

## CASE REPORT

# Puerperal disseminated tuberculosis: a case report

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## ABSTRACT

Disseminated tuberculosis is a potentially lethal form of tuberculosis (TB) in which infection has spread by lymphohematogenous dissemination of Mycobacterium tuberculosis bacilli from the lungs to other parts of the body, with multiple organs affected. Disseminated tuberculosis can occur within weeks of infection with tuberculosis or after years. Tuberculosis is common in pregnancy and puerperium, but disseminated TB is rare, with potential lethal maternal and fetal outcomes. We report a case of a 29 years old female who developed disseminated tuberculosis in puerperium with involvement of lungs, liver and spleen.

**Keywords:** Disseminated tuberculosis, pregnancy, puerperium.

Disseminated tuberculosis (TB) is a lethal form of tuberculosis with involvement of two or more noncontiguous sites resulting from hematogenous dissemination of Mycobacterium tuberculosis.<sup>1</sup> It can occur as a result of progressive primary infection or reactivation of a latent focus with subsequent spread.<sup>2</sup> It has been observed that disseminated TB is more common in immunocompromised hosts, especially in developing countries, where morbidity and mortality are higher due to TB - human immunodeficiency virus (HIV) co-infection.<sup>3,4</sup> The diagnosis is often difficult because the clinical presentation is nonspecific and the paucity of tools available for confirmatory laboratory diagnosis.<sup>4</sup> Tuberculosis is common in pregnancy and puerperium, but disseminated TB is rare, with potential lethal maternal and fetal outcomes.<sup>5</sup> Tuberculosis is an infection which is controlled by cellular immunity. Pregnancy suppresses the cell mediated immunity which can lead to disseminated TB development.<sup>6</sup>

### **Case**

A 29 years of old primigravida female, having an uneventful

antenatal period delivered a baby normally at full term. She presented with fever, anorexia, weight loss and right upper abdominal pain about 23 days after delivery. Patient underwent blood investigations which revealed anemia (Hb- 9.0gm/dl), leukocytosis with raised ESR. On physical examination the patient was febrile with tachycardia and SPO<sub>2</sub> 95% with cervical and axillary lymphadenopathy. Other systemic examination was normal. Ultrasound (USG) abdomen and pelvis was advised to look for retained product of conception (RPOC) or pelvic collection. USG showed necrotic abdominal lymphadenopathy, hepatosplenomegaly with multiple small well defined hypoechoic lesions in liver and spleen (Figure 1, 2).

Contrast enhanced computed tomographic (CECT) images of the thorax showed small centilobular nodules diffusely scattered in bilateral lung fields with tree-in-bud pattern and mediastinal lymphadenopathy suggestive of infective etiology (Figure 3, 4).

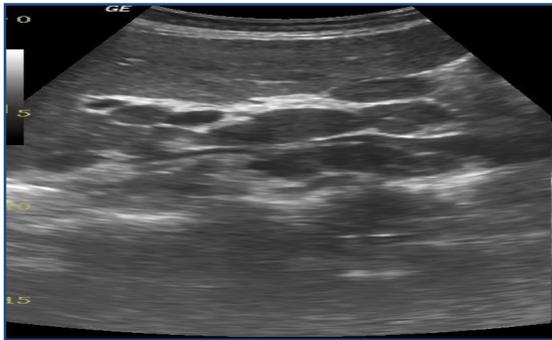
CECT abdomen and pelvis showed hepatosplenomegaly with small well defined hypodense lesions diffusely scattered

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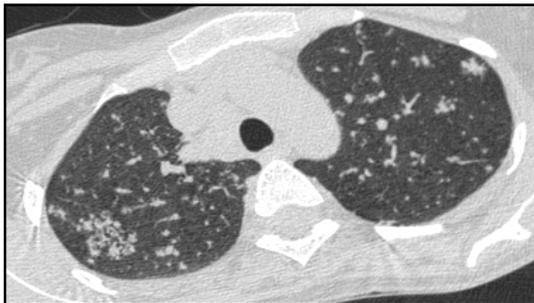
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**Figure 1:** Ultrasound abdomen image shows multiple small hypoechoic lesions in scanned liver suggestive of microabscesses.



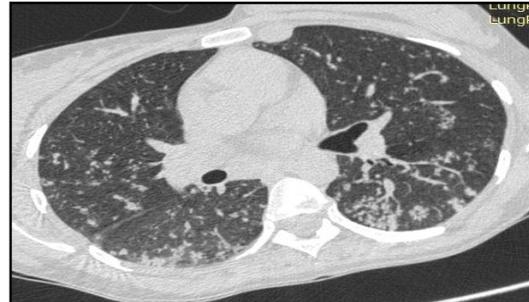
**Figure 2:** Ultrasound abdomen image shows multiple abdominal lymph nodes.



