

More Than Just Coronary Artery Disease. A Case of Tuberculous Pericarditis in the Developed World

Simone Lescott¹, M.D.; Gina Hope, M.D.¹; Julia Weeks¹, M.D.

¹ Department of Family Medicine, Tallahassee Memorial Hospital, Tallahassee, Florida

Introduction

Tuberculous pericarditis is rare in the developed world and review of available literature reveals that it usually manifests with dramatic presentations such as Cardiac tamponade and ST elevation myocardial infarction (STEMI). Although the Tygerberg score has been developed to assist with the diagnosis of Tuberculous Pericarditis, it remains difficult to identify and delays in diagnosis are therefore very common.

It is important for the clinician to have a high index of suspicion even in atypical cases, as the sequelae of Tuberculous Pericarditis:

Constrictive pericarditis carries a mortality of over 90%.

In this case report, we present an atypical presentation of Tuberculous pericarditis: a case that was incidentally discovered during evaluation and management of Coronary Artery Disease.

Case Description

A previously healthy 72-year-old male presented with a 3-day history of exertional substernal chest pain that was associated with diaphoresis and dyspnea. EKG on admission revealed Q waves in the inferior leads and Chest X-ray was significant for an enlarged cardiac silhouette but no focal consolidation, infiltrates or masses. His Thrombolysis in Myocardial Infarction (TIMI) Risk score and HEART score of 2 respectively indicated a low probability of a cardiac event but the description of his chest pain was concerning for acute coronary syndrome (ACS). He was therefore commenced on a modified ACS protocol pending ischemic evaluation.

Hospital Course

Transthoracic echocardiogram performed as part of the ischemic evaluation was significant for a large pericardial effusion that was confirmed with a cardiac MRI whilst Myocardial perfusion scan using Gated SPECT Imaging revealed a partially reversible, moderate perfusion abnormality of the anterior wall indicative of ischemia. A left heart catheterization was therefore performed and showed significant obstructive coronary artery disease (CAD) with the recommendation for coronary artery bypass grafting (CABG). Drainage of the pericardial fluid at the time of CABG was also advised.

While awaiting CABG, the patient was noted to have nocturnal fevers and differentials including Infection, Malignancy and Tuberculosis (TB) were therefore entertained. Fourth generation HIV testing was negative. Workup for infection was unremarkable except for elevated inflammatory markers (ESR: 35 and CRP: 9); evaluation for malignancy was negative and investigation for TB including purified protein derivative (PPD) and interferon gamma assays were also negative. Further evaluation of his nocturnal fevers was therefore deferred pending drainage of the pericardial fluid and subsequent fluid culture. CABG, pericardial window and pericardial biopsy were later performed with grafting to the left anterior descending coronary artery and anterolateral obtuse marginal artery. 1000 cc of bloody pericardial fluid was also drained intraoperatively. Pericardial biopsy was positive for fibrinous pericarditis while pericardial fluid PCR was positive for Mycobacterium tuberculosis.

Upon the recommendation of Infectious Disease, the patient was commenced on a four drug TB regimen with Isoniazid, Ethambutol, Pyrazinamide and Rifampin and discharged in a stable clinical condition.

Imaging

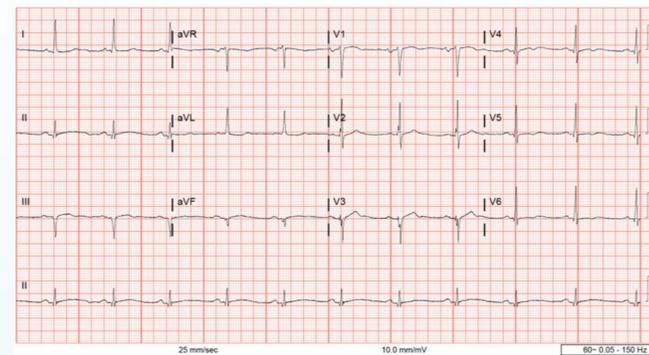


Figure 1. EKG significant for q waves in the inferior Leads but no ST elevation

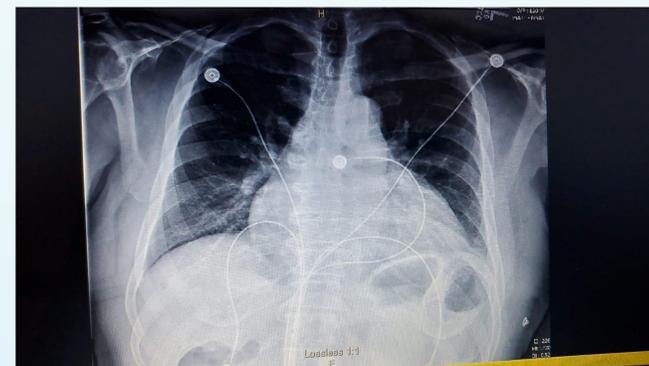


Figure 2. Chest X-ray showing an enlarged cardiac silhouette but no consolidation, infiltrates or masses



Figure 3. Cardiac MRI showing a large Pericardial Effusion as indicated by the arrows above

Discussion

Tuberculous pericarditis is rare in the developed world and it is therefore not uncommon for the diagnosis to be delayed or missed. The Tygerberg score was developed as a clinical decision tool to allow the clinician to determine whether pericarditis is due to tuberculosis. It scores five variables including weight loss, night sweats, fever, a serum globulin of >40g/l and a blood leukocyte count <10x10⁹/l. A total score of 6 or more is highly suggestive of tuberculous pericarditis.

Using this scoring system, our patient would obtain a total of 5 points (2 points for fever and 3 points for a blood leukocyte count <10x10⁹/l). The absence of weight loss, night sweats, recent travel, personal/family history of TB and immunosuppression and the presence of a negative Chest X-ray, PPD and interferon gamma assays also argued against the possibility of TB. Review of available literature also revealed that Tuberculous Pericarditis usually manifests dramatically: with presentations of Cardiac tamponade and ST elevation myocardial infarction (STEMI) while our patient was hemodynamically stable and presented with exertional chest pain. This case not only highlights an atypical presentation of Tuberculous Pericarditis but also highlights the need for clinicians to have a high index of suspicion for the disease as the sequelae of Tuberculous Pericarditis: Constrictive pericarditis carries a mortality of over 90%.

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