

Case Report

A unique foreign body in bronchus: surgical challenge

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Abstract:

Exogenous foreign bodies in tracheo bronchial tree are not uncommon, particularly in children. The gold standard principal of foreign body management is bronchoscopic removal and this procedure becomes difficult and challenging in cases of large and smooth foreign body as occur in our case. The present article reports a case of unique and large foreign body i.e. intact glass bulb in right main bronchus.

Key words: Foreign body. Bronchus.

Introduction:

An object is considered as “foreign body” (FB) if the object is in a location in the body where it is not normally found.¹ Common FB includes betel nuts, gutakha, beans, parts of toys etc. Children are in a habit of putting thing in their mouth to detect taste and texture. Depending on size, shape and type of FB, they can impact in larynx, trachea or more distally to bronchi. The clinical presentation varies from acute severe respiratory syndrome to clinically no obvious sign. Radiological findings vary from absolutely normal X-ray chest to emphysema, collapse, atelectasis etc.^{2,3} The gold standard principle of FB management is bronchoscopic removal.

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Case report:

A 12-year-old male child present to ENT OPD, MDM Hospital, Dr. S.N. Medical College, Jodhpur, Rajasthan, India with the history of inhalation of a glass bulb 10 days back while playing with a special kind of a battery (Figure. 1 & 2) used with Gobar Gas plant. (It is a kind of a fuel production unit in villages, which use cow & other animal dung).



Figure 1: Battery showing glass bulb



Figure 2: Battery showing glass bulb

He developed mild cough and breathing difficulty from last 5 days. On examination the child was tachypneic with mild stridor and on auscultation air entry of right side was found diminished as compared to the left lung.

X-ray chest PA view (Figure-3) revealed silhouetting of right dome of diaphragm and right cardiac border suggestive of consolidation/collapse of right lower and middle lobe.

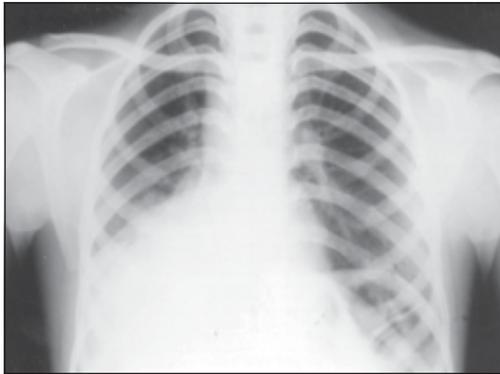


Figure-3: X- ray chest PA view showing collapse of right lower and middle lobe.

As there was a positive history patient was subjected for CT scan, which confirms collapse of right lower lobe and patchy consolidation in right middle and upper lobe. A high density metallic / glass foreign body is seen in right main bronchus (Figure- 4 & 5).



Figure 4: CT scan of lung showing foreign body in right main bronchus.

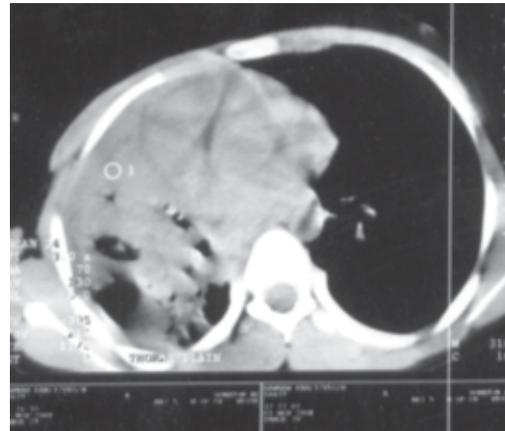


Figure 5: CT scan of lung showing collapse of right lobe.

Meanwhile patient attendant were asked to produce duplicate of the FB. Patient was taken for emergency rigid bronchoscopy under G.A. Child was maintaining his O₂ saturation at 60-70% even with 100% O₂ ventilation. Bronchoscope of size 4.5, length 30 cm with a venturi connection was used. Rigid Bronchoscope revealed a large semi transparent white shining foreign body which was completely blocking the lumen of right main bronchus; this was confirmed by optical telescope. As the FB was found tightly

stucked in the right main bronchus, with no forceps space and as the surface of FB was smooth and slippery, repeated attempts to grasp the FB with different kinds of available forceps were unsuccessful. Each time the forceps slipped and we were not able to grasp of the FB. Use of Dormia basket was also unsuccessful. Further attempt was tried with alligator, grasping forceps and with great difficulty however we could able to grasp the FB and attempt was made to remove it but within seconds FB slipped and got stucked in left main bronchus (the normal side). There was a sudden de-saturation to 30%. As the right side air entry was already compromised, saturation did not improve with ventilation via the bronchoscope. So the bronchoscope was removed and the child was intubated with endo-tracheal tube the (ETT). The saturation slowly improved to 95% with positive pressure ventilation. Now the right lung was also found to expand. The ETT was taken out, the bronchoscope reintroduces and ventilation continued through the side port. More attempts were made and finally the FB grasped and removed which was a semitransparent, thick glass bulb of size 1.4 cm x 1 cm. (figure 6). The O₂ saturation improved to 100% and the child was discharged on 7th day.

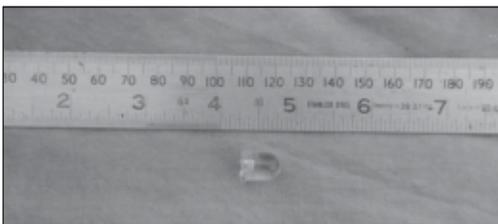


Figure 6: Showing foreign body - glass bulb.

Discussion:

The rare FB which has been described in the literature are marble impaction in nasopharynx, meat bolus, teeth, glass bead, cement and sand.^{4,5, 6, 7}

The glass bulb type of FB has not been reported earlier to the best of our knowledge.

Probably this is the 1st case report of its kind. The gold standard principal of FBs management is bronchoscopic removal but because of the unpredictability in the degree of difficulty in the nature of the procedure one should always be cautious and be prepared to meet with any period of challenge.⁸ The same problem was encountered during the procedure as there was no appropriate forceps to grasp such kind of smooth surfaced and large FBs. We strongly recommend the need to develop or modify existing foreign body forceps for the removal of such of unique FB which was although very rarely encountered.

References:

1. Baneragee A, Subba Rao KSVK, Khanna SK, et al. Laryngotracheal bronchial foreign Bodies in children. J Laryngol Otol 1988; 102: 1029 – 1032.
2. Children: Value of radiography and complications of bronchoscopy. J Pediatr Surg 1998; 33: 1651 – 1654.
3. Mul L, Sun D, Pe H, Radiological diagnosis of aspirated foreign bodies in children. a review of 343 cases. J Laryngol Otol 1990; 104: 778 – 782.
4. Black RE, Johnson G, Matlak ME. Bronchoscopic removal of aspirated foreign bodies in children. J Pediatr Surg 1994; 29: 682 – 684.
5. Qureshi S, Mink R. Aspiration of fruit gel snacks. Pediatrics 2003; 111: 687 – 689.
6. Oysu C, Yilmaz HB, Sahin AA, Kulekci M. Marble impaction in the nasopharynx following oral ingestion. Eur Arch Otorhinolaryngol 2003; 260: 522 – 3.
7. Sanjay Narwani, Bora MK. Foreign body in bronchus: An unusual presentation. Indian J of Otolaryngology and Head and Neck Surgery 2005; 57: 161 – 162.
8. Muhammad Rashid, Inam ul Haq. A rare case of airway foreign body (cement & sand). Pakistan Armed Forces Medical Journal 2005; 4: 23 – 25.