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Research Article

**TUBERCULOUS PERICARDIAL ABSCESS WITH
IMPENDING PERICARDIAL EFFUSION AND CARDIAC
TAMPONADE**Dr. Muhammad Ammar Arif¹, Dr Ushba Fatima², Dr Muhammad Mansha³¹FCPS Cardiology²Services Institute of Medical Science³Shalamar Medical and Dental College Lahore

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Abstract:

Introduction: Since 1921, *Bacillus Calmette-Guérin (BCG)* vaccine has been given to infants to reduce the risk of tuberculosis (TB) disease, and disseminated TB. **Objectives of the study:** The main objective of the study is to analyse the tuberculous pericardial abscess with impending pericardial effusion and cardiac tamponade. **Material and methods:** This descriptive study was conducted in Shalimar Hospital, Lahore during June 2019 to January 2020. The data was collected from 10 patients. General physical and systemic examination was unremarkable and patients was vitally stable. Four days later they returned with e persisting fever, cough, dyspnoea and haemoptysis. **Results:** The patients was tachypnoeic, toxic looking and in sepsis. Their vital signs showed the following: respiratory rate of 24 breaths/min, tachycardia of 110 beats/min, blood pressure of 127/68 mmHg and temperature of 38°C. Clinical examination supported the diagnosis of cardiac tamponade. Jugular venous pulse was raised and on auscultation, the heart sounds were muffled and associated with a pericardial rub. **Conclusion:** It is concluded that tuberculosis remains a serious health problem. Thus complications like pericarditis, tamponade and abscess are imminent and despite adequate drug therapy, one third to one half of the patients eventually require Pericardiectomy.

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INTRODUCTION:

Since 1921, Bacillus Calmette-Guérin (BCG) vaccine has been given to infants to reduce the risk of tuberculosis (TB) disease, and disseminated TB. Generally, prospective randomized trials of BCG have been used to evaluate efficacy of BCG, and retrospective case-control studies of BCG have been used to compare effectiveness of different BCG vaccine strains. Although measures of BCG prevention effectiveness/efficacy have not been consistent, when BCG immunization of new-borns was stopped in Sweden, a circumstance that provided a non-vaccinated comparison group, a six-fold increase in TB notifications was observed in infants [1]. In a prospective randomized control trial in Britain in which over 50,000 older children were allocated to no vaccination or one of two vaccine groups, comparable prevention efficacy of 81% to 84% was found among those vaccinated with BCG (*Mycobacterium bovis*) or with vole bacillus (*Mycobacterium microti*), respectively, when data were compared over a 20-year period. It is recommended that BCG should be given at birth or at the time of earliest contact with the child preferably before 9 months of age and definitively by the time he is one year old [2]. In one study it is shown that tuberculin conversion rates are slightly higher when it is given a little later say at 1-3 months of age. BCG can be easily given to new born above 2000 grams of weight and is effective in preterm infants also. However small for gestational age babies show poor post vaccination conversion [3].

Tuberculosis is a common cause of pericardial effusion especially in the developing countries. Despite the decline in mortality due to tuberculosis and an overall decrease in the incidence, tuberculosis and its complications remain a serious health problem. However, tuberculous pericardial effusion leading to pericardial abscess is a rare presentation [4]. Large pericardial effusions are uncommon and their manifestation as cardiac tamponade is rare. It is known that the most common cause of pericardial effusion is malignancy followed

by tuberculosis. Previously it was known that the most efficient and safe way to treat pericardial effusion was peri-cardiocentesis [5].

