Case Report

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Isolated Pleural Effusion- An Interesting Case Report of Foreign Body Aspiration-A Case Report

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Abstract

Foreign body (FB) aspiration is a serious medical problem that can mimic other respiratory conditions. Isolated pleural effusion is a rare presentation of FB aspiration. We report herein a six years old boy presenting with fever and cough without history of choking and respiratory distress and X-ray chest suggestive of pleural effusion. Although, the child was initially misdiagnosed as pneumonia with sympneumonic effusion, the diagnosis was established only once he coughed out a piece of foreign body. The present case highlights that FB aspiration, even though rare, should be considered as one of the differential diagnosis of pleural effusion.

Introduction

Foreign body (FB) aspiration is a salient cause of childhood mortality and morbidity. It is a serious medical condition that requires immediate attention and prompt action.[1] Majority of the FB are organic in nature and more often gets lodged in the right bronchus.[2,3] FB aspiration is common in pre-school aged children and boys are more frequently involved.[4] The most common presentation is acute onset of respiratory distress with sudden coughing or choking episode.[5] The diagnosis is usually missed in the absence of accurate history and classical clinical presentation. We report an interesting case of FB aspiration in a six years old boy who presented with pleural effusion without any respiratory distress.

Case Report

A six years old boy presented with complaints of fever for four days and cough for two days. On examination, he was hemodynamically stable with respiratory rate of 28 / min without any retractions, HR of 100 / min and SPO_2 96% at room air. Systemic examination was normal except for dull percussion note and decreased breath sounds over the right infra- scapular and infra- axillary area. Chest radiography showed right lower zone homogenous opacity with blunting of costophrenic angle (Figure 1). Ultrasound chest showed right sided consolidation with sympneumonic effusion. Laboratory parameters showed haemoglobin of 12.3 gm%, WBC of 10,800 mm^3 with 76% polymorphs and C - reactive protein of 14 mg / l. A possible diagnosis of community acquired lobar pneumonia with sympneumonic effusion was kept and intravenous antibiotics were started after sending the blood culture. Child improved symptomatically with resolution of fever spikes within 24 hours after starting antibiotics, though intermittent cough was persisting. Blood culture was sterile and repeat blood counts after 72 hours were normal. On the fourth day of admission, child coughed out a small piece of peanut after a bout of severe coughing. On further inquiry, we did

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not get any history suggestive of aspiration. Based on the clinical symptoms and chest radiography findings, rigid bronchoscopy was done and a small piece of peanut was extracted from the right bronchus. Repeat chest radiography done after bronchoscopy showed mild right lower lobe collapse with clear costophrenic angle (Figure: 2) and the child was discharged home. On follow up one week after bronchoscopy, the child was doing well with subsidence of intermittent cough.

Discussion

Aspiration of FB is a medical emergency that can be fatal, if it remains undiagnosed.[1,6] The clinical presentation of FB aspiration is varied, frequently presenting as acute onset respiratory distress with sudden choking or coughing episode. If the diagnosis is missed, patients can present later as chronic refractory pneumonia or as chronic obstructive symptoms that mimic asthma.[4,5] The diagnosis of FB aspiration requires a high level of suspicion, as history of aspiration and characteristic clinical presentation might not be present in all the cases. In our case too, the diagnosis was missed initially due to the presence of pleural effusion and a history of fever with cough. Presence of fever in our child could be due to the associated infection that resolved after starting antibiotics. Isolated pleural effusion is a very rare presentation of FB aspiration in children and only two paediatric cases have been reported in the literature. Auerback ML in 1990 reported a case of three years old child presenting as isolated pleural effusion with a history of vegetable FB aspiration which was later removed by bronchoscopy.[7] In another case, an 11 month old boy presented with an acute onset of respiratory distress

