Case Report

J Nepal Health Res Counc 2018 Oct-Dec;16(41): 470-2

DOI https://doi.org/10.33314/jnhrc.1260

Flexible Bronchoscopic Removal of a Forgotten Intrabronchial Foreign Body

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ABSTRACT

Foreign body aspiration is uncommon in adults and the diagnosis may be delayed in the elderly, as many fail to provide a history of choking during initial evaluation. Flexible bronchoscopy is a useful tool for foreign body extraction from the tracheobronchial tree in selected cases. A Sixty-two year old male presented with history of cough, purulent sputum and intermittent hemoptysis. CT scan of the thorax demonstrated a radio-dense foreign body in the bronchus intermedius causing focal narrowing. Flexible fiberoptic bronchoscopy revealed a glistening white bone in the distal bronchus intermedius which was successfully grasped with the flexible forceps and extracted via the oral route with the bronchoscope.

Keywords: Elderly; flexible bronchoscopy; foreign body aspiration.

INTRODUCTION

Foreign body aspiration is uncommon in adults in contrast to children.[1] It may present either as acute respiratory failure requiring urgent removal or a new onset of dyspnea, wheeze, and cough with expectoration or hemoptysis.[2] The diagnosis may sometimes be delayed, especially in the elderly as a significant proportion fail to provide a history of choking.[3] A high index of suspicion is warranted to diagnose such cases. Radio-opaque foreign bodies may be incidentally visualized in radiology, otherwise it may present as atelectasis, focal hyperinflation, non-resolving pneumonia or localized bronchiectasis.[4] Hereby we report a case of a forgotten aspiration of foreign body in an elderly male.

CASE REPORT

A Sixty-two year old diabetic male presented with 6-month history of cough with purulent expectoration and intermittent hemoptysis. There was history of low grade intermittent fever. He was a non smoker and had no history of alcohol intake. There was no history of recurrent aspiration or difficulty in swallowing. On examination, heart rate was 83/min, regular, BP was 126/82 mm Hg and room air saturation was 95%. Chest examination revealed presence of monophonic wheeze and coarse crackels in the right infra-scapular and infra-axillary regions. Other systemic examination was unremarkable.

Upon evaluation, Hemoglobin was 13.4 gm/dl, total leukocyte count was 9600/cumm, ESR was 22mm in the 1st hour and liver and kidney function tests were within normal limits. His glycated hemoglobin level was 7.8%. Chest X-ray revealed non homogenous opacity in the right middle and lower zones with few air bronchogram, rest of the lung fields were normal. A CT scan of the thorax was ordered and revealed multiple areas of consolidation with air-bronchogram in the right lower lobe apical, lateral and posterior basal segments. Mediastinal window of the scan revealed a radio-dense foreign body in the bronchus intermedius causing focal narrowing (Figure 1). The history of the patient was reviewed and on direct questioning he recalled an episode of choking while eating fish 8 months back. Oropharyngeal examination revealed preserved gag reflex.

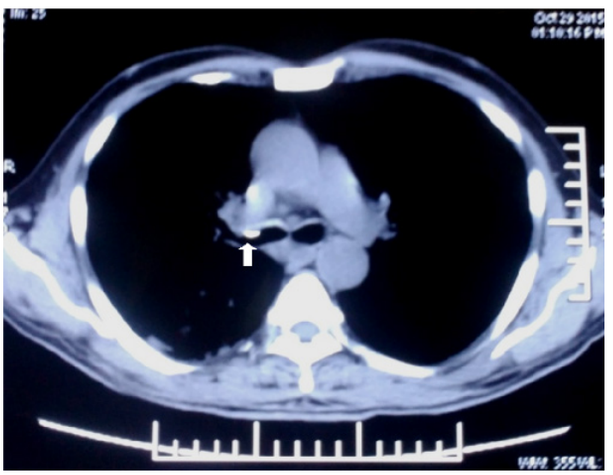

Figure 1. CT scan of the thorax revealing a radio-opaque foreign body (solid white arrow) in the bronchus intermedius with focal narrowing.

