

Research Article

Neglected tracheo-bronchial foreign bodies in adults

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ABSTRACT

Background: Neglected tracheobronchial foreign body in adults is quite rare in clinical practice. The present paper describes our experience of four adult patients who had chronic chest symptoms (Cough, Chest Discomfort recurrent pneumonia) caused by foreign body inhalation, undetected for 3 months -15 years.

Methods: This was a short retrospective study. Four adult patients with neglected tracheobronchial foreign bodies which were removed in our medical college in the past 1 year were included in this short study. Case sheets were scrutinized for clinical features, X-ray findings, CT findings and bronchoscopic findings.

Results: The diagnosis of foreign body was made by radiology (X-ray + CT) in 3 patients and FOB in one patient. In all 4 patients foreign body was removed by fiber optic bronchoscopy. Endo bronchial electrocautery was used in one patient to cut the web above the FB. Foreign bodies removed were whistle top, end of IV cannula, scarf pin and maize corn.

Conclusions: Study concludes that chronic, unexplained respiratory complaints should warrant further investigations to exclude foreign body and despite no history of Foreign Body and normal X-Ray, early diagnosis and intervention would avoid complications.

Key words: Neglected, Tracheobronchial, HRCT, Fiberoptic bronchoscopy

INTRODUCTION

Aspirated foreign bodies in the airway continue to present challenges to the otorhinolaryngologist and interventional pulmonologists. Inhalation of foreign bodies is common in pediatric age group and 94 % of them occur in infants and children, with peak incidence in the age group of 1-3 years and is very rare in adults.¹ Adults frequently have an underlying condition associated with impairment of airway protection such as mental retardation, neurological disorder, alcohol or sedative abuse.²⁻⁴

The symptoms and signs produced depend upon the size, nature, location and area of lodgment of the foreign body

in the tracheobronchial tree. A large foreign body occluding the upper airway may lead to sudden death, whereas a small foreign body lodged in the bronchial tree may present with less severe system.

Early diagnosis and treatment is imperative to prevent mortality as well as complications. The present paper reports the author's experience of four patients in terms of clinical features, radiological and bronchoscopic findings.

METHODS

This was a retrospective study. The cases were reviewed in which the diagnosis of foreign body was overlooked at

various clinics in Kashmir valley. Among the 4 patients, 3 were females and one a male aged 20 years. Case sheets of these patients were scrutinized for history of foreign

body inhalation, clinical features, examination findings, X-ray and computerized tomographic (CT) scan of the chest and bronchoscopic findings.

Table 1: Details of patients.

Age/ Sex	Present symptoms	Duration of the symptoms	Radiology and CT findings	Bronchoscopy findings	Intervention	Nature of foreign body
19/M	Recurrent Cough not responding to symptomatic treatment	15 years cough	X-ray chest -Normal CT-Chest: Metallic density curvilinear foreign body seen in left upper lobe No consolidation	Thick web with a small slit like opening in the middle, present in lower half of left main stem bronchi. Not possible to negotiate the scope beyond the web Distal foreign body was present.	Endo bronchial electro- cautery was done to cut the web and foreign body was removed by FOB	Small whistle top Used in the Footwear of kids
21/F	Persistent Cough/ dyspnea	6 months	X-ray chest Normal CT-Chest Small tube like foreign body in lower part of trachea with extension into left main stem bronchi	Small tube like foreign body was present in lower part of trachea going into left main stem bronchi	Removed with FOB	10cm long end of IV dripset.
25/F	Cough/haem optysis	3 months	X-ray / CT Chest Metallic foreign body in left lower lobe	Foreign body in left lower lobe bronchus with granulation tissue around the foreign body	Removed via FOB through Endotracheal tube under GA	Scarp pin
55/F	Recurrent right lower lobe consolidation with cough	3 years	X-ray / CT Chest Normal	Maize corn in one of the sub segments of right lower lobe	Removed with FOB	Maize corn

RESULTS

As mentioned in the table 4 cases are taken for the study. The cases are:

The first patient was a 19 years old male referred to us from a general practitioner. The patient was seen by many doctors in the valley for the chief complaints of cough. Several medications tried over a long period to get rid of cough, but nothing worked. He was even treated as cough variant asthma and put on inhalation corticosteroids with no response. His X-Ray chest was normal (Figure 1).

A HRCT of chest was done which showed a curvilinear metallic density shadow in left upper lobe, consistent with foreign body (Figure 2). Bronchoscopic examination revealed a thick web (Figure3) with a small opening in the centre of left main stem bronchus through which we

would visualize a foreign body in left upper lobe but it was not possible to negotiate the bronchoscope beyond the opening. The decision was taken to use endo-bronchial electro cautery through video bronchoscopy to cut the web. After successfully cutting the web foreign body was retrieve.



Figure 1: Normal chest X-ray of Patient.

The foreign body was the whistle top used in the footwear of kids. It was having a central hole which explains why there was no distal collapse/recurrent pneumonia.



Figure 2: HRCT showing metallic density curvilinear foreign body in left upper lobe.

