Foreign Body Aspiration in an Adult: The Great Mimic

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SUMMARY

A middle-aged lady presented with a three-month history of chronic cough. After a long and extensive investigation, CT thorax revealed collapse consolidation of the right lower lung lobe and bronchoscopy showed a polypoidal tumour within the involved bronchus. Thoracotomy and segmental lung resection revealed a peanut in the airways of the fibrotic and infected lung tissue. In view of the rarity of the food particle aspiration in a healthy adult, the delay in presentation and diagnosis in our patient, we would like to highlight this particular case. A high index of suspicion of FBA is necessary to avoid unnecessary anxiety, extensive investigations and overzealous treatment as well as to promote lung conservation.

KEY WORDS:
Aspiration, Foreign body

INTRODUCTION

Foreign body aspiration (FBA), particularly peanut, is rare in adults. In a 20-year review of peanut aspiration incidence, there was only one adult case reported compared to 39 cases in children[1]. FBA is usually seen in susceptible adults with risk factors such as neurological disorders, alcohol intoxication, poor dentition and sedative use. Patients are usually male and elderly[2]. In this group of patients, usually they remain asymptomatic. This can be associated with considerable morbidity and mortality resulting from delayed presentation. In a healthy adult, however, the acute presentation at the time of incident is more common. Among the elderly, the diagnosis of FBA is usually entertained after excluding bronchogenic carcinoma and chronic lung infection[3]. Consequently, this diagnostic delay can hamper chances of lung conservation therapy.

CASE REPORT

A 59-year-old housewife presented to the respiratory physician complaining of worsening cough of 3-month duration, which was worse at night and associated with wheezing. There was no obvious exacerbating factor. The cough was productive of yellowish sputum with no haemoptysis. She had neither history of appetite and weight loss nor symptoms of night sweat or fever. Although there is a strong family history of bronchial asthma and passive smoking, she had no respiratory difficulties prior to her first presentation. There was no significant contact or travel history. Clinical examination was unremarkable initially. Chest radiograph (CXR) revealed consolidation at the right lower zone with minimal pleural effusion. Her sputum was sterile. Pulmonary function test (PFT) revealed a restrictive airway pattern. ESR was raised.

She was initially treated with antibiotics for community-acquired pneumonia. Her condition, however, did not improve, with similar PFT profile. A month later, the right lower lung zone was noted to have reduced breath sounds but CXR demonstrated an improvement. This persisted into the second month of presentation. Despite optimizing her medications, she remained symptomatic. A CT thorax in the third month of presentation showed a collapsed, consolidated right lower lobe (RLL) segment (Figure 1). Bronchoscopy was performed and a polypoidal tumour was noted with 80% occlusion of the laterobasal segmental bronchus of the RLL, with infiltrative mucosa extending to the distal bronchus intermedius. A biopsy was taken but histopathological examination (HPE) was inconclusive. With a suspicion of bronchogenic carcinoma, fibrotic and infected lung, a thoracotomy was performed under general anaesthesia with single-lung ventilation via a 35F-sized double lumen endobronchial tube. Intra-operatively, there was no apparent malignant lesion noted. This led us to consider the remote possibility of a FB. Therefore, the bronchus was palpated and a small, firm, mobile mass was appreciated. Subsequently, bronchotomy was done at the proximal RLL bronchus. Our suspicion was confirmed when a half piece of peanut was identified and subsequently removed (Figure 2). After bronchotomy closure, the lobe was tested. However, there was no re-expansion. It appeared fibrotic with multiple small abscesses seen. We proceeded with right lower lobectomy. Intraoperatively, there were also multiple soft oedematous peribronchial lymph nodes noted. HPE revealed an organised non-resolving segment of RLL, with reactive lymphadenopathy. The patient had no post-operative complications and continued to enjoy an uneventful recovery at 3-month follow-up.

DISCUSSION

FBA in adults can go unnoticed, especially when there is no asphyxiating symptom[1]. Although rare, adult FBA seems to have a geo-cultural influence with public health implications[2,3]. Organic material aspiration involving seeds, nuts, vegetables and bones is most commonly encountered[2]. In South East Asia, where betel nut chewing is practiced, accidental inhalation has been reported. Among the Chinese who eat rice and meat with chopsticks which require a suction effort, bony fragment aspiration has been