Objectives of the study

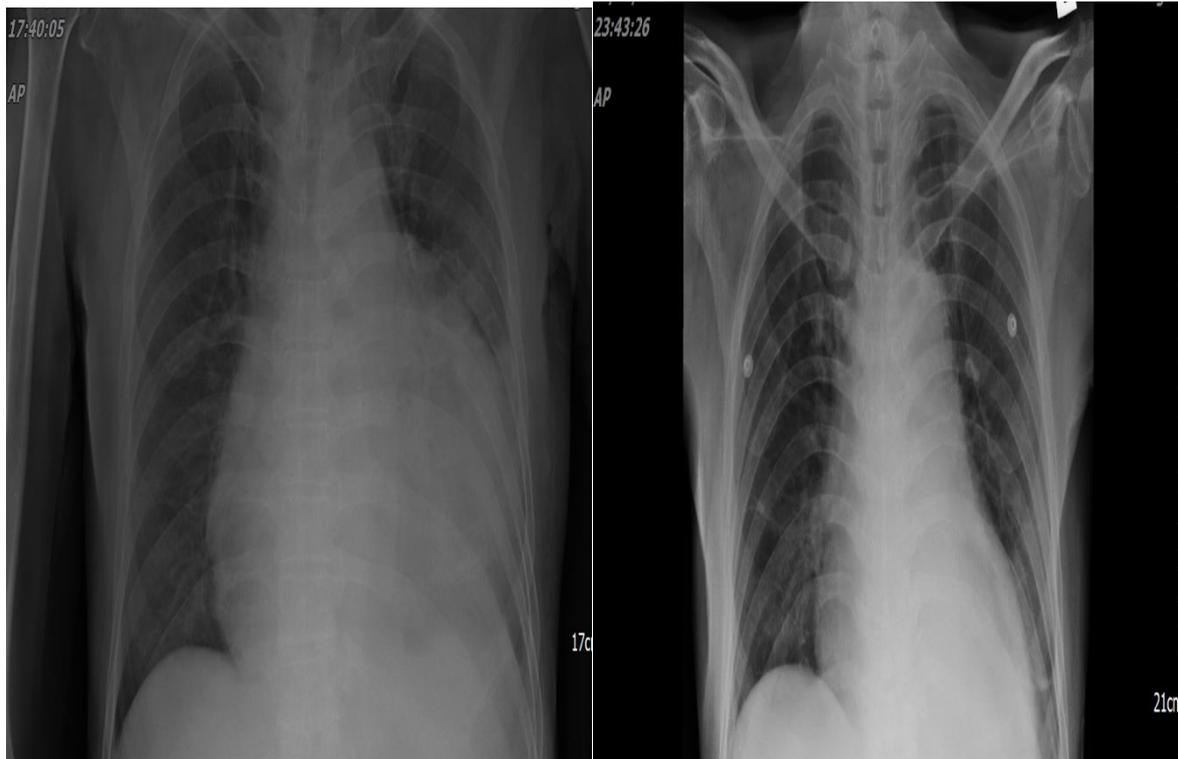
The main objective of the study is to analyse the tuberculous pericardial abscess with impending pericardial effusion and cardiac tamponade.

MATERIAL AND METHODS:

This descriptive study was conducted in Shalimar Hospital, Lahore during June 2019 to January 2020. The data was collected from 10 patients. General physical and systemic examination was unremarkable and patients was vitally stable. Four days later they returned with e persisting fever, cough, dyspnoea and haemoptysis. Clinical examination revealed displaced apex beat, increased Anterior Posterior (AP) diameter (bilateral harsh vesicular breathing), reduced air entry, dull to percussion and tender right hypochondrium / epigastrium. Echocardiogram showed reduced left ventricular function with a mild circumferential pericardial effusion. Moreover, signs of tamponade, right atrial collapse with significant variation and large Pericardial Effusion - 52 mm were seen. Transthoracic echocardiogram revealed global pericardial effusion with the evidence of RV collapse and clinical signs of cardiac tamponade. Blood, sputum, urine and stool culture did not reveal any growth of any identified pathogen. Serology for melioidosis was also negative.

RESULTS:

The patients was tachypnoeic, toxic looking and in sepsis. Their vital signs showed the following: respiratory rate of 24 breaths/min, tachycardia of 110 beats/min, blood pressure of 127/68 mmHg and temperature of 38°C. Clinical examination supported the diagnosis of cardiac tamponade. Jugular venous pulse was raised and on auscultation, the heart sounds were muffled and associated with a pericardial rub. There was no peripheral oedema, cyanosis, pallor, icterus or hepatosplenomegaly.



Chest Radiograph A: At the time of admission, B: After emergency pericardiocentesis.

DISCUSSION:

Tuberculosis pericarditis is a lethal condition and can be life threatening if prompt treatment is delayed. The mortality rate ranges from 14 to 40% and pyopericardium or purulent pericarditis is rare. The clinical manifestation of tuberculous pericarditis can be non-specific and varies with symptoms of fever, weight loss, night sweats and fatigue. However, it is commonly presented with cough, reduced effort tolerance and chest pain [6]. In some cases, it can be presented with chronic cardiac compression mimicking heart failure or may be presented acutely with cardiac tamponade [7]. This patient was admitted with symptoms mimicking chronic heart failure where he complained of worsening effort tolerance for a one-month duration and was subsequently diagnosed as cardiac tamponade that requires emergency pericardiocentesis. Such complication can be averted by early diagnosis and prompt treatment in tuberculous pericardial empyema which can be life-saving [8]. However, it is often difficult. Active pulmonary TB and pleural effusion maybe observed in 30% of cases with tuberculous pericarditis while 90% of the cases demonstrated features of active pulmonary TB [7]. Non-specific ST wave abnormalities were found in almost all cases with tuberculous pericarditis and other changes include small ECG voltage and electrical alternans [9].

Progression of tuberculous pericarditis can be further divided into four stages. It has been

described as: Stage 1, dry stage with early immune response and exudation of fibrinous material; Stage 2, effusive stage of serosanguineous fluid; Stage 3, absorptive stage with pericardial thickening and granulomatous caseation, and lastly Stage 4, constrictive stage caused by scarring effect [10].

CONCLUSION:

It is concluded that tuberculosis remains a serious health problem. Thus complications like pericarditis, tamponade and abscess are imminent and despite adequate drug therapy, one third to one half of the patients eventually require Pericardiectomy.

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