

064 Plastic bronchitis in children: A case series

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Background

Plastic bronchitis (PB), which is a rare pulmonary disease, characterized by the formation of endobronchial casts of undefined etiology. The pathogenesis is still not fully understood, however it is characterized by the presence of large, thick, mucofibrinous plugs filling the broncho-pulmonary tree, leading to severe respiratory distress.

Case Report

We reported 4 cases of plastic bronchitis with common manifestations (respiratory distress) for uncommon disorder, as a first serial cases from Middle East Area according to our knowledge.

Case1: A-3 years old girl, who was previously healthy, presented with history of chronic cough for the last 5 months. Physical examination revealed markedly diminished chest movement and breath sound on left side. The diagnosis of foreign body in left main bronchus with complete atelectasis of left lung was made. The patient underwent rigid bronchoscopy by ENT Surgeon and reported there was cheesy like material occluded the left main bronchus.

Case 2: 9-year-old girl, previously healthy, she suddenly developed shortness of breath and apnea. The patient was deteriorating so she was transferred to PICU and electively intubated for 7 days. Bronchoscopy was done for the patient, and it revealed a thick secretion mainly in the right upper lobe. There was a cast which was seen in the superior segment of the right lower lobe.

Case3: 6 years old boy case of Complexed Congenital Heart Disease. Admitted with history of Shortness of breath and productive cough. Started shortly to have thick sputum then patient expectorated casts of gelatinous material for 4 days. The patient underwent Flexible Bronchoscopy which showed thick secretions but no casts.

Case4: A 3-year-old boy previously healthy presented with history of fever, cough and shortness of breath of 1-week duration. The mother gave history of expectorated whitish material few days prior to his admission. He underwent Flexible Bronchoscopy which showed a thick secretion mainly in the left upper lobe, lingual and right lower lobe. There was a cast which was seen in the left upper lobe. A few casts were expectorated during suction.

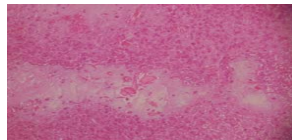
Discussion

The gold standard for the diagnosis of PB is the detection of bronchial dendritic casts with flexible bronchoscopy [4]. These casts were detected in all our case with flexible bronchoscopy except in the case number 3 his bronchoscopy showed clear airways, however he expectorated a lot of casts during his admission. Histopathology examination of specimens revealed mucus, fibrin, inflammatory exudate with ghost of inflammatory cells, charcot crystals, and eventually, a diagnosis of PB was rendered in all patients. Treatment of plastic bronchitis consists of bronchoalveolar lavage and FB aspiration. Rigid bronchoscopy was required for aspiration and extraction of the material in 3 cases. The patient with congenital heart disease did not require rigid bronchoscopy as he expectorated the all casts before the procedure. Prognosis is generally good, except in cases with congenital heart diseases, in which mortality can be as high as 29%, 13 and 41%. [16].

All our cases had good progress with satisfactory recovery and no death.



Expectorated casts from the patient during his admission



charcot crystals (arrow)

Conclusion

Plastic bronchitis is an uncommon process. However, it must be taken into account in patients with recurrent/ persistent atelectasis and in case of a suspected foreign body. Patients with asthma are at great risk, other risk factors include underlying congenital heart disease, bronchopulmonary aspergillosis, sickle cell acute chest syndrome, and lower airway infections including adenovirus and mycoplasma organisms. Flexible bronchoscopy should be performed early to confirmation and clearance of airway obstructions.

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