

An unusual tracheal foreign body residing for 15 years: A case report and review of literature

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Abstract

Airway foreign bodies are common in children, and usually present as emergencies. However, they may sometimes present late, due to a number of reasons. Chronic lodgement of foreign bodies in trachea is rarer than that in bronchial tree. Flexible and rigid bronchoscopies have revolutionized the management of foreign bodies at large. Here, we report a successful bronchoscopic management of an unusual foreign body residing in the trachea of a patient for 15 years.

KEYWORDS

bronchoscopy, foreign body, trachea

INTRODUCTION

Aspiration of foreign bodies is common in children. However, their lodgement in the trachea is very uncommon, and their residence for more than 10 years is rare. Airway foreign bodies have been studied after the first treatise by Gross in 1854, and Killian's first use of a rigid bronchoscope to remove an airway foreign body in 1898 was a milestone in their management.¹ The rigid bronchoscope has undergone a series of modifications since, and later flexible bronchoscopes came into use: paving a way to their modern management.² Here we report a patient's accidental aspiration of an unusual foreign body which resided in his trachea for 15 years before removal via a rigid bronchoscope.

CASE REPORT

A 28-year-old man presented with recurrent non-massive hemoptysis for a year, in the background of dry cough and halitosis for 12 years. He was otherwise a healthy man without any history of comorbidities. His case was worked up in an outside hospital, including a Computed Tomogram

(CT) of the chest, and was then referred to us for further management. The CT had shown a complex-looking opacity in the proximal trachea, arousing a suspicion of a foreign body (Figure 1).

Upon revisiting his medical history, he recalled that some 15 years ago, he had accidentally 'ingested' a guitar pick at a 'jamming session' with his friends. The pick, he recalled, was a makeshift one, made of a folded mobile recharge card cut into smaller size. Apparently, he lost voice immediately and had a persistent feeling of 'something stuck in the throat'. However, choking and respiratory distress were absent. Eating 'rough food' like beaten rice 'did not help'. He sought help in a local hospital where a neck X-ray and a chest X-ray were done, and reported to be normal. He was advised to examine his stool for the presence of a similar material for a few days. He remembers that he had some dysphagia and odynophagia for the first 2 days. After about 3 years of the event, he stated having halitosis; and it would not go despite him 'brushing his teeth four times a day'. As a part of the work-up, he underwent upper gastrointestinal endoscopy three times, to no avail. Likewise, anti-dyspeptic medications, too, did not help.

The lungs looked normal in the CT scan. His blood and sputum investigations were essentially normal. A flexible

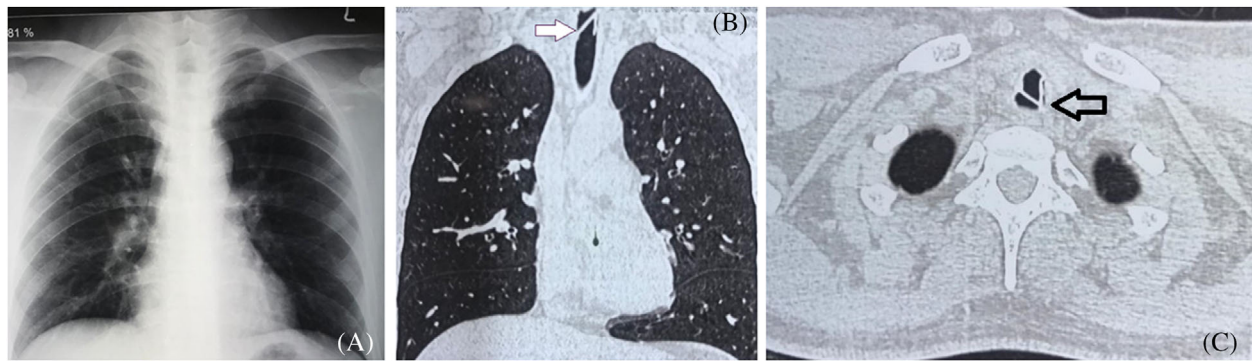


FIGURE 1 Images on the patient. (A) An apparently normal-looking chest x-ray; (B and C) CT scans showing a suspicious foreign body (*arrows*) in the trachea.

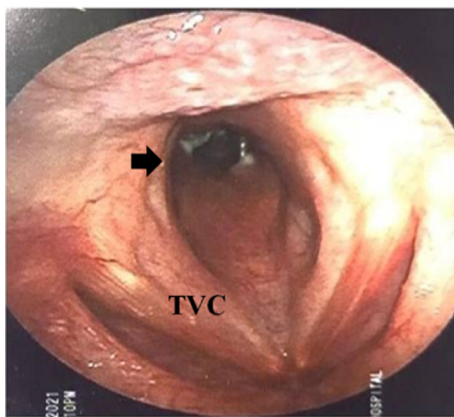


FIGURE 2 Bronchoscopic picture showing a foreign body (*arrow*) 2 cm below the glottis. TVC, true vocal cords

bronchoscopy was done under topical anaesthesia, revealing a foreign body 2 cm below the true vocal cords, apparently impacted in the tracheal mucosa (Figure 2). Subsequently, removal of the foreign body was planned under general anaesthesia. A ventilating rigid bronchoscope was used to

intubate the proximal trachea, and the foreign body visualized. The non-obstructive foreign body, which was confirmed to be a tampered mobile recharge card, allowed satisfactory ventilation via the rigid bronchoscope. The initial attempts to remove the foreign body were fraught with failure, because of dense impaction. Also, there was some bleeding which abated with time and suction. However, the foreign body presented enough free edges so grasping was not a problem. After several failed attempts, it was grasped and gently pushed distally into the tracheal lumen, disengaging it completely, and subsequently removed. Minor bleed from the ‘foreign body bed’ was dealt with by squirts of diluted adrenaline solution. The rigid scope was pushed down to tamponade the area, and the distal trachea and bronchi examined with a flexible bronchoscope. The foreign body was confirmed to be a folded mobile recharge card measuring 2.5 cm × 2.5 cm, with two sharp ends which acted like hooks anchoring the material to tracheal mucosa (Figure 3). After removal of the rigid scope, the patient was kept electively intubated for several hours in the intensive care unit, and subsequently extubated uneventfully. He received intravenous hydrocortisone for a day post-procedure.