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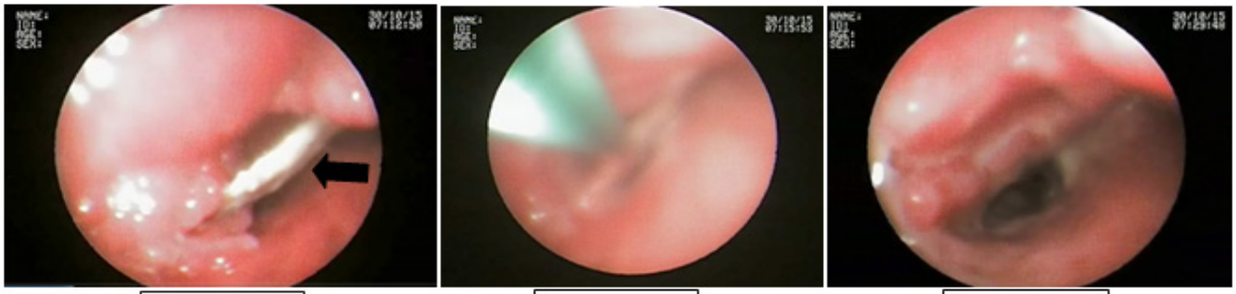

Figure 2a | Figure 2b | Figure 2c

Figure 2. Bronchoscopy images. 2a.Foreign body lodged in the bronchus intermedius (solid black arrow) near the opening of apical segment of right lower lobe with surrounding granulation tissue. 2b. Foreign body being extracted using a Rat Tooth Grasping Forceps 2c. bronchoscopy image post foreign body extraction

A flexible fiberoptic bronchoscopy was first done via the nasal route which revealed a glistening white bone in the distal bronchus intermedius with surrounding granulation tissue and purulent discharge (Figure 2a). The bronchoscope could not be negotiated beyond the narrowing. The bronchoscope was then reinserted via the oral route and the fish bone could be easily grasped with a Rat Tooth Grasping Forceps (FG-26C-1). The scope along with the forceps was withdrawn out of the tracheobronchial tree as a single unit (Figure 2b). Check bronchoscopy after the extraction of the foreign body revealed presence of granulation tissue without significant bleeding (Figure 2c). The patient's vital parameters were stable throughout the procedure.

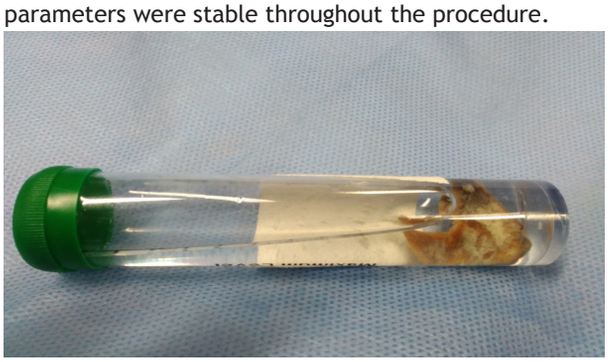

Figure 3. Fish bone post extraction from the tracheobronchial tree.

DISCUSSION

Foreign body inhalation may go unrecognized in adults who fail to provide a history of choking. Alcoholism, drug abuse, mental retardation, impaired gag reflex and various neuromuscular disorders are risk factors for recurrent aspiration. A high index of suspicion is warranted in appropriate clinical setting and diagnosis is usually achieved by radiology and flexible bronchoscopy. Delayed complications of foreign body aspiration are obstructive pneumonia, scarring, bronchiectasis and bronchial stenosis.

Foreign bodies are lodged in more distal parts of tracheobronchial tree in adults as compared to children.[5,6] Proximal obstruction of the tracheobronchial tree causes immediate choking and cyanosis, and warrants immediate removal, preferably with a rigid bronchoscope. In our case, the foreign body was present at the distal end of bronchus intermedius, hence the onset of symptoms was delayed. Flexible bronchoscopic removal was considered because of its distal anatomical location.

Rigid bronchoscopy remains the procedure of choice for removal of tracheobronchial foreign bodies owing to the larger working channel and good airway control.[7] Flexible bronchoscopy is now being increasingly used for this purpose.[8-10] The overall success rate of the procedure may be up to 80%, hence a flexible bronchoscopic assessment for feasibility of removal is always warranted prior to proceeding to rigid bronchoscopy or surgery.[10] The advantages of flexible bronchoscopy are that it requires less sedation, is easy to perform and readily available at most centers. However, caution must be taken while attempting to remove large and long standing foreign bodies as there may be torrential bleeding or dislodgement. A rigid bronchoscope should always be at standby in such cases. Rigid bronchoscopy is preferred if flexible bronchoscopy fails, if there is significant granulation and scar tissue or the foreign body is sharp. In the index case, the foreign body was present in the peripheral bronchus, it was not sharp and there was no significant granulation tissue or bleeding. Hence a flexible bronchoscopic retrieval was done.

This case report highlights the usefulness of flexible bronchoscopy in extracting foreign bodies lodged in the distal airways, thus avoiding rigid bronchoscopy and surgery.

CONCLUSIONS

Flexible bronchoscopy remains an important tool for extraction of peripherally located foreign bodies without significant granulations and those that are not sharp. In selected cases, it can avoid the need for rigid bronchoscopy or surgical extraction.

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