Case report:

A child with suppurative lung disease by missed foreign body aspiration: a case report

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Abstract:

Airway foreign body aspiration (FBA)is a frequent problem that affects young children, present with acute respiratory distress and cough followed by sudden chocking. Prompt identification and early treatment can save the child from a life-threatening emergency.Delayed diagnosis due to lack of history and clinical suspicion may lead to permanent lung damage, which may be a curse for a lifetime.We share an experience of a 4½-year-old boy who presented with suppurative lung disease was associated with neglected FBA. Early diagnosis and intervention canprevent,and ultimately reduce long-term morbidity and mortality, along with improving the better outcome regarding FBA.

Keywords: Foreign body aspiration (FBA); Delay; Bronchiectasis; Lobectomy

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Introduction:

Foreign body aspiration (FBA) is a common problem in children, which leads to potentially serious and sometimes fatal consequences.[1]FB aspiration is now the second leading cause of accidental death among < 5 years of aged children.[2]Toprevent deadly complications of FBA, it is essential to prompt recognition and initiation of early intervention. Sudden coughing or chocking in a healthy child while playing with small objects or eating areexpected features of FBA.Although sometimesit does not exhibit any symptom.[3] A chest X ray (PA view) in expiration is the standard for diagnosis of FBA but in negative radiology, bronchoscopy aids in finding out hidden FB in high suspicious cases.[3] Manytimes identification of the problem was failed by the physician due to negative history or lack of suspicion. If the diagnosis and appropriate intervention were delayed, eventually the affected child may develop persistent pneumonia, finallylung catastropheand even death.[4]

Case Summary:

A4½-year-old immunized boyof non-consanguineous parentswas admitted with history ofrecurrent episodes of fever of variable nature and intensity and coughduring the last 6 months.Along with fever he also had recurrent episodesof dry cough. Beforehospitalization coughbecame persistent andproductive withoccasional purulent sputum and was associated with respiratory distress.He had nohistory of contact with TB case. He was treated with several courses of antibiotics.Clinical examination revealed high-gradefever(temperature 104^0F), tachypnea (R/R 42 breaths/min), pallor and clubbing, wasted andBCG mark present. He hadrestricted chest movement with reduced chest expansibility and diminished breath sound with coarsecrepitation over the right lower chest.Chest X-ray (Fig.-1, 2) showed homogeneous opacity in the posterior basal segment of the lower lobe of the right lung, investigation for tuberculosis was negative but sputum C/S revealed growth of Staph. Aureus and after treatment with antibioticsappeared honeycomb shadow (Fig.-3). HRCT scan of the lung (Fig.-4) showspresence of multiple saccular bronchial dilatations forming a cluster of ring shadows in right lower lobe

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consistent with right lower lobe bronchiectasis. He has beentreated with antibiotics ceftriaxone plus flucloxacillin and decided for lobectomy. During the operative procedure, a plastic ball was found (Fig.-5) which obstructed the right lower lobe bronchus. The child wasdischarged home on the 6th postoperative day and advised for follow up. On subsequent follow up visits, his general well-being improved and no systemic disease was observed.

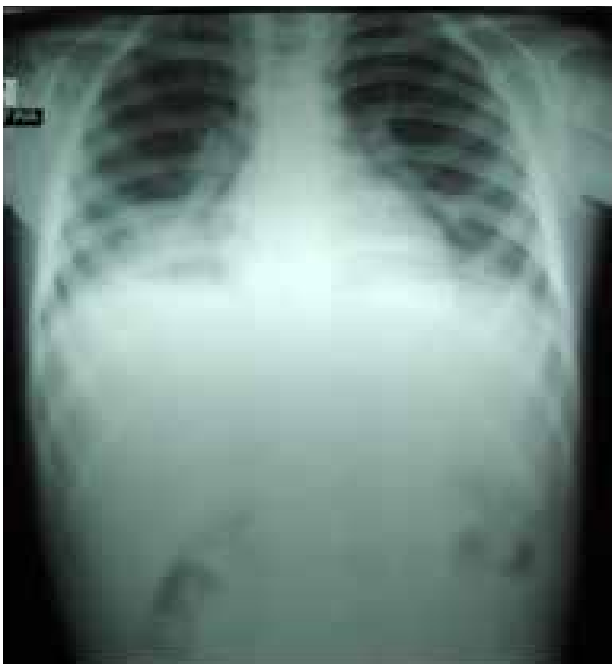

Fig.-1: X-ray chest (AP view) : homogeneous opacity in lower lobe of right lung

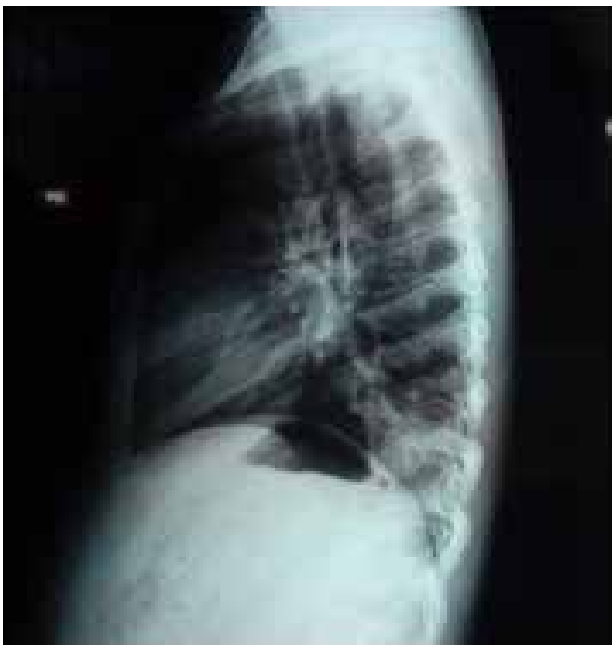

Fig.-2:X-ray chest (Lateral view): opacity in post. basal segment of right lower lobe