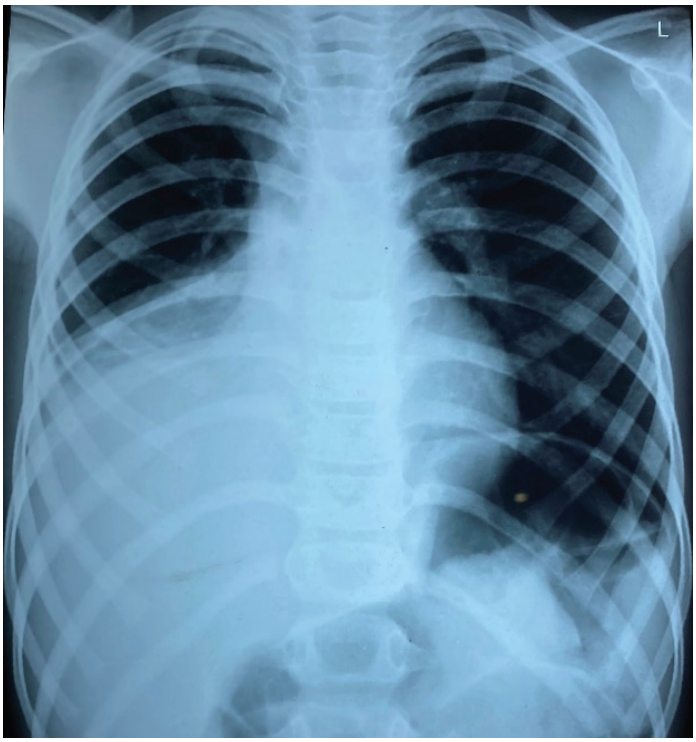

Figure 1: CXR on admission showing right side pleural effusion

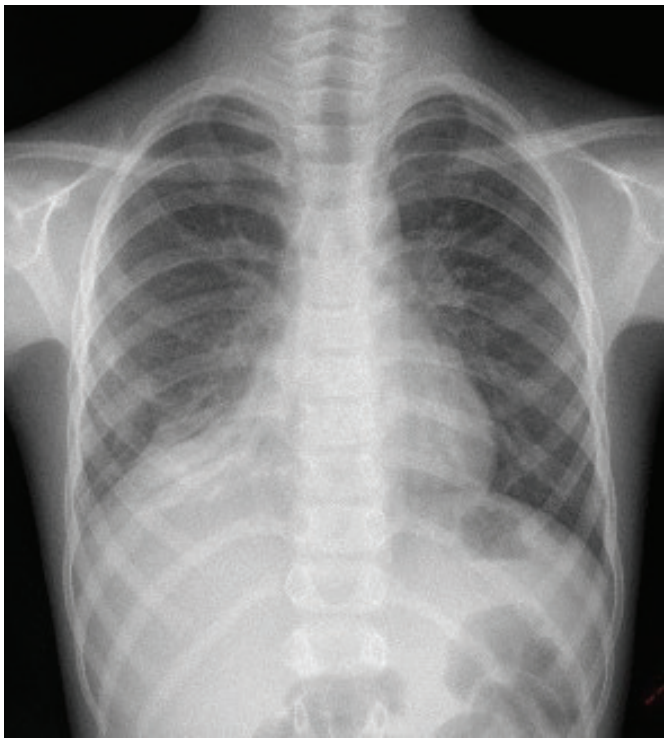

Figure 2: Post bronchoscopy CXR showing right middle lobe collapse

due to pleural effusion following aspiration of a piece of Bengal gram.[8] Both cases presented with acute onset respiratory distress. Inflammatory reaction to the FB in the tracheobronchial tract could be the main reason for this pleural effusion, though the exact process is uncertain. In our child, there was no obvious history of aspiration and there was no respiratory distress at the onset. In addition, the symptoms were mild and presence of fever with cough led us to the diagnosis of community acquired pneumonia with sympneumonic effusion. The diagnosis of FB aspiration in our case became evident only once the child coughed out a piece of peanut following which rigid bronchoscopy was done and the remaining piece was removed.

Literature search revealed that majority of these foreign bodies are organic in nature, peanuts being most commonly detected. The presentation of aspirated FB is also varied ranging from acute fatal asphyxiation to delayed recurrent and chronic pulmonary infections.[4] Moreover, the amount of airway blockage, the nature and the site of the FB too influences the clinical picture.[2,6] Hence, diagnosis should be made by having a high index of clinical suspicion complemented by detailed history and clinical signs and supportive radiological findings. Chest radiography may show abnormal findings of atelectasis or collapse, differential hyperinflation or consolidation, but these findings are not very specific to FB aspiration.[6,9] In case of any doubt based on clinical history or CXR findings, bronchoscopy should be done at the earliest

both for definitive diagnosis and removal of FB if present. Some of these FB are coughed out spontaneously before the procedure as in our case. If this FB is retained in the tracheobronchial tree, it may cause recurrent pulmonary infections, lung abscess, bronchiectasis and pleural effusion.[2,3] Hence, this condition should be diagnosed at the earliest to prevent these complications. In addition, flexible bronchoscopy should always be performed in all doubtful cases, if there is slightest suspicion of FB aspiration.

Conclusions

FB aspiration though common in preschool aged children, should be suspected at any age in patients presenting with respiratory symptoms. Paediatricians should suspect and include this diagnosis in the differentials of any child presenting with respiratory conditions like pneumonia, pleural effusion or bronchial asthma that may mimic FB aspiration. We also emphasise the importance of suspecting FB aspiration in any child with persistent respiratory symptoms even in the absence of classical history and clinical presentation.

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