An Unusual Endobronchial Foreign Body

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Abstract
A 24-year-old male presented with features of pneumonia of right lower lobe. Chest radiograph after treatment showed cystic opacities in the right lower zone along with a radio-opaque foreign body at the right cardiophrenic angle. The foreign body was successfully removed via the fiberoptic bronchoscope. It was a very unusual type of foreign body with an equally unusual mode of aspiration.

INTRODUCTION
Aspiration of foreign bodies into the tracheobronchial tree is rarer in adults as compared to children.1 In adults, the episode of aspiration of the foreign body is usually remembered by the patient.2 But there have also been cases reported where there is no recollection of the event leading to the aspiration.3,4 In such cases the diagnosis of foreign body aspiration is made when the patient presents with delayed complications like repeated lower respiratory tract infections, lobar collapse or bronchiectasis. The present case is being reported because of an unusual type of foreign body and a very unusual mode of aspiration.

CASE REPORT
A 24-year-old male presented to a peripheral hospital with the complaints of fever, cough and expectoration of one week duration. A chest radiograph revealed consolidation in the right lower zone. He was treated with oral antibiotics for one week and in view of no significant clinical and radiological improvement, the patient was transferred to our centre for further management. On examination, he was febrile, tachypnoeic and had coarse crackles in the right infrascapular region. The complete blood counts were within normal limits and his sputum examination revealed no organisms on Gram’s and Ziehl-Nielsen stain. His chest radiograph showed consolidation in the right lower zone. The patient received a course of parenteral antibiotics following which his symptoms subsided. A repeat chest radiograph showed resolution of the consolidation and few cystic opacities in the paracardiac region. There was also a spiral opacity visualized at the right cardiophrenic angle suggestive of a foreign body (Fig.1). A careful review of the previous chest radiographs showed the similar opacity in all the earlier films as well. A high-resolution computed tomography of the chest revealed the presence of bronchiectasis in the medial and posterior basal segments of the right lower lobe along with a dense ring shadow surrounded by a rim of consolidation in one of the subsegmental bronchi suggestive of a foreign body (Fig. 2).

In spite of persistent questioning, the patient denied any history suggestive of aspiration of foreign body. Fibroptics bronchoscopy revealed the presence of thick and purulent secretions in the right medial and posterior basal segments of the lower lobe bronchus. After clearing the secretions, the glistening upper end of a hollow metallic foreign body was visualized in one of the subsegments of the posterior basal right lower lobe bronchus. After breaking the adhesions, the upper end of the foreign body was removed via the fiberoptic bronchoscope.

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Fig. 1 : Chest radiograph showing spiral opacity (marked with an arrow) in the right cardiophrenic region.
The foreign body was grasped using an alligator forceps and the bronchoscope along with the forceps was carefully removed. The foreign body was an almost 3 cm long coiled metallic spring-like object (Fig. 3). The patient could not immediately ascertain the identity of foreign body. Later he himself identified it as one of the pieces produced when one is working with metals on a lathe machine. These metal pieces are in the form of spirals and are known to fly out of the machine at very high speeds. On questioning regarding the possible mechanism of aspiration, the patient revealed that more than five years ago, he and his friends would sometimes sit in front of a lathe machine, which was operated by his uncle. On one of these occasions, while talking and laughing with his friends near the machine, he remembered having a very severe episode of coughing, which stopped after 2-3 minutes. But as he remained asymptomatic thereafter, he forgot all about it. The patient denied having ever kept such pieces in his mouth while playing. We presume that one such metal spiral must have entered his open mouth during talking and laughing and in view of the high speed and low weight of the foreign body, it got aspirated into the lungs without the patient being aware of this aspiration event, and also possibly since he remained asymptomatic thereafter for almost 5 years. Following the removal of the foreign body, the patient showed a good recovery and was discharged.

