Benign but Deceptive: A Rare Pulmonary Neoplasm Micmicking Malignancy – Case of Sclerosing Pneumocytoma in a 26-Year-Old Female

Abstract

Background: Sclerosing pneumocytoma (SP) is a rare, benign pulmonary tumor that may mimic primary lung carcinoma. While most cases occur in middle-aged women, it can occasionally present in younger patients, rarely with hemoptysis.

Case Presentation: A 26-year-old woman with hemoptysis had a right lower lobe mass. Biopsy suggested neoplasm; lobectomy with lymph node dissection confirmed sclerosing pneumocytoma. Though benign, it mimics malignancy. Surgical resection provides definitive diagnosis, cure, and excellent prognosis.

Keywords: Sclerosing pneumocytoma, hemoptysis, lobectomy

Introduction

Sclerosing pneumocytoma (SP), formerly called sclerosing hemangioma, accounts for less than 1% of primary lung tumors. Described in 1956 by Liebow and Hubbell, it is now classified by the World Health Organization as an epithelial tumor of primitive respiratory origin rather than vascular. Common in non-smoking Asian women in their fourth to sixth decade and is often detected incidentally. Although generally asymptomatic, SP may present with cough, chest pain, or, rarely, hemoptysis. Its diverse radiographic and histological patterns can mimic primary lung carcinoma, making surgical resection necessary for both definitive diagnosis and treatment.

Case Presentation

A 26-year-old female, non-smoker with no comorbidities, presented with two months of intermittent blood-streaked sputum after a hiking trip. She denied fever, weight loss, or dyspnea. Physical examination was unremarkable except for slightly decreased breath sounds at the right lung base.

Chest X-ray showed a right lower lobe opacity. Contrast-enhanced CT demonstrated a 3.8 × 4.0 cm well-circumscribed, heterogeneously enhancing mass in the posterior basal segment of the right lower lobe. Core needle biopsy suggested a round cell neoplasm, raising concern for malignancy. Review of slides

favored SP. The patient underwent right posterolateral thoracotomy with right lower lobectomy and lymph node dissection (stations 4R, 7R, 8, 11R). Frozen section suggested SP. Gross pathology revealed a 3.5 cm tan-pink mass with cystic and hemorrhagic areas. Final histopathology confirmed SP, with negative margins and lymph nodes. The postoperative course was uneventful and patient was discharged in good condition

Discussion

SP is rare and most frequently diagnosed in women aged 40–50, though younger cases exist. Hemoptysis, as in this case, is uncommon and usually attributed to the tumor's hemorrhagic component. Histologically, SP demonstrates dual cell populations: surface cuboidal cells and stromal round cells. Four growth patterns—papillary, sclerotic, solid, and hemorrhagic—are commonly seen in combination. Immunohistochemistry typically shows TTF-1 and EMA positivity in both cell types, while cytokeratin expression is limited to surface cells.

Although considered benign, incidence of lymph node involvement is at 5-7%. Thus, complete surgical resection with lymph node dissection is advised. Recurrence is exceedingly rare, and long-term prognosis is excellent. This case is notable due to the patient's young age and presentation with hemoptysis, which initially raised suspicion for malignancy and justified surgical intervention.

Conclusion

Sclerosing pneumocytoma is a rare pulmonary neoplasm that can closely mimic malignancy both clinically and radiologically. Awareness of this entity is vital in evaluating pulmonary masses, including in younger patients with hemoptysis. Surgical resection remains the gold standard, providing both definitive diagnosis and curative treatment, with excellent outcomes.