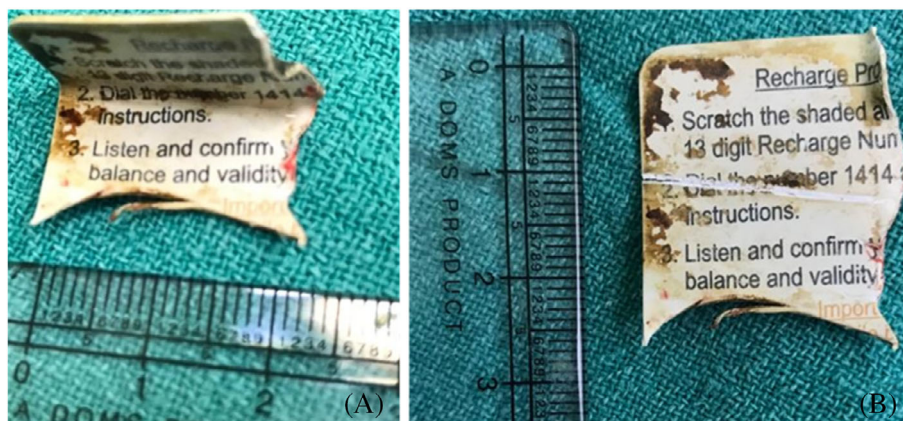


FIGURE 3 The extracted foreign body. (A) As it was lodged. (B) Straightened out after removal

The patient recovered well, and was discharged home after 2 days with normal voice and no hemoptysis or stridor. At the end of 3 months, he remains asymptomatic.

DISCUSSION

Airway foreign bodies are more common in children, compared to adults. One possible presentation is that of an airway emergency, leading to early presentation and prompt treatment. However, most of them are diagnosed late because the symptoms tend to be nonspecific and indolent, the patients tend to forget the event, not all of them produce radiographic abnormalities, and often the workup yields an alternative diagnosis.³⁻⁵ Interestingly, foreign bodies have been reported to have resided in the airway for as long as 40 and 27 years; but generally, airway foreign bodies of 10 years or more are very rarely reported.⁴ Airway foreign bodies come in different shapes and sizes. We have reported earlier about an alive leech in the subglottis of an adult.⁶ Other unusual objects have included a capsule tinfoil, a Chinese herbal medicine, tooth, whistle, nasal ring and a piece of tin can, among others.^{4,5,7} Most of the foreign bodies in children are organic materials, and most of them lodge in one of the bronchi.^{2,7,8} However, ours was a plastic material, lodged in proximal trachea. It is generally accepted that the longer a foreign body is in, the more distally it is likely to lodge. In the current patient, as the edges were sharp, the material must have got impacted early. As the trachea was roomy, there were no obstructive symptoms. The importance of CT scan of neck/chest in diagnosing occult foreign bodies and also in detecting complications can hardly be exaggerated. As in our case, a chest x-ray may often be normal.

Chronic irritation by long-standing foreign bodies usually results in granulation tissue, mucosal edema, bleeding, airway stenosis or distortion with resultant stridor, among others. Often these are easily recognized clinically or at bronchoscopy. Our patient did have some hemoptysis, but lacked any exuberant granulation around the site of impaction, as expected.

An airway foreign body may be dealt with in a variety of ways, including flexible bronchoscopy, rigid bronchoscopy, tracheotomy/tracheostomy, thoracotomy/bronchotomy, and sometimes resection of a lobe damaged by a long-standing object.^{3,8-11} There have been reports of good success rates of removal via flexible bronchoscopy alone, especially in adults.⁵ However (and especially in children), rigid bronchoscopy is generally considered the mainstay of treatment, and offers a direct vision and feel, good-sized instrumentation, a chance to tamponade possible bleed, a step-up for failed flexible bronchoscopy: all with a secured airway with ongoing ventilation. Moreover, a flexible bronchoscope or a telescope can be used through a rigid bronchoscope to aid inspection and removal. A successful rigid bronchoscopic removal of a foreign body obviates an unnecessary

tracheotomy/tracheostomy as in our case, and a thoracotomy/bronchotomy in other cases.⁷

A number of reasons make this case interesting. Aspiration of such a large and unusual foreign body, its residence for 15 years, its impaction so proximally in the trachea, and such trivial symptoms are a few. Moreover, it is important to emphasize that trivial but ongoing respiratory symptoms must raise suspicion of foreign body aspiration; and also that a chest x-ray may be absolutely normal in such individuals.

AUTHOR CONTRIBUTIONS

Ranjan Sapkota: Conception, drafting, revision, final approval. Aakriti Sharma: Drafting, Revision, final approval. Priska Bastola: Revision, final approval.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

ETHICS STATEMENT

The authors declare that appropriate written informed consent was obtained for the publication of this manuscript and accompanying images.

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