Follicular Lymphoma Presenting with Plastic Bronchitis

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Introduction

- Plastic bronchitis (PB) is a rare condition characterized by thick, rubbery mucus plugs that form in the airways, known as bronchial casts. It is most frequently encountered in pediatric patients with congenital hear disease following the Fontan procedure [1].
- It was also linked to conditions that increase the volume or thickness of bronchial secretions including bacterial lung infections, asthma and cystic fibrosis. Additionally, bronchial cast formation has been observed in cases where lymphatic fluid leaks into the bronchi [2,3].

Case Presentation

- A 43-year-old woman with a history of asthma was admitted for recurrent episodes of bronchitis and pneumonia, presenting with worsening cough and chest discomfort.
- Imaging revealed mediastinal and mesenteric lymphadenopathy (LAD) along with multiple ground-glass opacities. Bronchoscopy identified bronchial casts and biopsy revealed fibrin and mature lymphocytes.
- Nuclear lymphatic imaging demonstrated impaired lymphatic drainage with lack of tracer in mid abdomen due blockage by central mesenteric nodes. She was treated with oral antibiotics and steroids which resulted in initial improvement of her symptoms .

Case Presentation (Cont')

- On follow-up, two months later, she had persistent respiratory symptoms and was coughing up bronchial casts (figure1). Therefore, thoracic duct embolization was performed which revealed abnormal drainage with leakage into the bronchial artery.
- Peripheral blood flow cytometry showed a monoclonal population of B lymphocytes (Figure 2).
- A right axillary lymph node biopsy was subsequently performed which showed classic follicular lymphoma (Figure 3).
- On follow-up, respiratory symptoms resolved following treatment with Rituximab and Prednisone.

Figure 1. Bronchial Cast.

Case Presentation (Cont')

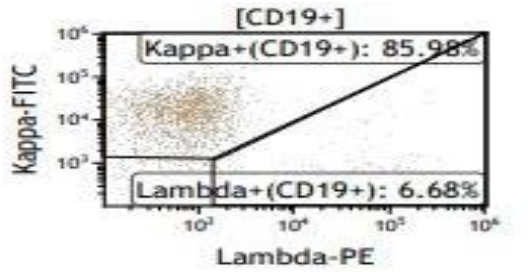

Figure 2. Peripheral blood flow cytometry showing a monoclonal B cell population

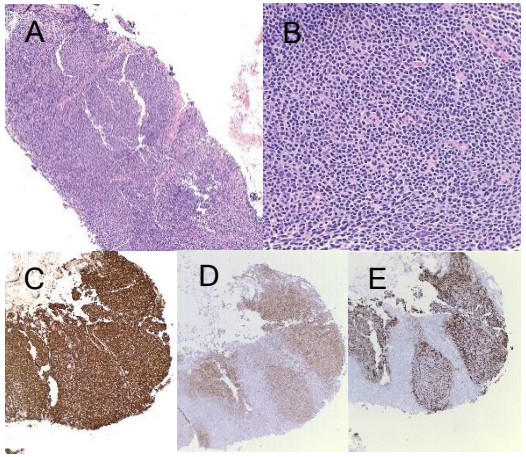

Figure 3. Lymph nodes biopsy. A. (H&E. 200X). B. (H&E. 400X). C. CD20. D. CD10. E. CD21.

Discussion

- Plastic bronchitis represents a unique diagnostic challenge due to its association with diverse etiologies, including lymphatic dysfunction and infections including COVID-19. Thoracic duct embolization is an effective therapeutic intervention in cases with underlying lymphatic leakage.
- In a study that compared magnetic resonance lymphangiography and thoracic duct lymphangiography in 28 patients with non-traumatic chylothorax and lymphatic plastic bronchitis, 26 cases showed similar imaging findings indicating a shared pathophysiology of both conditions [3].
- Follicular lymphoma may exacerbate lymphatic dysfunction, as seen in this case. Proper identification of the dual pathology was critical in guiding treatment, including lymphatic intervention, steroids and rituximab-based therapy.

Conclusion

- Determining the underlying cause of plastic bronchitis is crucial, as it may indicate a serious underlying condition.

References

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