

Pneumonia And Pleural Infiltration As The Initial Presentation Of Multiple Myeloma

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Abstract:

Multiple myeloma is a hematologic malignancy characterized by the proliferation of abnormal plasma cells in the bone marrow. common manifestations include bone pain, osteolytic lesions, and fractures ; systemic symptoms such as anemia, hypercalcemia, and renal impairment are also prevalent.

Extramedullary multiple myeloma (EMM) is an uncommon complication that presents in only 7% of patients with multiple myeloma.

We report in this study a case of pneumonia with pleural infiltration that occurred during the progression of an unrecognized multiple myeloma.

Keywords: *Multiple Myeloma, Pneumonia, Pleural Infiltration*

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I. Introduction :

Multiple myeloma is a complex hematological malignancy characterized by the uncontrolled proliferation of clonal plasma cells in the bone marrow. While it primarily presents with skeletal-related symptoms and systemic manifestations, its clinical spectrum can include less common presentations such as pulmonary and pleural involvement.

Thoracic manifestations, including pneumonia and pleural infiltrations, can sometimes be the initial or predominant signs of multiple myeloma, complicating diagnosis and management.

We report in this study a case of pneumonia with pleural infiltration that occurred during the progression of an unrecognized multiple myeloma.

II. Case Report :

A 67-year-old man with a history of pulmonary tuberculosis treated on 2006 and 2012; chronic smoking and chronic alcoholic, presented to our hospital with dyspnea, cough chest pain epistaxis and hematuria, basal rales were noted over the left lung on auscultation, Laboratory tests were significant for leukocytosis ($13 \times 10^9 /L$, normal range $[3.5-10] \times 10^9 /L$), elevated C-reactive protein (101 mg/mL, normal range <10 mg/L) and total protein (97 g/L, normal range 64–83 g/L), low albumin (26 g/L, normal range 35–52 g/L), and moderate hyponatremia (sodium 127 mmol/L, normal range 135–145 mmol/L)

Initially, Chest Scanner shows left parenchymal condensation (Fig 1)

The detection of Mycobacterium Tuberculosis in sputum is negative. immunological test is normal

The patient was diagnosed with community-acquired pneumonia and started on empirical antimicrobial therapy with amoxicillin and clavulanic acid and levofloxacin.

The progress is good both clinically and biologically during 10 days of treatment; however, the chest CT scan after 3 months shows a mass along the left posterior pleural surface with an erosion of the adjacent right ninth rib (Fig 2).

The Ultrasound-guided pleural biopsy show tumor proliferation of plasma cells and Characteristic immunohistochemical findings include the expression of CD138 confirms plasma cell infiltrate and the presence of light kappa chains.

The bone marrow biopsy confirms the diagnosis of extramedullary plasmacytomas in the setting of Multiple Myeloma.



Fig1: left pulmonary parenchymal consolidations



Fig 2: Mass along the left posterior pleural surface

III. Discussion :

An increased risk of bacterial and viral infections causing substantial morbidity and early mortality secondary to impaired humoral and cellular immune responses is well documented in patients with MM [1,2]. In particular, the burden of Pneumonia including bacteremia is significantly higher (674 cases/100 000 per year vs. 11 cases/100 000 per year in the general adult population) [3].

However, despite this well-documented association, case reports of patients presenting with Pneumonia as the first sign of underlying MM are rare. Kalambokis et al. [4] analyzed data from 17 cases presenting with an acute bacterial infection as the first manifestation of MM. *Streptococcus pneumoniae* was isolated as the causative pathogen in 65% of the cases [5,6] and was associated with bacteremia, septic arthritis, pneumonia, meningitis, and rarely cellulitis. In a large Swedish population based study, Blimark et al. [7] showed that patients with MM had an increased risk of pneumonia and septicemia.

Almost 15%–30% of patients may develop extramedullary involvement during the course of MM. Although rare, thoracic involvement has been reported in patients with multiple myeloma in the form of a lung mass, diffuse reticulonodular infiltration, multiple pulmonary nodules, and nodular pleural thickening (Pleural involvement) with pleural effusion [8]. Pleural plasmacytomas are extremely rare and account for around 3–6% of extramedullary disease in MM patients [9].

In our case, a patient initially presented with pneumonia that improved well under antibiotic therapy, except for the persistence of a pleural mass, for which the biopsy is consistent with pulmonary and pleural plasmacytic infiltration of multiple myeloma.

IV. Conclusion :

this case underscores the importance of considering multiple myeloma in the differential diagnosis when encountering patients with pneumonia and pleural infiltration, particularly when these symptoms persist despite standard treatment ;it serves the necessity for clinicians to remain vigilant for potential underlying malignancies in patients presenting with persistent or unusual thoracic symptoms.

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