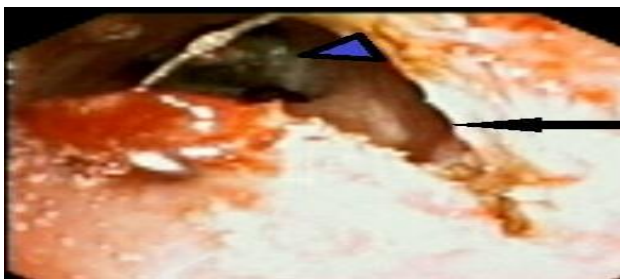


Figure 3: Fiberoptic bronchoscopy showing a foreign body (blue arrow head) in left upper lobe and incised thick web over it (black arrow).

The second patient was a 21Years/ Female, with chief complaints of cough of 6 months duration. Her X-ray chest was normal, but CT chest showed a tube like foreign body in lower part of Trachea with extension into the main left bronchus. Before going for bronchoscopy of the patient we took a detailed history from the patient, which revealed that she was admitted 6 months back as a case of poisoning in one of the tertiary care hospital of the valley and was ventilated for a period of 4 days.



Figure 4: Fiberoptic bronchoscopy shows a yellowish small plastic tube like structure in lower part of trachea.

She was weaned off successfully and discharged. Post discharge from hospital she continued to have dry cough. The history made us suspect that it might be the

fractured tip of endo tracheal tube, but when Bronchoscopy was performed through the mouth a small plastic tube like structured in lower part of trachea was seen (Figure 4) which was removed enbloc along with the bronchoscope. The foreign body was actually a 10 cm long part of the IV drip set.

The third patient was a 25 years old female with history of cough and hemoptysis for last three months. The patient gave the history that one day after setting the head scarf with pins; she had violent bouts of cough. After that she starts having cough and mild hemoptysis on and off.



Figure 5: HRCT showing a metallic density foreign body present in left lower lobe (Red arrow).

This history gave a clue that inhalation of pin could be a possibility, which is very common in young muslim females. An X-ray chest PA view was done which showed a metallic pi like structure on left side of the lung. A HRCT chest was done, which showed a metallic density foreign body was present in left lower lobe (Figure5).



Figure 6: Fiberoptic bronchoscopic picture showing a metallic pin in the left lower lobe.

After confirming a foreign body in the left lower lobe fiber optic bronchoscopy was planned via endo tracheal tube under general anesthesia. After going into the endo bronchial tree we found a metallic pin in left lower lobe which lay horizontally (Figure 6) over the opening of the left lower lobe with granulation tissue at the ends it took us around 20-25 minutes to meticulously remove the granulation tissue and get hold of the Pin to remove it. She was discharged 24 hours after the procedure with resolution of symptoms.

The fourth patient was 55 old female with recurrent right lower lobe consolidation and cough from last three years. She was treated many a time for these findings and used to improve with antibiotics. The X-ray chest and Contrast enhanced CT Chest findings were consistent with consolidation. A fiberoptic bronchoscopy was planned to inspect the endo bronchial tree. A yellowish white structure in one of the sub segments of right lower lobe it was found. (Figure7). First impression was a possibility of the teeth, after removing the bronchoscope and went through the oral route to deal with the foreign body. After removing out the foreign body it was a maize corn.



Figure 7: Fiberoptic bronchoscopic picture showing yellowish white structure in one of the subsegment of right lower lobe.

DISCUSSION

Several reports exist indicating neglected bronchial foreign bodies in children/adults.⁵⁻⁸ Foreign body aspiration is frequently suspected in children with acute or recurrent symptoms. However, in adults FB aspiration is rarely considered unless there is a clear history of the aspiration event.^{1,9} Thus, FB can remain undiagnosed for years and may lead to a misdiagnosis such as asthma.^{5,6} The reason for the diagnostic delay in the study patients was due to neglecting the importance of detailing the remote history FB inhalation and the fact that none had underlying conditions predisposing them to FB inhalation except for the young lady with poisoning.

Early complications of tracheobronchial FB aspiration include dyspnoea and cough, which were observed in all of the four patients of the study, removal of FB lead to complete recovery.¹⁰ Late complications such as recurrent pneumonia occurred in one patient where FB was found completely obstructing the sub segmental bronchi of right lower lobe.¹¹ Haemoptysis occurred in one patient where FB was a sharp needle which in itself explains the reason for haemoptysis.

Most of the successful results with bronchoscopic extraction of the FB were attributed to early removal prior to permanent changes in lung parenchyma.¹² Secondary inflammation, with formation of granulation tissue over the objects, renders the majority of foreign bodies difficult to remove by fiberoptic bronchoscopy.

In concert with the authors experience conventional chest radiography was reported to be poor in identifying the inhaled foreign bodies because of radiolucency (6).The value of CT scan of the chest in identifying the inhaled objects is not know; its superiority over the chest radiography was observed by identifying the FB in three patients of the study as compared to one patient by X-ray chest.

The authors believe that a high index of suspicion is the best diagnostic factor leading to discovery of inhaled FB. Factors such as recurrent chest symptoms not responding to conventional treatment and the presence of unilateral disease on radiography with bronchoscopic finding of granulation tissue or cicatricial stenosis should alarm the presence of FB in tracheobronchial tree.

CONCLUSION

Neglected tracheobronchial foreign bodies in adults are rarely encountered in clinical practice .Chronic unexplained respiratory complaints should warrant further investigations like CT scan and bronchoscopy to exclude foreign body as early diagnosis and intervention would avoid complications.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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