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CASE STUDY

AN ASYMPTOMATIC BRONCHIAL FOREIGN BODY IN A CHILD-A RARE CASE REPORT WITH REVIEW OF LITERATURE

***Dr. Anil Reddy, J.**

Department of Otorhinolaryngology, Vijayanagara Institute of Medical Sciences, Bellary 583104, Karnataka, India

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ABSTRACT

We present a case report of a child with bronchial foreign body without any presenting symptoms. After evaluating the history and examination child was sent for x ray chest which showed a radioopaque foreign in left main bronchus. Patient was taken to OR and rigid bronchoscopy guided removal of foreign body was done. Postoperative course was uneventful. We conclude that in all suspected cases of foreign body diagnostic bronchoscopy should be considered.

INTRODUCTION

Airway foreign bodies (AFBs) have remained a diagnostic challenge to health care professionals. They can become life-threatening emergencies that require immediate intervention or can go unnoticed for weeks and even months. Every effort must be made to avoid a delay in diagnosis because this may lead to catastrophe.

Case

A 5yr male child presented to our institute with a history of ingestion of foreign body (safety pin) 12hrs back. As soon as the child's mother noticed this she immediately upturned the child and gave thrusts over child's back as advised by the households and was in vain. On examination the child was playful, no stridor/ respiratory distress, no difficulty in swallowing, no drooling of saliva except for localizing pain to upper abdomen i.e. epigastrium. Pulse 102/min. respiratory rate 20/min and Spo2 100%. ENT examination was within normal limits. On auscultation of chest reduced air entry on whole of the right side of lung fields, with normal vesicular breath sounds. When child was made to lie on right lateral position child developed cough which reduced on lying supine. X-Ray chest postero-anterior view showed a radio-opaque

foreign body (Figure 1) which appears long slender angled wire like configuration (open safety pin) with safety pin head end occupying the left main bronchus area and the sharp end in the trachea and in left lateral view (Figure 2) of the chest the foreign body was seen in the hilum area of the lung and within the cardiac and middle mediastinal area as well suggesting it more likely to be in the mediastinum rather than airway.

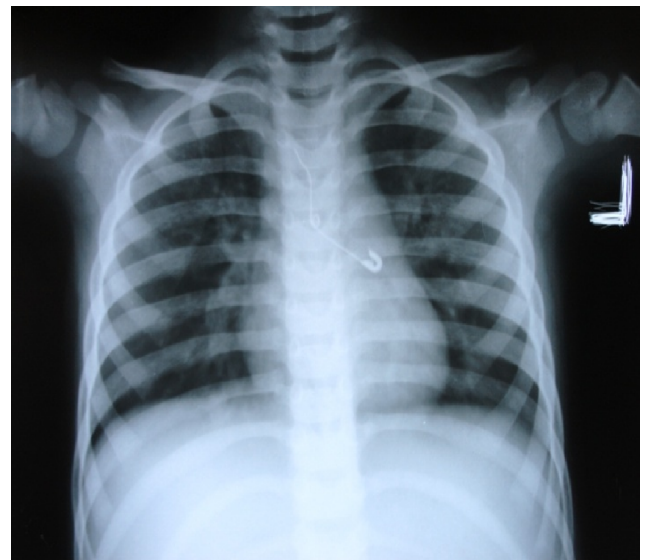


Fig. 1. X Ray chest PA view showing a radio-opaque foreign body(safety pin) occupying left main bronchus and trachea

***Corresponding author: Dr. Anil Reddy, J.**

Department of Otorhinolaryngology, Vijayanagara Institute of Medical Sciences, Bellary 583104, Karnataka, India.