**DISCUSSION**

Although foreign body aspiration is frequently suspected in children with acute or recurrent pulmonary symptoms, it is rarely considered in adults with sub-acute or chronic respiratory symptoms unless a clear history of any aspiration event can be obtained. The diagnosis is usually confirmed by visualizing the foreign body either on chest radiography, computerized tomography, or by bronchoscopy. Non-opaque foreign bodies can be missed on routine chest radiograph, but may be suggested by associated atelectasis, or infiltration in the post obstructive region or by air trapping and hyperinflation on post exhalation chest radiograph. Occult foreign body aspiration can remain undetected for years, leading to erroneous diagnosis of asthma, bronchitis, or chronic pneumonia. The singular diagnostic factor leading to the discovery of tracheobronchial foreign body aspiration in an adult is a high index of suspicion. The usual foreign bodies discovered are metal pins, peanuts, meat bones, dental equipment or prostheses, and various other types of foreign bodies. Such foreign bodies are commonly held in the patient’s mouth and are inadvertently aspirated.

The definitive treatment of tracheobronchial foreign body aspiration is removal as soon as possible. It is universally agreed that rigid bronchoscope is the instrument of choice for extraction of foreign bodies in children. However in adults, the fibreoptic bronchoscope is increasingly being used successfully for the removal of foreign bodies. The rigid bronchoscope has some advantages in the form of better airway control and diverse instruments being available for use which can extract virtually any shape of object from the bronchial tree. However the fibreoptic bronchoscope is gaining popularity, firstly due to the increasing lack of adequate training in rigid bronchoscopy and secondly the fibreoptic bronchoscope has a distinct advantage in the retrieval of foreign bodies in the peripheral bronchi, as seen in our patient.

To conclude, in case of occult foreign body aspiration, high index of suspicion, careful review of chest radiographs and painstaking history regarding the mode of aspiration, leads to the correct diagnosis and management.
REFERENCES


Announcement

**Society for Free Radical Research - India**
Affiliated to SFRR-Asia and SFRR-International
(C/o Cell Biology Division, Bhabha Atomic Research Centre
Mumbai-400085) (Registration No. M.S./Mumbai 64/2001)

**Appeal for Enrolling As a Member in SFRR-India**

The Society for Free Radical Research-India (SFRR-India) has been formed in 2001. The major aims and objectives of SFRR-India are to promote research on free radicals and antioxidants with particular reference to medical and industrial importance. ‘Free radicals’ are short-lived and highly reactive and cause serious damage in the human body, if kept unchecked. Antioxidants are the natural defenses that can neutralize these free radicals. Our society organizes conferences and workshops at national and international levels. The society also helps in promoting interaction between clinicians and scientists working in related areas within and outside the country. In the last five years the society has organized four international conferences with sizable participation from both India and abroad. Another important activity of our society is to publish ‘SFRR-India bulletin’, as its official organ. This contains research papers and related articles that will be of use to both clinicians and basic scientists. The executive committee of the society, headed by highly honoured Padmabhushan Dr. R.D. Lele, has many representatives from the medical fraternity. We appeal to all, especially physicians and other medical professionals, interested in the above areas of research to enroll themselves as members. Membership forms, giving details, are available from one of the following members. Dr. T.P.A. Devasagayam, present Secretary-General (tpad@apsara.barc.ernet.in); Dr. S. Adhikari, Secretary-General-Elect (tihai35@yahoo.com); Dr. Shashank R. Joshi, Executive Committee member (srjoshi@vsnl.com). Membership fee: Life members – Rs. 3000 or US$60; Corporate membership – Rs. 10000; Annual membership – Rs. 200 + entrance fee of Rs. 50; Student membership (annual) – Rs. 100 + entrance fee of Rs. 50 or US$10.

Announcement

**An Electronic Draft of ‘Guidelines for Management of HIV/AIDS in Indian Scenario’ is put on JAPI website www.japi.org from 1st November 2005 for any comments. Kindly submit your comments by 15th November 2005 for incorporation in the final draft.**

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