



AN UNUSUAL CASE OF MYOCARDIAL TUBERCULOSIS ALONGWITH INVOLVEMENT OF KIDNEYS

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ABSTRACT

Pulmonary tuberculosis is one of the commonest infectious disease encountered in clinical practice and more so in the developing countries. Despite of effectiveness of treatment, it is still a major cause of death. Tuberculosis can affect almost every organ of the body with maximum cases in the lungs accounting to 80% [1]. It is seen that extrapulmonary site have increased morbidity and mortality. Cardiovascular involvement is rare about 1-2% [2] and that too seen usually in the pericardium. The involvement of myocardium is even rarer. Here is a case of autopsy finding in 47 years old female showing myocardial involvement due to tuberculosis. Tubercular findings were also found in the bilateral kidneys.

KEYWORDS : Pulmonary, tuberculosis, myocardium, cardiovascular, post mortem, glomerulus, epithelioid cells, Langhans cell.

INTRODUCTION:

Tuberculosis was detected far back in 10,000 BC. In 1664 first case of myocardial tuberculosis was reported by Maurocordat and sudden cardiac death due to tuberculosis was reported in 1977 [3]. According to WHO recent incidence of Tuberculosis in India is 2.79 million cases which accounted to 40% of Indian population. [4]. Tuberculosis affects one third of world [5] population each year with India ranking first followed by China, Indonesia, South Africa and Nigeria [6]. WHO estimated that between 1999 -2020, 1 billion newly infected cases of tuberculosis will arise, 200 million will get sick and 70 million will die.

Tuberculosis of heart is uncommon. This is not strange when one realizes how rarely tuberculosis attacks muscle tissue in general. Various studies have been conducted in the past suggesting cardiac involvement in Tuberculosis.

- 1) In 1950, Diefenbach reviewing then available material reported 0.28% of myocardial tuberculosis in 10000 autopsy cases. [7]
- 2) Sir William Osler: 275 cases of tuberculosis in 1000 autopsy cases with pericardial involvement in 7 cases. [8]
- 3) Wells reported 10 cases of cardiac tuberculosis in 1048 autopsies. [8]
- 4) Similarly Brooks and Lippincott 23 among 1000 cases. [8]

Myocardial tuberculosis arise secondary to pericardial tuberculosis. True cases of primary tuberculous myocarditis is very rare.

CASE PRESENTATION:

We received a specimen of heart for postmortem analysis along with bilateral kidneys of a 47 years old female.

Grossly, The heart measured 1.5cm*10cm*17cm weighing 410 grams. Left ventricular thickness being 2.7cm and right ventricular thickness being 0.7cm. Right coronary artery was found to be occluded by 40%. Few whitish patches were observed over the right ventricle wall. Left ventricle and interventricular septum showed fibrotic areas. Received kidneys were scarred measuring 6cm*3cm*2cm, shrunken with nodular granularity. Capsule was stripped off with difficulty. On cut section cortico-medullary differentiation was seen.

Figure 1. shows whitish patches over the ventricular wall.



Microscopically section from heart showed presence of Langhans type of giant cells along with epithelioid cells and fibroblasts in the myocardium.

Sections from both kidneys showed caseating granulomas comprising of central area of caseous necrosis with Langhans giant cells, epithelioid cells, lymphocytes and fibroblasts along with glomeruli and renal tubules.

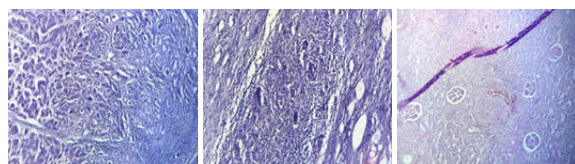


Figure 2 is the low power view of the section from heart showing myocardial involvement with tuberculosis.

Figure 3 is the 40x view showing Langhans giant cells admixed with epithelioid cells lymphocytes and fibroblasts.

Figure 4 shows section from the kidney showing caseating granulomas.

DISCUSSION:

Myocardial tuberculosis is considered as an uncommon clinical entity and its only infrequently diagnosed antemortem. Post mortem studies shows that isolated myocardial involvement is responsible for <0.1% of tuberculosis related deaths [9]. Most cases occur secondary to 1) hematogenous spread from remote tubercular foci.

- 2) lymphatic spread from the mediastinal lymph nodes.
- 3) Direct spread from the adjacent pericardium. Pathologically 3 patterns of involvement can be seen.
 - a) Miliary with heart being just one of the many other organs being involved. This is the most common finding.
 - b) As a diffuse infiltrating interstitial disease.
 - c) Caseating nodular disease also known as a tuberculoma.

The pericardium over the right auricle because of its close proximity to the bronchial lymph nodes appears to be favourite site of initial invasion. Cardiac tuberculosis usually presents as a pericardial effusion with systolic and diastolic dysfunction. Lesions also involves the atria, ventricles and interventricular septum. The subacute stage of tubercular pericarditis presents with features due to the presence of pericardial fluid and those due to presence of pericardial constriction as a result of thickening of visceral pericardium. In our case of autopsy kidney showed caseous necrosis surrounded by Langhans giant cells, epithelioid cells and lymphocytes. Langhans giant cells along with epithelioid cells were also found in the

heart. Though ZN staining was negative in both organs histomorphologically the features suggested tuberculosis.

Myocardial tuberculosis can present with rhythm disturbances, congestive cardiac failure, ventricular aneurysm, RV outflow obstruction, coronary involvement and canal obstruction.

Involvement of myocardium is rarely associated with pericardium. Isolated myocardial involvement being even rarer i.e 0.14%, 0.2%, 2% in various conducted studies[9]. Endocardial involvement even rarer with coronary vessels involvement being exceedingly rare.

Prevalence of tuberculosis in AIDS patients makes it even more complicated. In association with HIV, the disease pattern changes with increase in dissemination. Tuberculosis is not an uncommon finding at autopsy for most of autopsy surgeon, but as a cause of death it is not so common. The presence of nonspecific symptomatology in-sufficient cost effectiveness of the diagnostic test and precocious deaths are identified as the most frequent cause of undiagnosed tuberculosis. Awareness of tuberculosis and its high prevalence is essential for minimizing missed diagnosis.

CONCLUSION:

The importance of diagnosis is that this is curable if diagnosed but fatal if undiagnosed. An undiagnosed person is of epidemiological importance when he/she is in contact with non immunised persons. Tuberculosis can involve all the organs of the body. Ours being an unusual case wherein there was involvement of myocardium with simultaneous involvement of kidneys.

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