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# Spontaneous Right Atrial Rupture In Massive Tuberculous Pericardial Effusion

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***Abstract***
*Tuberculosis causing massive pericardial effusion is an extremely rare complication of tuberculosis and often goes undetected1. Young Adult manifesting as massive pericardial effusion with cardiac tamponade and right atrial rupture is a rare complication and is a surgical emergency. There are very few cases reported in the literature about right atrial rupture in a case of tuberculous pericardial effusion.*

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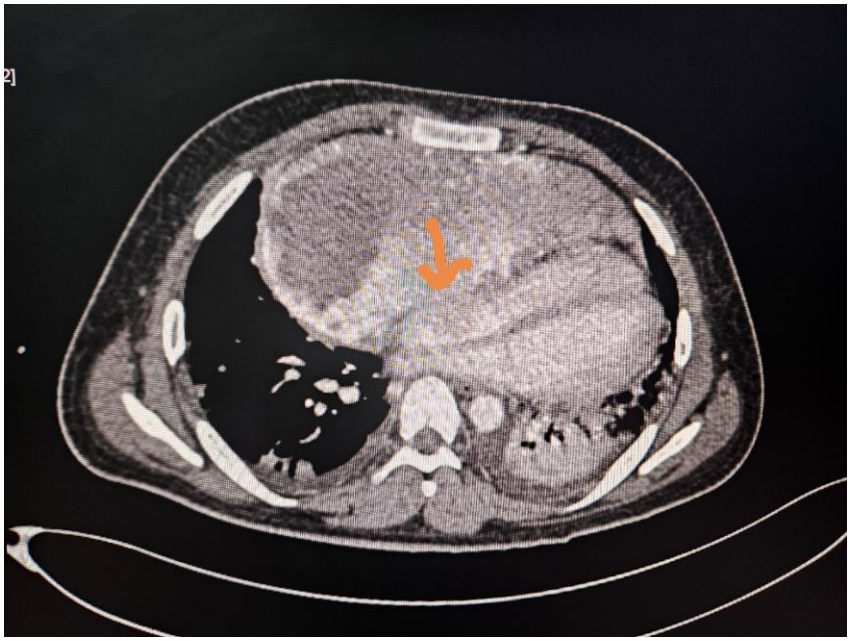
## I. INTRODUCTION

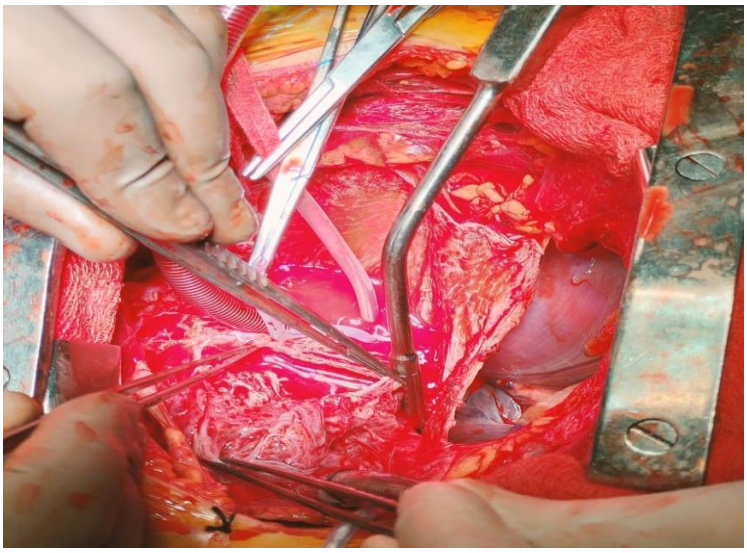
Tuberculosis causing massive pericardial effusion and cardiac tamponade with right atrial rupture is an extremely rare extra pulmonary complication of tuberculosis2. Tuberculous pericarditis has 4 main stages (1) fibrinous exudation with initial polymorphonuclear leucocytosis, relatively abundant mycobacteria, and early granuloma formation with loose organization of macrophages and T cells; (2) serosanguinous effusion with a predominantly lymphocytic exudate with monocytes and foam cells; (3) absorption of effusion with organization of granulomatous caseation and pericardial thickening caused by fibrin, collagenosis, and ultimately, fibrosis; and (4) constrictive scarring: the fibrosing visceral and parietal pericardium contracts on the cardiac chambers and may become calcified, encasing the heart in a fibrocalcific skin that impedes diastolic filling and causes the classic syndrome of constrictive pericarditis3. Here we present the case of a 22year old male patient who presented in the stage of pericardial effusion.

## II. CASE REPORT

A 22year old male patient presented to our department with history of chest pain and dyspnoea with one episode of fever for 4 days for which he was evaluated at another hospital for the same symptoms and was diagnosed to have massive pericardial effusion with cardiac tamponade. Pericardiocentesis was attempted there which drained frank blood and he was referred to our department for further management. Patient had similar h/o pericardial effusion 4 months ago for which he underwent pericardiocentesis but the reports were negative for malignancy and tuberculosis and other immunologic causes. Patient was not on any medication and was asymptomatic since then. Patient was haemodynamically stable when he presented to us. 2D echo showed massive pericardial effusion with collapsed right atrium and right ventricle. Left atrial and ventricular contractility was present. HRCT chest showed bilateral lung nodules probably Koch's nodules. CECT chest showed extravasation of contrast from right atrium into pericardial cavity and compressing on the right side of heart. Patient was taken up for emergency surgery.

Under right femoro femoral bypass median sternotomy was done. Pericardium was opened and massive haemorrhagic pericardial effusion was drained and clots were evacuated. Subsequently aorto bicaval cannulation was done and CPB established. Right atrium showed a 4*3cm rent which was repaired with pericardial patch. Fibrosed pericardium was excised. Decannulation was done after coming off bypass. Patient was shifted to ICU with high ionotropic support.





## III. DISCUSSION

Spontaneous rupture of right atrium following a massive tuberculous pericardial effusion in a young patient is extremely rare and very few cases have been reported in literature4. Infarction of the atrial wall due to an obliterative endarteritis or thrombotic occlusion is the most common cause of spontaneous rupture of atrium.5,6 Only with a high index of suspicion of atrial rupture in a patient with atrial infarction or cardiac tamponade earlier diagnosis and treatment becomes possible. Very rarely patients with spontaneous right atrial rupture may remain asymptomatic. Our patient was haemodynamically stable and his only complaint was dyspnoea. These patients if not treated surgically eventually develop severe right heart failure followed by death. Other main causes of right atrial rupture are iatrogenic, post traumatic, malignancy and infarction7-9. Our aim of reporting this case is that spontaneous right atrial rupture is extremely rare in case of young patients following massive tuberculous pericardial effusion. They may present with stable hemodynamics. Accurate diagnosis and emergency surgery can be lifesaving.

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