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Clinical Image

When Myeloma Extends Beyond the Bone Marrow: A Rare Pulmonary Manifestation

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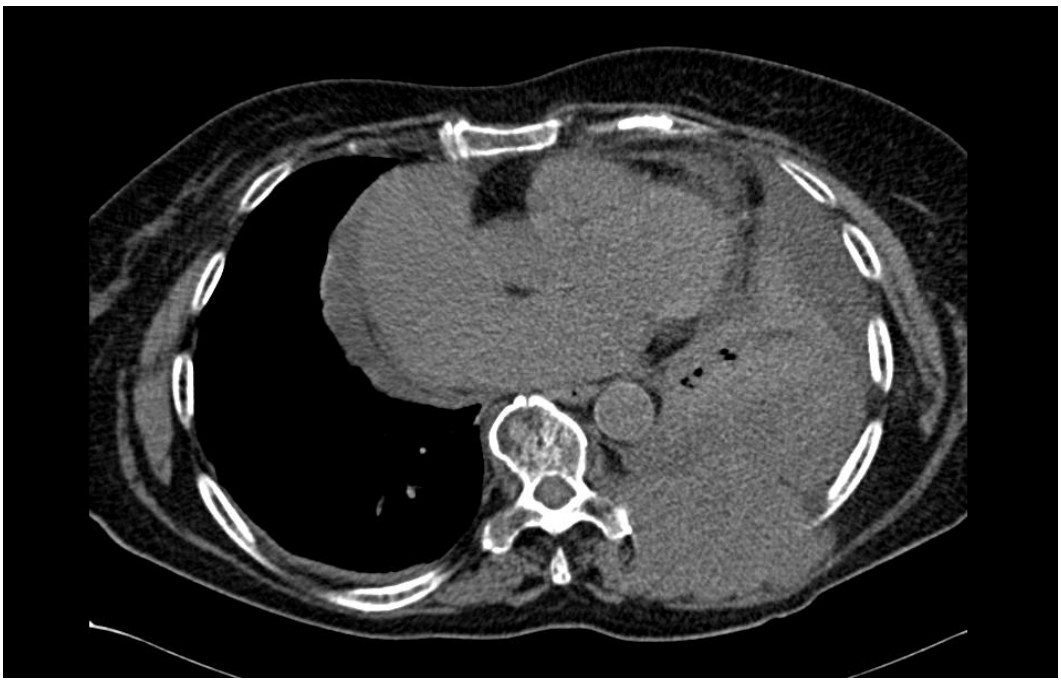

Figure 1: Thoracic computed tomography showing a large left-sided pleural effusion with heterogeneous content, causing near-complete atelectasis of the left lung and a large osteolytic lesion involving the posterior aspect of the left ninth rib, with a prominent soft-tissue component.

A 76-year-old woman presented to the Emergency Room with an episode of intense back pain of a few hours' duration, without radiation. She denied dyspnoea, cough, or fever. Her medical history was notable for a monoclonal gammopathy of undetermined significance (MGUS), diagnosed in 2020 and followed by Haematology, although she had consistently refused bone marrow evaluation. She had no other medical conditions and

took no regular medication. On presentation, she was hemodynamically stable. Peripheral oxygen saturation was 88% on room air, consistent with hypoxemic respiratory failure. Respiratory sounds were absent on the left side, while the remainder of the physical examination was unremarkable. Laboratory studies found normocytic normochromic anaemia (haemoglobin 6.8 milligrams/decilitre), renal insufficiency (creatinine 1.4 milligrams/decilitre), hyperkalaemia (potassium 6.2 millimoles/litre); other parameters, including calcium and cardiac necrosis markers, were within normal limits. Electrocardiogram showed sinus rhythm without signs of myocardial ischemia or peaked T waves. Posteroanterior chest X-ray demonstrated an opacity in the left lower lobe clarified by a thoracic computed tomography (CT) that revealed a large left-sided pleural effusion causing near-complete atelectasis of the left lung. A large osteolytic lesion involving the adjacent rib was also observed, with direct pleural invasion and a prominent soft-tissue component (Figure 1).

A complementary full body CT scan showed no additional bone lesions. Diagnostic thoracentesis yielded a straw-colored exudative effusion by Light's criteria, with low adenosine deaminase and negative cultures. Cytology revealed an increase in atypical plasma cells with a serum free light chain ratio of 2.41. Serum electrophoresis showed an M-spike and immune electrophoresis had an IgG monoclonal protein. Given suspicion of a MGUS progression to multiple myeloma (MM), the patient finally accepted a bone marrow examination, which revealed 52% dystrophic plasmacytosis. A biopsy of the mass was also performed with a similar result. The patient was diagnosed with stage III MM and started on daratumumab, lenalidomide, and dexamethasone. Despite an initial clinical improvement, a week later, she was admitted in an intensive care unit following nosocomial pneumonia with acute respiratory stress and died shortly after.

Pleural involvement in patients with MM is uncommon and is used as an indicator of advanced disease and poor prognosis [1-2]. This case highlights the importance of close monitoring of MGUS patients and early recognition of atypical MM presentations for prompt treatment. Persistent refusal to undergo bone marrow biopsy represents a significant challenge in the surveillance of patients with MGUS, as it limits accurate risk stratification and may delay recognition of progression to multiple myeloma. This case illustrates how the absence of histological confirmation can hinder early detection of disease transformation, particularly when it presents with atypical manifestations and is already at an advanced stage.

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Research Ethics Committee Approval: The patient provided written informed consent for participation, and the study was conducted in accordance with the ethical guidelines outlined in the Declaration of Helsinki.

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Conflicts of Interest: None.

Supplementary Materials: None.

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