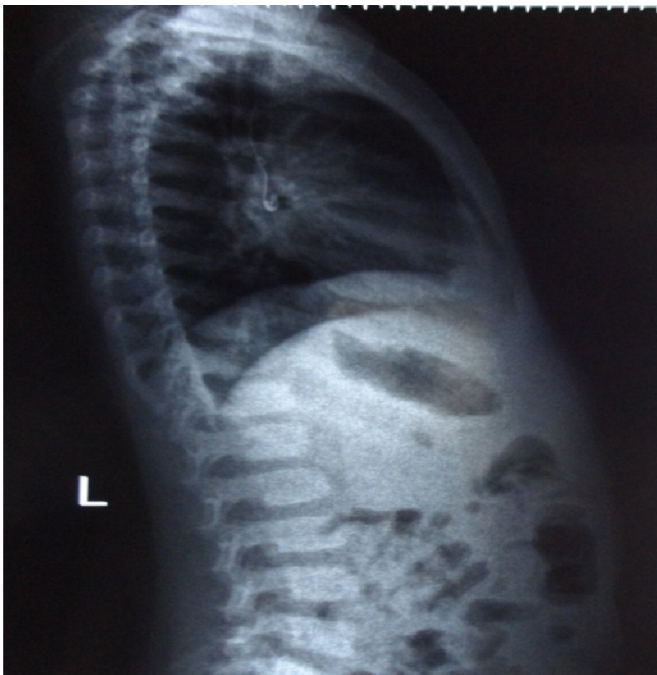


Fig. 2. X Ray right lateral view of chest with abdomen showing a radio opaque foreign body occupying the area of middle mediastinum near hilum of lung

Management

Under general anesthesia emergency distal illuminated rigid bronchoscope (4.5mm) was done to remove foreign. Bronchoscopy showed a dark colored pointed end of the foreign body (Figure 3) but the other end could not be visualized. Using crocodile forceps the foreign body was retrieved. Granulation tissue reaction was noted at the same level. The intra operative period was uneventful.

Post operatively the child was kept in respiratory intensive care unit for a period of 48hrs with continuous monitoring of vitals. The child was shifted to the ward after 48hours and course in the hospital was uneventful.



Fig. 3. foreign body (safety pin) removed from bronchus

DISCUSSION

AFBs most commonly occur in the 1- to 3-year-old child and may be related to immature dentition, poorly coordinated swallowing mechanism, more likely to be active while eating and are prone to introducing various objects into their mouth⁽¹⁾. In our case the child is 5year old male. As the foreign body moves distally in the airway, the symptoms often become less apparent and may even subside, creating a great diagnostic challenge because the remainder of the assessment, mainly the physical examination and radiography, can be deceptively normal. Therefore, the incipient event that leads the caregiver to bring the child to a health care professional can be the most important factor in the decision to proceed with a diagnostic airway endoscopy. In our case the history was clearly given by the attender.

The classic triad of sudden onset of paroxysmal coughing, wheezing, and diminished breath sounds on the ipsilateral side is not present in all cases of foreign body aspiration (Paul Digoy, 2008). But in this case there was no presenting feature of airway foreign body rather it was asymptomatic. Linegar and colleagues reported that among children who had a positive clinical history and a negative chest radiograph and physical examination, there was a 45% incidence of foreign bodies on airway endoscopy (Linegar *et al.*, 1992). Ciftci and colleagues reported that a positive history was the most sensitive (91%), accurate (84%), and specific (46%) of all the diagnostic tools (Ciftci *et al.*, 2003).

Physical examination

The presentation of an individual who has an AFB can range from a patient who is quiet and without discomfort to one who may exhibit signs of severe distress and impending respiratory failure. In general, the physical examination tends to have a low specificity and a variable yet higher sensitivity in predicting AFBs. Careful auscultation of the chest is the most critical part of the physical examination. Findings include unilateral wheezing and a discrepancy in breath sounds. In our case there was paradoxical phenomenon hence compensatory changes was taken place and this could explain increased breath sounds on right side. Because many investigators have reported a relatively high incidence of normal physical findings (14%–45%) in patients diagnosed with an AFB on bronchoscopy, a negative physical examination should not be used to rule out the presence of an AFB (Ciftci *et al.*, 2003; Even *et al.*, 2005; Metrangelo *et al.*, 1999). Its relatively high sensitivity, however, suggests that a positive physical examination can be a very useful tool in establishing a need for bronchoscopy. The clinician must always consider the limitations of radiography in the diagnosis of AFBs. Radiographs should not be used to rule out the presence of an AFB but used to aid in its diagnosis. Compared with history and physical examination, radiography appears to be the least sensitive in predicting bronchoscopy findings.

Indications for endoscopy

A delay in diagnosis is likely to increase the risk of intraoperative and postoperative complications. To prevent a

diagnostic delay, a witnessed choking event followed by a period of coughing should be considered an acceptable indication for bronchoscopy, without relying on other diagnostic tools. A good rule of thumb is that diagnostic bronchoscopy should be performed if any one of the three diagnostic tools (history, physical examination, or radiography) is considered positive. Furthermore, if any one of these is negative, the possibility of an AFB remains. When the diagnosis is in question in a stable patient, the clinician can consider repeating radiography and the physical examination after a 24-hour period (Paul Digoy, 2008).