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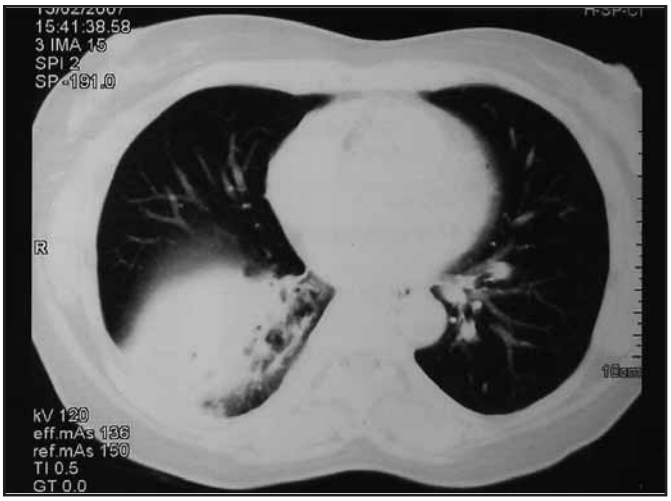

Fig. 1: CT thorax slice showing collapsed consolidation of the right lower lobe.

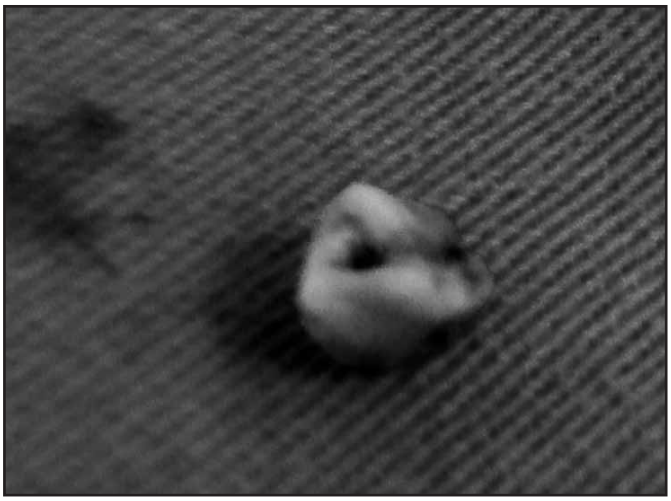

Fig. 2: A half piece of peanut retrieved.

highlighted[2]. Aspiration of inorganic objects such as headscarf pin is a public health concern among Turkish ladies[3]. Compared to children, adults with FBA have a wide ranging presentation from completely asymptomatic to those of sequelae of pneumonia. In children, the triad of wheeze, cough and reduced lung air entry usually raises the suspicion of FBA[1]. Unlike those who present with acute asphyxiation or witnessed aspiration, FBA in adults can go unnoticed even for years, or be associated with non-specific respiratory symptoms such as chronic cough, haemoptysis, fever and dyspnoea[4]. The 'penetrating symptoms'- defined as sudden onset of choking, intractable cough with or without vomiting? has been described to be the most predictive of adult FBA[3,5].

Our patient first presented three months after suffering from chronic cough. She has no recollection of consuming peanuts or asphyxiating episode. This delayed presentation can be attributable to larger airways which only become irritated once the aspirated particle becomes dislodged in the peripheral airways or when the bronchial inflammation developed. Thus, the lack of specificity in clinical features resulted in a delay in diagnosis. Furthermore, given her clinical profile, an array of investigations was performed because the prevailing concern was to exclude malignancy and chronic lung infection such as tuberculosis. Although CXR is usually the first line of investigation, between 6 and 80% of radiographs have negative findings[4]. Furthermore, only 15.7% of all FBs were radiopaque, with a majority being food in origin[5]. A CT thorax is not frequently requested but this is indicated if there is high index of suspicion regarding chronic pulmonary changes due to the prolonged presence of FB[5]. Rigid bronchoscopy enables initial visualization and retrieval of FB[1]. However, delay in diagnosis could result in inflamed and granulation tissue forming around FB, thus it is not visualized and retrieved at bronchoscopy. Surgery is indicated for various differential diagnoses, as in our patient. Thoracotomy and pulmonary resections are indicated in peripherally located FB, failure of prior interventions including bronchoscopic retrieval, an embedded FB and long-standing FB with irreversible lung parenchymal changes[1,5]. Although there may be long-term pulmonary disability, resection of lung segment is justifiable in view of unsuccessful bronchoscopic therapy, which in itself, is not without complications.

CONCLUSION

FBA should be suspected in adult patients with chronic cough. A high index of suspicion is required even in those without risk factors for aspiration. Otherwise, patients will be subjected to unnecessary anxiety, time-consuming procedures and investigations. Furthermore, this delay could have caused irreversible lung damage especially in elderly patient who already has reduced respiratory function. Ultimately, patients are subjected to a high-risk surgery. Bronchoscopy is helpful but as explained above, localization and retrieval of FB may not be possible. Thus, surgical resection is still an acceptable form of treatment for long-standing FBA associated with an irreversibly damaged lung segment, despite potential risk involved.

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