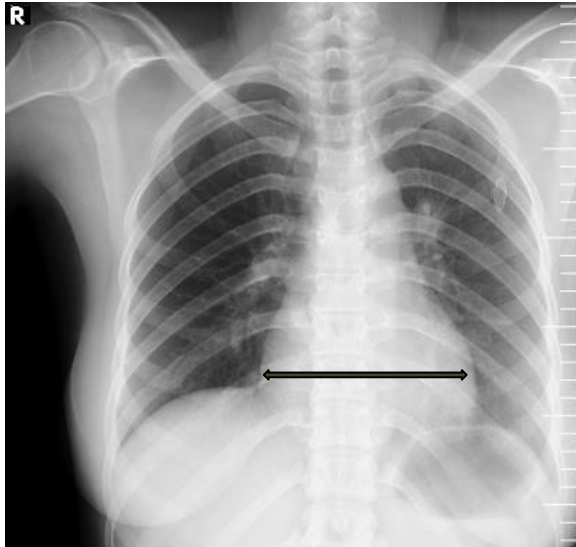


Figure 3: Chest X-ray at 6 months' follow-up indicates a normal cardiac shadow and recovery.

DISCUSSION

Pericardial effusion can be caused by a number of diseases including infection, idiopathic chronic pericarditis, and mediastinal radiotherapy. Nevertheless, pericarditis and effusion caused by *Mycobacterium TB* is the most common cause in endemic areas.³ We diagnosed our patient with pericardial effusion due to tuberculous pericarditis. Tuberculous pericardial effusion has an estimated incidence of up to 2% of all cases of extra-pulmonary TB.⁴ A study on the epidemiology of pericardial effusion in a large academic hospital in South Africa concluded that TB was the most common cause of pericardial effusion (69.5%) among 233 patients who were referred to the hospital with pericardial effusion.⁵ Patients usually present with nonspecific signs and symptoms, necessitating a high degree of clinical suspicion. The most common symptoms are cough, dyspnea, chest pain, night sweats, ankle edema, weight loss, and orthopnea.⁵ Our patient presented with almost all of these manifestations. We achieved optimal management in our patient through an open pericardial window with

biopsy for diagnosis and re-accumulation prevention, anti-TB drugs, and corticosteroids.

CONCLUSIONS

In patients who present with pericardial effusion, TB should be a major suspect, especially in developing countries. Successful management can be achieved through pericardial windowing in combination with anti-TB drugs and corticosteroids.

Ethical Approval and Consent to Participate: Consent for publication was obtained from the patient. The study was approved by the Ethics Committee of the Institutional Review Board of Somalia-Turkey Recep Tayyip Erdoğan Training and Research Hospital, Mogadishu, Somalia.

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Conflict of Interest: None declared.

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