Endoscopy and foreign body removal

We used rigid bronchoscope (distal illuminated) with crocodile forceps to remove foreign body which provides better and direct visualization. There must always be two bronchoscopes available; one that is age appropriate and one that is one size smaller. Often the object is too large to pass through the lumen of the bronchoscope and must be removed as a single unit along with the bronchoscope and the optical forceps.

Complications

Delay in diagnosis presents a significant increase in perioperative morbidity (Metrangelo *et al.*, 1999; Barrios Fontoba *et al.*, 1997; Hoeve *et al.*, 1993; Tokar *et al.*, 2007). Total or near-total mainstem bronchial obstruction leads to poor alveolar aeration and subsequent shunting of pulmonary perfusion away from the affected lung. When the foreign body migrates to the contralateral side, the patient can experience abrupt respiratory decompensation (Gibson). This scenario is intensified in cases of delayed diagnosis because the body has more time to compensate for unilateral decrease in ventilation. Delayed diagnosis is further complicated by the development of pneumonia, atelectasis, and granulation tissue, which can lead to significant bleeding on removal of the foreign body. Complications from bronchoscopy can also include postoperative stridor (Zerella *et al.*, 1998), bronchospasm, hypoxia, transient arrhythmias, and bradycardia (Sersar *et al.*, 2006). In a large case series of 3300 patients, the mortality rate was reported to be a little less than 1% (Sersar *et al.*, 2006).

Conclusion

Airway foreign bodies are common in our region and presents with varied symptoms, hence we conclude that diagnostic bronchoscopy should be done in all cases with suspicion of foreign body.

REFERENCES

- Barrios Fontoba, J.E., Gutierrez, C., Lluna, J. *et al.* 1997. Bronchial foreign body: should bronchoscopy be performed in all patients with a choking crisis? *Pediatr Surg Int.*, 12(2-3):118-20.
- Ciftci, A.O., Bingol-Kololu, M., Senocak, M.E. *et al.* 2003. Bronchoscopy for evaluation of foreign body aspiration in children. *J. Pediatr. Surg.*, 38(8):1170-6.
- Even, L., Heno, N., Talmon, Y. *et al.* 2005 Diagnostic evaluation of foreign body aspiration in children:-a prospective study (erratum appears in *J. Pediatr. Surg.*, Nov; 40(11):1815
- Gibson. Aerodigestive tract foreign bodies. In: Cotton RT, Meyer CMIII, editors. *Practical Pediatric Otolaryngology*, p. 561.
- Hoeve, L.J., Rombout, J. and Pot, D.J. 1993. Foreign body aspiration in children. The diagnostic value of signs, symptoms and pre-operative examination. *Clin. Otolaryngol. Allied Sci.*, 18(1):55-7.
- Linegar, A.G., von Oppell, U.O., Hegemann, S. *et al.* 1992. Tracheobronchial foreign bodies. Experience at Red Cross Children's Hospital, 1985-1990. *S. Afr. Med. J.*, 82(3):164-7.
- Metrangelo, S., Monetti, C., Meneghini, L. *et al.* 1999. Eight years' experience with foreign-body aspiration in children: what is really important for a timely diagnosis? *J. Pediatr. Surg.*, 34(8):1229-31.
- Paul Digoy, G. M.D. 2008. Diagnosis and Management of Upper Aerodigestive Tract Foreign Bodies; *Otolaryngol. Clin. N. Am.*, 41, 485
- Sersar, S.I., Rizk, W.H., Bilal, M. *et al.* 2006. Inhaled foreign bodies: presentation, management and value of history and plain chest radiography in delayed presentation. *Otolaryngol Head Neck Surg.*, 134(1):92-9.
- Tokar, B., Cevik, A.A. and Ilhan, H. 2007. Ingested gastrointestinal foreign bodies: predisposing factors for complications in children having surgical or endoscopic removal. *Pediatr Surg Int.*, 23(2):135-9.
- Zerella, J.T., Dimler, M., McGill, L.C. *et al.* 1998. Foreign body aspiration in children: value of radiography and complications of bronchoscopy. *J. Pediatr. Surg.*, 33(11):1651-4.
