Unusual Cause of Recurrent Wheezing in an Infant

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Introduction

Recurrent wheezing in children is common but not all wheezing is asthma. If not responding to usual treatments, thorough evaluation to rule out other underlying etiologies is warranted. We present an atypical cause of recurrent wheezing in an infant. Case Report

A 10-month-old African American ex-full term male and no significant past medical history presented with recurrent wheezing. Interim history is significant for three hospitalizations, including ICU for respiratory distress and hypoxemia. He received antibiotics, steroids, and bronchodilators. He tested positive for adenovirus and parainfluenza virus by nasal swab PCR during one of the hospitalizations. He was managed as asthma with bronchodilators and nebulized budesonide with minimal improvement. He was then referred to pediatric pulmonology for further evaluation. Physical examination in clinic revealed hypoxia (oxygen saturation 88% on room air) with respiratory distress and was hospitalized for further management. A chest radiograph demonstrated right upper lobe atelectasis with right lower lobe collapse and perihilar infiltrates. Cardiac work up was unremarkable. CT angiography of the chest ruled out vascular abnormalities. Bronchoscopy revealed normal airway anatomy. Broncho-alveolar lavage culture was positive for Haemophilus influenza. A sweat chloride test, serum quantitative immunoglobulin assay, genetic testing for cystic fibrosis and primary ciliary dyskinesia were unremarkable. He was treated with antibiotics, steroids and bronchodilators, and discharged after symptomatic improvement. His symptoms recurred after 1 month, despite maintenance and rescue inhalers, and was retreated. Due to continued symptoms, CT chest obtained revealed air trapping, bronchiectasis and mosaic pattern. Based on clinical presentation and imaging, diagnosis of Bronchiolitis Obliterans (BO) was made, most likely post-infectious. He was started on pulse steroids, thrice weekly Azithromycin, and airway clearance with significant improvement in symptoms and frequency of exacerbations. Discussion

BO is a rare cause of chronic obstructive lung disease occurring after a severe insult to the lower airway tracts. Pathophysiology involves chronic inflammation of bronchiolar epithelial and subepithelial cells leading to scarring, narrowing and fibrosis of bronchioles. In children, the most common form of BO is Post-Infectious Bronchiolitis Obliterans (PIBO) which occurs after viral/bacterial infection. Lung biopsy, although considered the gold standard, is generally not required for diagnosis when classical CT findings are present but if deteriorating even after treatment. PIBO has high morbidity and patients with recurrent exacerbation requiring frequent hospitalizations, so early diagnosis is crucial. In conclusion, pediatric patients who fail to respond to conventional treatment for recurrent wheezing warrant further evaluation for other etiologies.
This abstract is funded by: n/a

Am J Respir Crit Care Med 2020;201:A1994
Internet address: www.atsjournals.org