



## SEPTICAEMIA- A FATAL OUTCOME OF DISSEMINATED TUBERCULOSIS

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**ABSTRACT**

Hemodynamic manifestations of Disseminated tuberculosis (TB) are heterogeneous and less plausible when patient presents with features of sepsis. Hence, despite one third of world's population being latently infected by Mycobacterium Tuberculosis and TB being an important cause of morbidity and mortality worldwide, it's shocking revelation is most of the times made on autopsy. We hereby, report a case of Disseminated TB with septicemia in an elderly female discovered on autopsy.

**KEYWORDS** : Disseminated TB, Langhan's giant cell, millet, Septicemia

**INTRODUCTION**

India accounts for a quarter of the global TB burden, as per the WHO global TB report 2020<sup>[1]</sup> and hence the government of India has declared to eradicate tuberculosis completely by 2025. India has high number of cases of Tuberculosis, which is mostly due to its ever-increasing population, low-income families staying in crowded places, lack of basic medical infrastructure. It is estimated that more than 2 billion people all over world are infected with Mycobacterium Tuberculosis, which includes approximately 9.3 million new cases and 1.7 million fatal cases every year<sup>[2]</sup>. Tuberculosis is caused by human type of Mycobacterium Tuberculosis which is transmitted by droplets and aerosol infestation. Tuberculosis is classified generally into primary pulmonary and extrapulmonary tuberculosis. A more widespread and disseminated form of TB is military tuberculosis.

Miliary Tuberculosis occurs when tubercle bacilli get disseminated from primary focus into bloodstream, lymphatics, adjacent and distant lymph nodes and eventually to other organs<sup>[3]</sup>.

The term Miliary Tuberculosis was first introduced by Jacobus Manger in 1700 B.C. while describing pathological specimen having tiny tubercles like "millet seeds" in size and appearance. It meant a Latin word milarius related to millet seeds. Disseminated Tuberculosis is defined as simultaneous involvement of at least two noncontiguous organ sites of the body or spread into blood, bone marrow, liver, or spleen.<sup>[4]</sup>

Although TB is highly contagious and dangerously fatal disease, it does not alert one's mind while dealing with patients who present with clinical features of septicemia. However, this differential should always be considered, when patient comes with a weak general condition, deteriorating status of health and features of sepsis. It is also important to look for the immune status of such patients since florid TB occurs more commonly in immunocompetent and immunosuppressed patients.

**Case History**

We, herein present an autopsy case of elderly female who was admitted to our hospital but eventually expired during treatment.

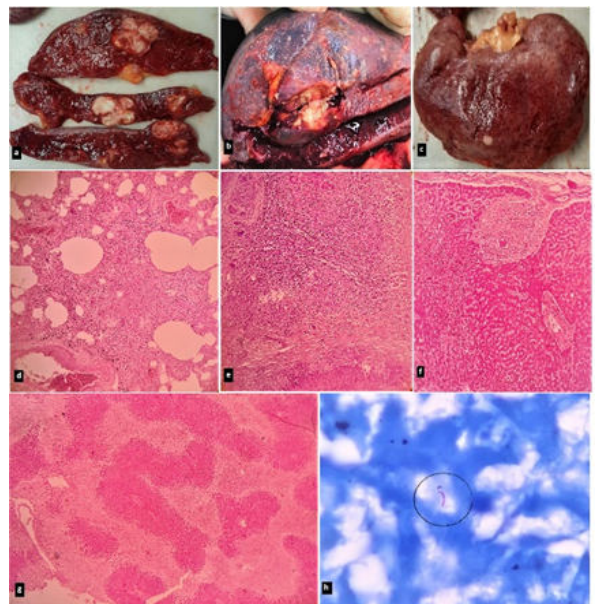
A 60-year-old female came with complaints of multiple episodes of loose motions, breathlessness, giddiness, and backache. There were no other complaints like fever, chest pain, palpitations, pain in abdomen and Malena. However, her general condition was poor, and was intubated and put on mechanical ventilation. Patient was drowsy and disoriented with poor vital signs.

Blood investigations revealed hemoglobin of 11.7 gm%, Hematocrit 3.71, total leucocyte count was high up to 15,900/mm<sup>3</sup> with predominantly neutrophilia. Her biochemical profile was within normal range. A clinical diagnosis of septicemia was made.

Despite all efforts her condition deteriorated and was given CPR but could not be revived.

A complete autopsy was performed. Grossly both the lungs were firm and heavy. There were multiple yellowish white nodules seen on lung parenchyma. Similar millet sized yellowish nodules were seen on spleen (Fig. a), kidney (Fig. c), and liver (Fig. b). On cut section, caseous material oozed from the organs. Diaphragm over abdominal surface showed multiple tiny tubercles ranging in size 0.1-0.2 cm. External surface of stomach, small intestine, large intestine, and mesentery showed similar tubercles.

Histology from lung (Fig- d), liver (Fig- f, g), spleen (Fig- e), diaphragm, and intestine showed well organized characteristic tubercular granulomas composed of Langhan's giant cells, epithelioid histiocytes, caseous necrosis with lymphocytes in the interstitial space along with few congested vessels and fibrous tissue. Few fibrin thrombi were noted in lungs. Liver also showed diffuse fatty change. Special stain revealed acid fast bacilli (fig-h).



A final diagnosis of disseminated Tuberculosis with septicemia and multiple organ dysfunction was made.

## DISCUSSION

In the above case signs and symptoms of Miliary Tuberculosis were not recognized clinically. Miliary Tuberculosis may be missed by an expert also due to atypical X ray findings<sup>[5]</sup> and antibiotics or other drugs received by patient during the treatment<sup>[6]</sup> which hide the true clinical scenario and symptoms of the patient. In our case along with lungs, the tuberculosis was widely spread into liver, spleen, kidneys, diaphragm, and intestine also, which lead to multiple organ dysfunction, septicemia and eventually death.

It has been stated in multiple studies that Mycobacterium Tuberculosis sepsis pathophysiology is basically mediated by lipoarabinomannan component of Mycobacterium Tuberculosis, which is present in its cell wall, thus causing the stimulation of tumor necrosis factor while inactivating macrophages<sup>[7]</sup>.

Thus, Miliary Tuberculosis is a potentially fatal and severe form of TB which causes massive lymphohematogenous dissemination in other organs.

## CONCLUSION:

Undiagnosed TB is a big health hazard to the public and indirectly to healthcare workers also. Incidentally, such undiagnosed cases are revealed on autopsies. Miliary TB has an atypical and varied clinical presentation which can be missed by a clinician; hence a better understanding of these disease and its symptoms is necessary especially in those with poor general condition and presenting with sepsis, which might help in accurate diagnosis and prompt treatment. A detailed laboratory and radiological investigations must accompany by better clinical approach to diagnose such contagious and fatal disease. All necessary precautions and measures are also important to be taken by health care workers while handling such cases.

Therefore, early diagnosis, protective strategies, drug compliance and regular treatment are the important factors to avoid the spread of disseminated tuberculosis.

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