Reminder of important clinical lesson

Bilateral airway foreign body aspiration as a cause of recurrent pneumonia

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SUMMARY

Foreign body aspiration (FBA) into the lower airway requires a high index of suspicion. Identification of the problem can be difficult as it has a broad range of clinical presentation and often mimics other medical conditions. A delay in diagnosis and management can result in serious complications. The authors report the case of a middle aged man with bilateral airway FBA who had a history of six hospitalisations over the previous 10 years with recurrent pneumonias.

BACKGROUND

Foreign body aspiration (FBA) into the tracheobronchial tree is known to occur in all age groups.^{1 2} However, it is unusual in adults, who often have a primary predisposing

condition such as neurological disease, mental retardation or alcohol or sedative misuse.^{3 4} Our case is unique as there were no underlying risk factors for aspiration and there were bilateral foreign bodies. FBA into the lower airways

Figure 1 Chest x-ray (posteroanterior view) showing the right mid and lower zone infiltrates.

Figure 2 Bronchoscopic picture of a betel nut in the right upper lobe bronchus with mucous.

of healthy adults is extremely unusual mainly because of the normal swallowing reflex. Occult FBA in adults may lead to a mistaken clinical diagnosis of chronic pneumonia, bronchitis, asthma, bronchiectasis or even tumour.⁵

CASE PRESENTATION

A 50-year-old male gardener presented with a 1-week history of fever and productive cough and a 1-day history of spitting blood.

The past medical history was significant for multiple hospitalisations over 10 years with recurrent pneumonia involving both lungs. He developed empyema thoracis requiring tube thoracostomy followed by another empyema 6 years later for which he underwent video-assisted thoracoscopic surgery and decortication. His last hospitalisation was 45 days previously when he was diagnosed with community acquired pneumonia involving the right middle lobe. In view of his history of recurrent pneumonia, serum immunoglobulin level were measured and were normal; CT scan of the chest showed bilateral basal and right middle lobe bronchiectasis.

The patient had chewed betel nuts since childhood until 1 year previously when he had quit. There was no history of smoking or alcohol use.

Vital signs on admission revealed a pulse of 92 beats/min, blood pressure of 130/90 mm Hg, respiratory rate of 24 breaths/min and a temperature of 37.6°C. Chest exami-

nation revealed bilateral scattered wheezes. The rest of the systemic examination was unremarkable.

INVESTIGATIONS

The laboratory tests on admission showed a haemoglobin of 13 g/dl (13.7–16.3), leucocyte count of $11.9 \times 10^9/l$ (4.0–10) with 87% neutrophils and a platelet count of $377 \times 10^9/l$ (150–400). C reactive protein was raised at 9.5 $\mu\text{mol/l}$. Chest x-ray revealed alveolar infiltrates in the right middle and lower lung zones (figure 1). CT scan of the chest showed bronchiectasis in the right middle lobe and the left lower lobe.

TREATMENT

The patient was treated with intravenous piperacillin/tazobactam. He underwent fibre optic bronchoscopy which revealed betel nuts impacted in right upper lobe bronchus (figure 2) and left lower lobe bronchus. The left sided betel nut was removed by flexible bronchoscope, while right sided foreign body removal required rigid bronchoscopy by a thoracic surgeon (figure 3).

OUTCOME AND FOLLOW-UP

The antibiotic was given for 10 days. The patient was discharged home with almost complete resolution of his symptoms and was well in subsequent clinic visits.

Figure 3 Cup holder containing the two betel nuts extracted on bronchoscopy and a packet of betel nuts.

DISCUSSION

Tracheobronchial foreign body obstruction is rare in adults but can be seen in a variety of clinical settings. History of aspiration seems to be the most common predisposing factor, which if absent, can result in a significant delay in diagnosis. The symptoms of FBA can be very vague, ranging from chronic cough, wheeze and dyspnoea to haemoptysis and choking.^{3–6} This case highlights the possible diagnostic difficulty posed by this condition, and illustrates the significance of obtaining a good clinical history. Our patient remained undiagnosed for approximately 10 years during which he experienced recurrent episodes of post-obstructive pneumonia complicated by empyemas on two occasions. Bronchoscopy is frequently both diagnostic and therapeutic^{3–7} and in our case as well diagnosis was made on flexible bronchoscopy which revealed betel nuts obstructing the bronchus. The patient underwent rigid bronchoscopy for removal of the betel nuts. If rigid bronchoscopy

is ineffective, then surgery must be performed. In our case the fact that bronchoscopy was not considered earlier resulted in a delayed diagnosis for almost a decade.

In Pakistan, the use of betel nuts is very common particularly among adults. There are several case reports of betel nut aspiration in the tracheobronchial tree in our population.⁸ A study showed that 74% of school-aged children in Pakistan use betel nuts, this widespread habit being associated with aggressive marketing strategies, easy availability and a low literacy rate among parents.⁹ In a research study conducted in Turkey, hazelnut aspiration accounted for 26% of all foreign body aspirations.¹⁰ Nut aspiration is acknowledged as a public health issue in some parts of the world.^{10–12} In our case, the patient had been using gutka (tobacco mixed with betel nuts) for more than 20 years which subsequently led to the aspiration. In our case, there were no other predisposing factors for recurrent aspiration such as alcohol or drug abuse.

In conclusion, bilateral FBA is a rare entity which may remain undiagnosed for years despite recurrent infections. This emphasises the fact that healthy individuals may tolerate aspiration of foreign bodies for a long time without life-threatening consequences.

Learning points

- Foreign body aspiration (FBA) can occur without predisposing factors.
- FBA in adults can be tolerated and remain undetected for a long time.
- Occult FBA can lead to incorrect diagnosis of bronchitis, asthma, chronic pneumonia or tumour.

Acknowledgements The authors thank Dr Arshad Yousuf, Consultant Cardiothoracic Surgeon, Department of Surgery, Aga Khan University for his assistance in removing the foreign body via rigid bronchoscopy.

Competing interests None.

Patient consent Obtained.

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Please cite this article as follows (you will need to access the article online to obtain the date of publication).

Rehman SU, Sharif N, Zubairi ABS. Bilateral airway foreign body aspiration as a cause of recurrent pneumonia. *BMJ Case Reports* 2010;10.1136/bcr.05.2010.3002, date of publication

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