



Miliary Tuberculosis Presenting as Septic Shock

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Case Report:

A 95 year old woman was brought to emergency department (ED) by fire rescue with mental status change, fever, and hypotension. In ED, the patient was unresponsive to verbal and painful stimuli. She was intubated for airway protection. Physical examination revealed blood pressure of 83/42 mmHg, Heart rate of 125 breath/min, and temperature of 102°F. Chest auscultation was significant for bilateral diffuse crackles. Laboratory findings were: white blood cell count of 8.0×10^3 , hemoglobin of 14.6 gm/dl, platelet of 121,000, creatinine 1.4 mg/dl, albumin of 2.3 gm/dl, and mildly elevated aminotransferases. Computed tomography (CT) scan of chest showed bilateral diffuse nodular lesions (Figure 1). The patient was treated with fluid resuscitation, wide spectrum antibiotics, and vasopressor medication. The patient developed refractory shock and multiorgan failure. Two sets of blood culture were negative. Unfortunately the patient died shortly after admission to intensive care unit. At autopsy, lung exam showed diffuse 1 to 3 mm tan nodules (Figure 2) with necrotic hilar lymph nodes (Figure 3). Microscopic examination of pulmonary parenchyma showed necrotizing granulomatous inflammation (Figure 4). Tissue cultures grew *Mycobacterium tuberculosis*.

Discussion:

Miliary tuberculosis is a form of progressive tuberculosis resulting from massive lymphohematogenous dissemination of *Mycobacterium tuberculosis* from a pulmonary or extrapulmonary focus to various organs. Miliary tuberculosis accounts for 1-2% of patients with tuberculosis. Predisposing factors for development of military tuberculosis include advanced age, human immunodeficiency virus (HIV) infection, malnutrition, diabetes mellitus, chronic renal failure, organ transplantation, corticosteroids, silicosis, connective tissue disease, immunosuppressive therapy, and pregnancy. Clinical manifestations are nonspecific and include fever, chills, night sweats, weight loss, and abnormal aminotransferases (1, 2, 3). Septic shock, disseminated intravascular coagulopathy, fulminant hepatic failure, pancytopenia, acute renal dysfunction, acute empyema, acute respiratory distress syndrome, and multiorgan failure have been described (3, 4, 5, 6). Examination of the sputum, gastric washing, bronchoalveolar lavage, and blood cultures may be necessary to establish the diagnosis. Miliary tuberculosis is a fatal disease if not treated. Antituberculosis treatment is the cornerstone of management. Adjunctive corticosteroid therapy may be beneficial (1, 2).

References:

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Figure 1. Chest CT scan showing diffuse nodular lesions.



Figure 2. Lung with diffuse involvement by *Mycobacterium tuberculosis*. Note the 1 to 3 mm tan nodules (arrows).



Figure 3. Necrotic hilar lymph node (arrows)

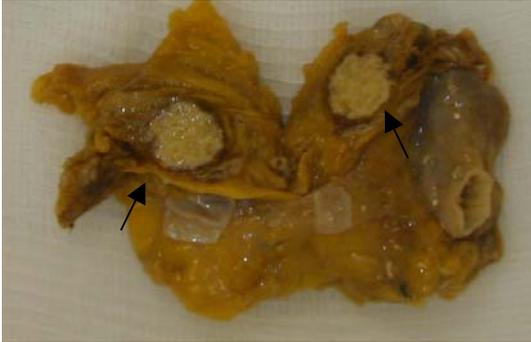


Figure 4. Pulmonary parenchyma with necrotizing granulomatous inflammation (arrow).