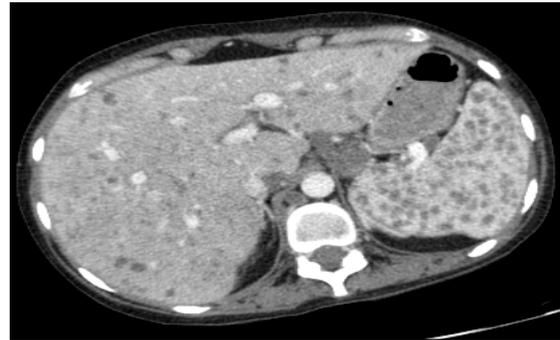
**Figure 3:** Contrast enhanced computed tomography axial image of the chest in lung window at upper lobes level shows multiple centrilobular nodules with tree-in-bud pattern

in both hepatic and splenic parenchyma along with necrotic abdominal lymphadenopathy (Figure 5, 6). Histopathological examination from hepatic lesions showed granulomatous lesion with mononuclear cell infiltrates and central caseating

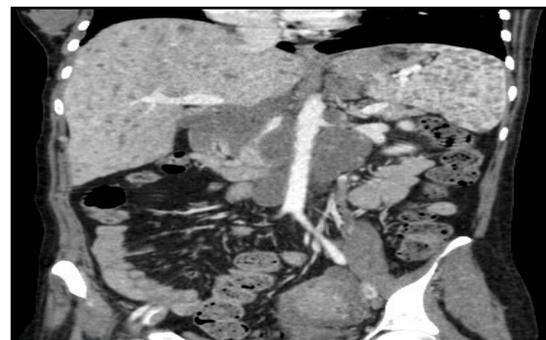
necrosis suggesting tubercular etiology. The patient was put on antitubercular treatment with an uneventful follow up period.



**Figure 4:** Contrast enhanced computed tomography axial image of the chest in lung window at hilar level shows multiple centrilobular nodules in bilateral lung fields with tree-in-bud pattern.



**Figure 5:** Contrast enhanced computed tomography axial image of the abdomen shows multiple small hypodense lesions in both liver and spleen with abdominal lymph nodes.



**Figure 6:** Contrast enhanced computed tomography coronal image of the abdomen shows multiple small hypodense lesions in both liver and spleen with hepatosplenomegaly and abdominal lymph nodes.

## Discussion

Tuberculosis is a known cause of maternal and fetal morbidity worldwide with more prevalence in developing countries. Pulmonary tuberculosis is more prevalent than extrapulmonary and disseminated forms. Disseminated TB is a lethal form of tuberculosis with involvement of two or more noncontiguous sites resulting from hematogenous dissemination of *Mycobacterium tuberculosis*. It can occur as a result of progressive primary infection or reactivation of a latent focus with subsequent spread.<sup>1</sup> It has been observed that disseminated TB is more common in immunocompromised hosts.<sup>3,4</sup> The diagnosis is often difficult because the clinical presentation is nonspecific and the paucity of tools available for confirmatory laboratory diagnosis especially in developing countries.<sup>4</sup> Puerperal patients with active TB presents with similar clinical manifestations as other patients which include fever with evening rise, malaise, cough, dyspnoea, and weight loss. Symptoms of tuberculosis may be mistaken for other causes in puerperal period.<sup>5</sup>

Tuberculosis is an infection that is controlled by cellular immunity. During pregnancy there is suppression of the T-helper 1(Th1) immune response, which predispose to reactivation of tuberculosis. After delivery, Th1 suppression reverses and symptoms are exacerbated.<sup>6</sup> Women in the puerperium are more susceptible for reactivation of latent infection or to develop disseminated TB. Disseminated TB is more common in developing countries because of coinfection with HIV. HIV infected women has more severe form of extrapulmonary TB with involvement of brain, meninges, abdomen, pleura and pericardium.<sup>5,6</sup> Our patient had disseminated TB in postpartum period involving liver, spleen, bilateral lungs associated with abdominal and mediastinal lymphadenopathy. In our patient, probably pregnancy induced immunosuppression had led to reactivation of latent focus of tuberculosis infection. Postpartum female with this type of presentation is very uncommon. Treatment should be initiated as early as possible on clinical suspicion because mortality from disseminated TB is very high.<sup>4-6</sup>

## Conclusion

Puerperal disseminated tuberculosis although rare, should be considered in the differential diagnosis of the patient

presenting with fever in the postpartum period. It can lead to significant morbidity and mortality affecting both mother and child. A strong clinical suspicion leads to early diagnosis and consequent adequate treatment.

**Conflict of interest:** None. **Disclaimer:** Nil.

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