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An Unusual Case of Foreign Body Inhalation Presented as New Onset “Bronchial Asthma"

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Abstract

We present an interesting case of new onset of "adult-onset asthma" in a 50-year-old male with new onset of wheeze and cough treated with inhaled bronchodilators and steroids with very little benefit in symptoms. Despite a normal reported chest radiograph, Bronchoscopy confirmed a granulated mass obstructing bronchus intermedius causing near complete occlusion, same was confirmed on Commuted Tomography and subsequently was removed by bronchoscopy resulting in complete cannulation and resolution of all symptoms.

Introduction

Foreign body inhalation (FBI) is relatively common amongst the paediatric population and can be life-threatening (1) but is rare amongst adults with a reported incidence of around 0.25% (2). Most adults with foreign body inhalation have identifiable risk factors i.e. neurological illness, substance misuse or dental problems (3). Organic foreign bodies are more frequently encountered than the inorganic ones and the time lag from inhalation to extraction is generally much longer for the organic FBI (4). Bronchiectasis is the commonest adverse effect of FBI with delayed extraction as around 25% of patients with more than 30 days delay in diagnosis develop this complication(4).Bronchoscopy (either flexible or rigid) is the mainstay of treatment, however a small number of cases require surgical intervention

We present an interesting case of adult FBI with delayed extraction due a misdiagnosis as bronchial asthma.

Case Report

50-year-old male non-smoker was referred to pulmonary clinic for assessment of poor controlled asthma, which manifested by symptoms of cough, dyspnoea and wheeze over the last 7 months despite having been on adequate inhaled bronchodilator and corticosteroid therapy with good compliance and technique. He had 3 ER attendances in last 7 months requiring nebulised bronchodilation, systemic steroids and antibiotic therapy with a little relief to his symptoms.

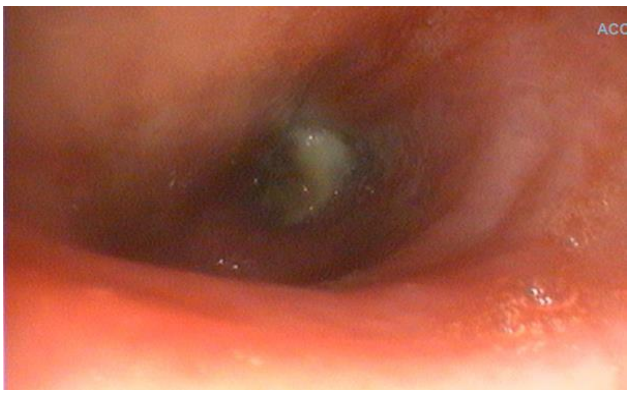
The detailed history in pulmonary clinic revealed that seven months prior to referral and prior to start of his asthma symptoms and diagnosis, patient had choked on a "Paan" (a preparation combining betel leaf with betel/areca nut along with chewing tobacco and flavouring agents) which raised the suspicion of organic FBI.

On examination he had audible rhonchi bilaterally but more pronounced on the right side. Plain chest radiographs had been reported as normal thrice in last 6 months and the initial request for CT chest by pulmonologist was declined by patient's insurance.

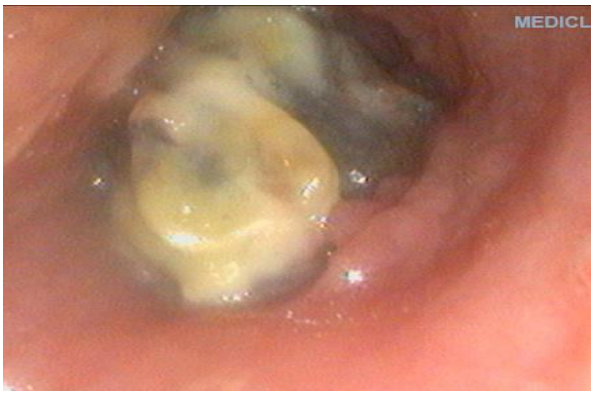
Due to high index of clinical suspicion the pulmonology team performed a flexible bronchoscopy which revealed a granulated mass obstructing bronchus intermedius (pictures 1 and 2) leading to near complete occlusion. Biopsies and brush cytology were taken from the mass which confirmed the biopsy material samples as an organic foreign body including plant material mixed with lymphocytic infiltrate. (Picture 3 and 4):

Chest CT scan performed after bronchoscopy confirmed the obstructing mass in bronchus intermedius (Pictures 5, 6 and 7) without significant lymphadenopathy.

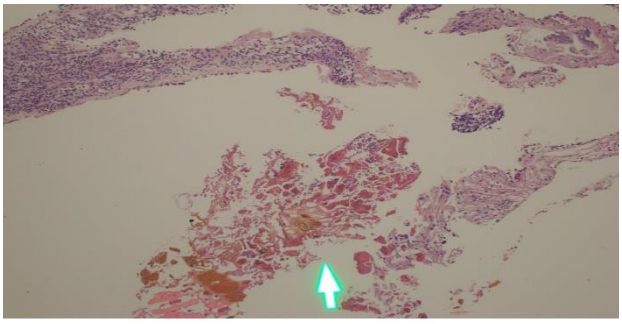
Patient was referred to interventional pulmonology unit at the local tertiary care hospital and underwent rigid bronchoscopy with complete extraction or the foreign (Picture 8, 9 and 10)



