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RESEARCH ARTICLE

MYOCARDIAL TUBERCULOSIS: A RARE ENTITY

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ABSTRACT

Background: Tuberculosis is very common health problem in developing countries. TB generally does not involve myocardium. Only 1-2% cases of tuberculosis involve heart and mostly its pericardium, myocardial tuberculosis is far rare. We describe a case of myocardial tuberculosis on post-mortem examination

Case presentation: Patient was a known case of pulmonary tuberculosis but unaware of other system involvement. We describe the clinical presentation, outcome of case and review the literature on myocardial tuberculosis.

Conclusion: Involvement of myocardium in tuberculosis is rare. However it should be suspected in all patients of TB elsewhere in body as it can cause sudden cardiac death and early recognition can prevent it.

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INTRODUCTION

Tuberculosis is common public health problem in developing countries. Tuberculosis is generally believed to spare four organs heart, skeletal muscle, thyroid and pancreas (Agarwal *et al.*, 2005). It is seen that only 1-2% of all cases of tuberculosis have cardiac involvement in which mostly it is pericardium which is involved, myocardial involvement is exceedingly rare (Norris, 1904). We reported a case of post-mortem who was a known case of pulmonary tuberculosis and diagnosed to have myocardial involvement.

CASE

A 35 year old male was taking ATT since one year for pulmonary tuberculosis. As we received the body for autopsy antemortem symptoms and condition of patient was not well known. Patient was brought to emergency of SMS Hospital at 1:55am and was declared dead at 2:25am.

GROSS

Lung- normal in appearance, firm on cutting. Piece of it sinked in water. No nodules were visible grossly Brain, liver, spleen, kidney, heart and Aorta- were normal in appearance.

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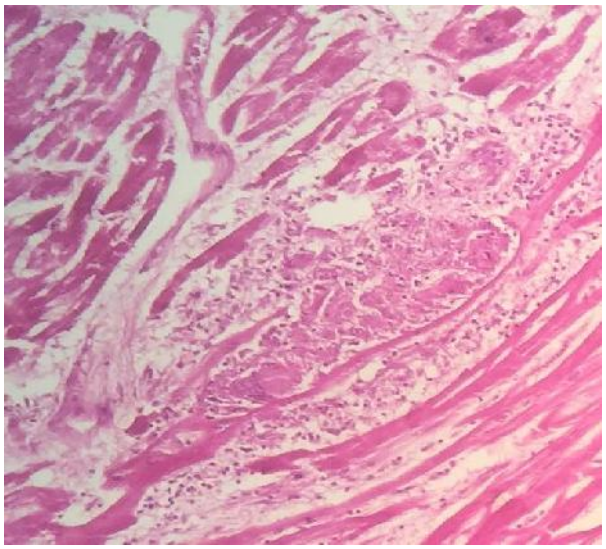
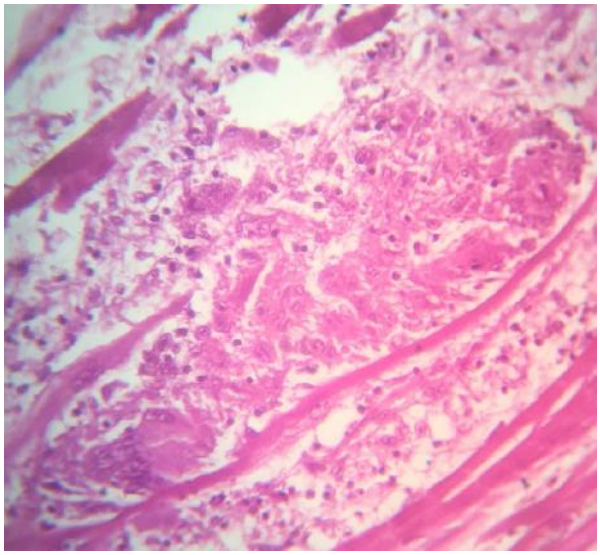
Microscopic examination

Meninges,lung, liver, spleen and kidney- were congested and had epitheloid cell granulomas with multinucleated gaint cells and necrosis. Heart-Pericardium, right ventricular wall and aorta- did not had any features resembling TB. Left ventricular wall and interventricular septum- showed poorly formed epitheloid cell granulomas with langhans giant cell. There were areas of caseaous necrosis



10X: poorly formed granuloma in between



40X: epitheloid cell granuloma with necrosis myocardial muscle fibres and gaint cell

Above findings suggested that patient was having disseminated tuberculosis which remained undiagnosed when he was alive. This suggested that every patient of TB should be extensively evaluated as cardiac involvement may lead to sudden death, as in our case.

DISCUSSION

Tuberculosis is common public health problem in many parts of world despite being 100% curable. TB is still a leading cause of mortality representing second most common cause of death from infectious disease after HIV (Dixit *et al.*, 2015). TB is generally believed to spare four organs, heart, pancrease, skeletal muscle and thyroid. Heart is 13th rank organ affected by TB. It is estimated that only 1-2% of all cases of TB have cardiac involvement. This condition most frequently affects pericardium, while myocardial involvement is exceedingly rare (Thomas *et al.,* 2014). Myocardial tuberculosis was first reported in 1664 by Maurocadat and second case 97 years later in 1761 by Morgagni followed by Laennce in 1826. Among 7,688 autopsy reports Raviart was able to discover 49 cases of myocardial TB i.e. 0.63% (Raviart, 1906). Norris examined 7,319 protocols among which were included those of 1,780 definitely tubercular subjects and found records of tubercular pericarditis in 82 and tubercular myocarditis in only 5 cases (Norris, 1904). So after searching the records pretty carefully we have been able to find only few autopsy cases and very few ante mortem case reports. The reason of its rarity are not known. It has been suggested that continuous movement of myocardium is not conducive to lodgement of tubercle baciili while other theory has proposed that lactic acid produced by muscular activity offers protection to cardiac muscle against tubercle bacilli (Horn and Saphir, 1935).

Myocardial tuberculosis occurs by direct extension or less often by retrograde lymphatic drainage from mediastinal lymph node. Infection via hematogenous route may develop in miliary and disseminated tuberculosis as was in our case (Wallis *et al.*, 1984). Horn and Saphir have described three histological types of myocardial TB-

- Nodular tubercle (tuberculoma) of myocardium varying from pea to egg size with central caseation.
- Miliary tubercles of myocardium complicating generalised miliary disease.
- The uncommon diffuse infiltrative type, usually associated with tuberculous pericarditis in which myocardium is diffusely infiltrated by granulation tissue containing giant cells,epitheloid cell and lymphocytes (Horn and Saphir, 1935).

There exists an anatomical predilection for right side of heart because of right mediastinal lymph node involved more commomnly. Our case had involvement of interventricular septum and left ventricle.

Conclusion

As TB is still a leading cause of mortality and morbidity, we should always look for cardiac involvement in all tubercular cases so that death can be prevented. May be it is due to lack of carefull examination we fail to see cardiac involvement in extensive tubercular involvement of systems.

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