Pulmonary Alveolar Microlithiasis: A Case Report

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Introduction

Pulmonary Alveolar Microlithiasis (PAM) is a rare chronic autosomal recessive disorder of the lung parenchyma. It is characterized by the intra-alveolar accumulation of calcium phosphate microliths due to mutations in the SLC34A2 gene, which affects the sodium-phosphate IIb cotransporter on type II alveolar cells. PAM is often diagnosed incidentally through imaging performed for unrelated conditions, as it can be asymptomatic or minimally symptomatic in early stages. We present a case of a 34-year-old male whose diagnosis was established incidentally through radiologic imaging during evaluation for chest pain and shortness of breath.

Methods

The patient, a 34-year-old male with a medical history of heart failure, coronary artery disease, diabetes, hyperlipidemia, and schizophrenia, presented to the emergency department (ED) with chest pain, shortness of breath, and bilateral leg swelling. Vital signs on presentation were notable for a heart rate of 113 beats/min, blood pressure of 148/87 mmHg, respiratory rate of 20 breaths/min, and oxygen saturation of 98% on room air. Physical examination revealed diminished breath sounds without pleural rubs or wheezing, nonspecific ST-T wave changes, a soft S1, fixed S2 (without murmurs), and bilateral 2+ pitting edema. Initial workup included a chest radiograph alongside a computed tomography (CT) scan of the thorax.

Results

Imaging demonstrated prominent bronchovascular markings, heterogeneous airspace disease, and bilateral multiple punctate calcifications. CT findings revealed clustered calcified nodules in the upper and lower lung lobes, consistent with the characteristic “sandstorm lung” appearance of PAM. Additionally, radiolucency of pulmonary calcifications was observed in the area immediately underlying the ribs, consistent with the “black pleura” sign of PAM—also recognized as subpleural sparing. These pathognomonic imaging features led to the establishment of PAM as an incidental diagnosis in this case. The patient was managed conservatively with supportive care, symptom control, and close follow-up.

Conclusion

This case underscores the diagnostic value of characteristic radiologic imaging findings in identifying PAM, especially in patients with nonspecific or unrelated clinical presentations as is typical for the presentation of this disease. Although there is no definitive treatment for PAM, early recognition through imaging facilitates appropriate monitoring and supportive management to mitigate progression to respiratory failure.