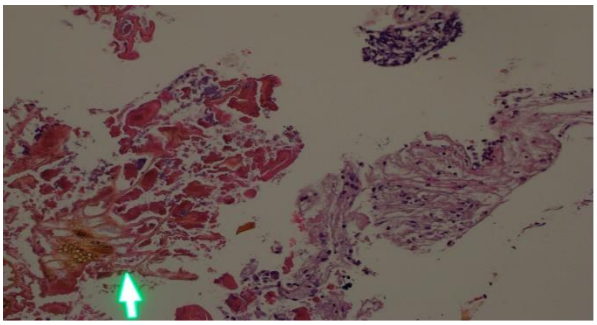
Picture 1



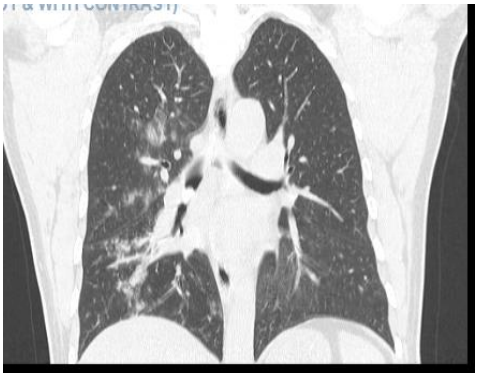
Picture 2



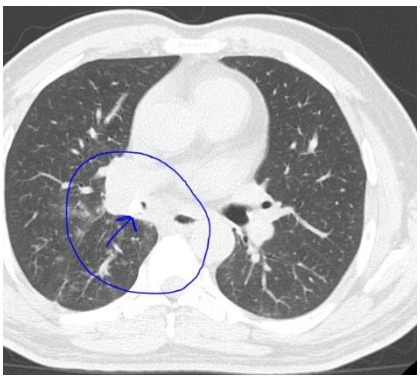
Picture 3



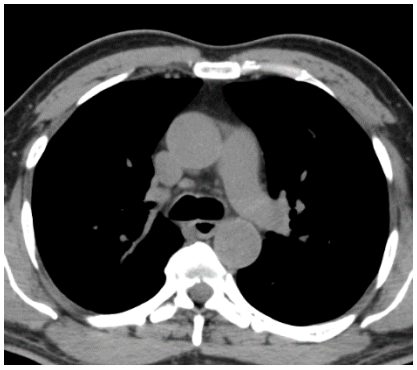
Picture 4



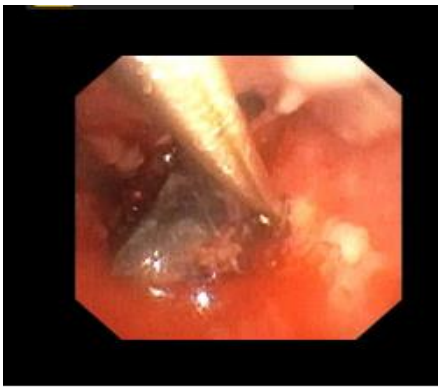
Picture 5



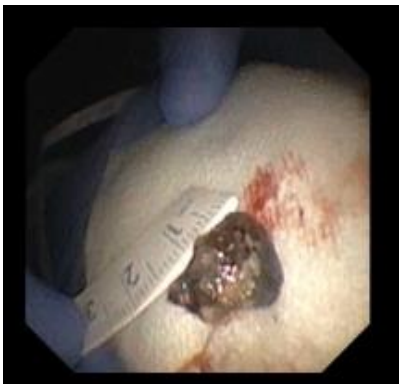
Picture 6



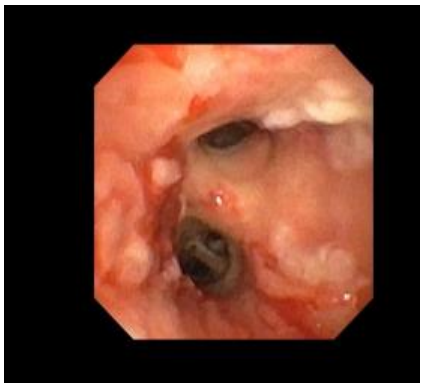
Picture7



Picture 8



Picture 9



Picture10

Discussion

Although uncommon, the FBI in adults is a completely treatable condition and prompt diagnosis leads to prevention of future long-term complications such as bronchiectasis.

Asthma is one of the commonest respiratory illnesses with a worldwide prevalence of more than 300 million patients (5). Wheeze is a common symptom of FBI, hence, can lead to misdiagnosis of asthma(6). Betel nut chewing in its pure form or in combination preparations such as “Paan” is common in south and southeast Asia and has previously been reported in literature as cause of FBI very occasionally (6,7). To complicate the matters, the betel nut extract has been shown to cause bronchoconstriction in bronchial challenge testing and hence betel nut chewing has been suggested as a possible cause for asthma or asthma exacerbation(8).

To make an accurate and prompt diagnosis of FBI, the index of suspicion for alternative aetiology for wheeze has to be high in cases of newly diagnosed asthma especially when symptoms are persistent despite adequate treatment. Our patient has been to three different healthcare centres, seeing multiple

doctors and diagnosis of asthma was entertained with optimization of treatment each time and despite lack of response, possibility of an alternative explanation to his symptoms was not entertained.

Conclusion

Focused history taking, having high index of suspicion lead to insistence on bronchoscopy despite the normal reported plain chest radiograph, which can be relatively normal especially if there is no significant lung collapse or consolidation.

Every wheezy patient is not asthmatic and basic principal of detailed history taking and physical examination cannot be overemphasised in its value to rule out alternative diagnosis which was an endobronchial foreign body in our case.

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