Atypical Foreign Body Bronchus Presented As Calcified Lesion Neglected For Years

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Abstract: Foreign body inhalation is a clinical emergency requiring prompt action to ensure speedy recovery and minimize the complications. This is common in children rather than in adults. We hereby report a case of a neglected foreign body which remained in the bronchus of a child for years before the diagnosis was made and appropriate treatment was given. [Patel A et al NJIRM 2013; 4(4) : 149-150]

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Introduction: Exogenous foreign bodies in the tracheobronchial tree are common, particularly in children due to immature dentition, activity during feeding and propensity to explore the environment orally. It is one of the leading causes of accidental home deaths in children under 6 years.[1] The major issue involves the accurate diagnosis, speedy and safe retrieval of the foreign body. The accurate diagnosis may elude even the sophisticated physician because often the initial choking incidents are not witnessed and the delayed symptoms may mimic other common conditions such as asthma, recurrent pneumonia, or bronchiectasis.[2] Some organic foreign bodies cause intense surrounding tissue reaction which results in a condition known as arachidic bronchitis.[2] This manifests as granuloma formation and occasionally calcification which may mimic other conditions such as malignancy or tuberculosis.

Case Report: A five year old male child presented to our hospital with the chief complaints of productive cough and low grade fever since two years, not responding to antibiotics. Clinical examination showed normal body temperature and no respiratory distress. On auscultation there was decreased air entry on the right side with crepitations in right basal zones. A chest x-ray PA view revealed a right hilar partially calcified mass lesion causing almost complete obstruction of the right bronchus. (Figure 1) There was no history of foreign body ingestion, a chest radiograph taken five months and 1yr earlier revealed the same lesion, which was taken for a calcified lymph node. (Figure 2) The possibility of tuberculous lymphadenopathy was considered; nevertheless all laboratory investigations for TB were negative. More ominous possibility including calcified neoplastic lesion was postulated, although rare in this age group, and hence bronchoscopy was considered. A check bronchoscopy was done and to our surprise it revealed coal in the right main bronchus, which was removed in piecemeal with efficient airway management. (Figure 3) There was immediate post operative improvement in the ventilation and expansion of the right side of chest with complete disappearance of the radio-opacity in the post-operative chest x-ray. (Figure 4) Retrospectivly history revealed using coal for cooking at home.

Figure 1

Discussion: Aspiration of foreign bodies results in significant morbidity and mortality in children. The initial event of choking on aspiration is often missed or denied by parents. No history of foreign body aspiration can be elicited in about 14% of cases of foreign body aspiration.[3] This shows the importance of high index of suspicion. However Hoeve[3] et al who studied the diagnostic value of signs and symptoms due to foreign body found choking and coughing to be very sensitive features (81% and 71% respectively).

Figure 2

Figure 3

There is often a quiescent phase due to the rapid fatigue of the cough reflex with adaptation of the surface sensory receptors after the acute choking episode before complications occur in case of a long standing foreign body in the bronchial tree. There are three pathophysiologic considerations – the anatomy of the lodgment site, the physical property of the foreign body and the local tissue reaction which determine the respiratory sequalae that may occur if the foreign body is not diagnosed and removed. It is well known that a long-standing foreign body in the bronchial tree, even if it is very small, may result in total obstruction by edema or secretions. Wiseman[4] comparing patients with early and late diagnosis found that in the early group half had evidence of air trapping, and one sixth had atelectasis or consolidation. This number doubled in the late group. Thus late complications of organic foreign body are grave, as they not only increase in size but can also cause a severe lipoid chemical reaction (Arachidic Bronchitis).[2]

Figure 4

Arachidic bronchitis is a severe form of bronchitis resulting from inhalation of organic foreign bodies which elicit a so intense inflammatory reaction, and granuloma formation that it can mimic malignancy. There is occasional peripheral rim calcification which can mistakenly be diagnosed as tuberculosis.

This case highlights - in addition to the known picture of atelectasis/obstructive emphysema associated with bronchial foreign body - the peculiar radiological presentations with which the foreign body can show itself in our daily practice. Hence the role of a check bronchoscopy in children with a suspicious picture of foreign body aspiration.

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