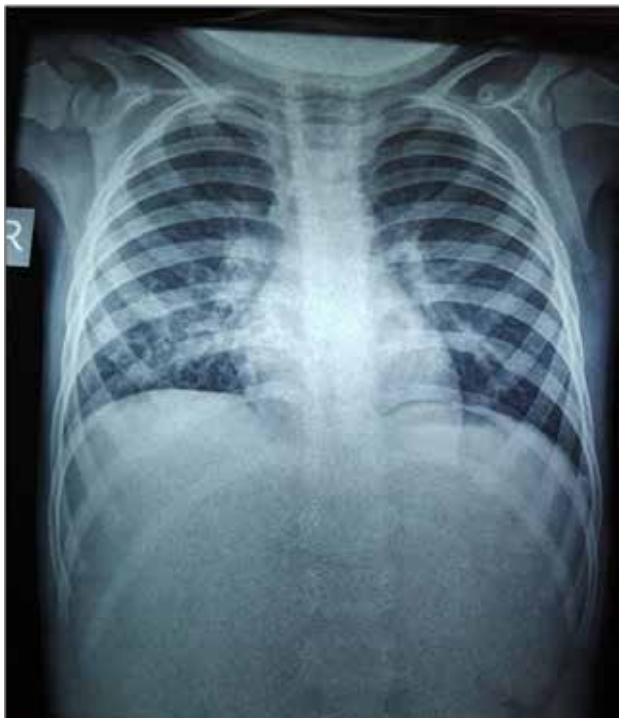

Fig.- 3: X-ray chest (AP view) : honey comb appearance in middle & lower zone of right lung

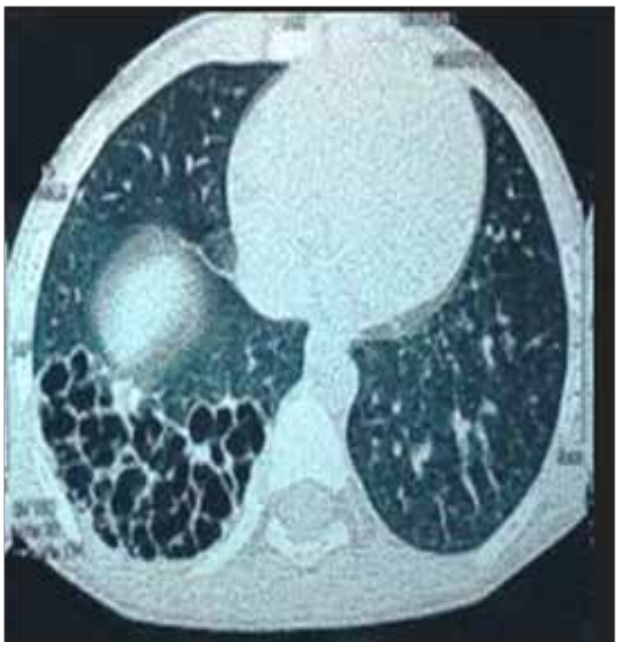

Fig.- 4:HRCT scan: bronchiectasis at right lung

Discussion:

Foreign body aspiration is a common paediatric accident in children.[5] It may occur at any age; more those ≤ 5 years due to age related curiosity to put an object in their mouth to explore the environment and more common among boys.[6-8] Depending on the nature of FBs, site of impaction and extent of blockage, manifestations vary. In acutely, a classicallyaffected childpresents with sudden chokingfollowed by

Fig.- 5: Foreign body (a red round plastic ball)

coughing and respiratory distress. The link between choking attack and thereafter symptoms may not be noticed andonce skipped the initial acute event, the child may developchronic cough, fever as a result ofrecurrentpneumonia.In the long run, turns tolung catastrophe (bronchiectasis) in to failed to care cases.[10]Our child presented with recurrent cough with difficult breathing and repeated query failed to reveal H/Ochoking attack while playing or eating as it is the most important information for early diagnosis of FB aspiration, even with normal physical and radiographic findings.

Approximately 90% ofFBs are food and toys followed by nuts and peanuts are accounted for about59%.[11-13]In asymptomatic patients, 15-30% cases radiograph may be normal, and CT can help to identify radiolucent FBs.[14] FB may not be evident in X-ray chest, particularly when it is made of thin plastic; also difficult to be seen during endoscopy and hard to diagnose.[15]Confirmation of the diagnosis should be made with bronchoscopy but suspicion and history is very important.[1]Chest X ray didn't show the classical earlier feature of unilateral hyperinflation rather showed, consolidation, bronchiectasiswhich is the late complication of FBs aspiration found in our case.[7]Likewise, In toddlers with unexplained persistent pneumonia with refractory parenchymal infiltrates, unrecognized FB aspiration should also be considered.[12]As, neglected and retained FBs may result in pneumonia, atelectasis and bronchiectasis. Our case presented with recurrent attacks of fever, cough for long times which culminates into bronchiectasis.

Most of the FBs found impacted on the right bronchial tree, followed by the left side and central airway like trachea then bronchus.[7,16-17]Rigid bronchoscopy is the gold standard for successful removal of bronchial FB who present early but it failed to remove the FB when the patients presented late.[5]In failed cases, surgical modalities of management like bronchotomy, lobectomy and pneumonectomywill be preferred.[7]For the management and evaluation of bronchiectasis the boy underwent surgical procedure and during the operative procedure, a plastic ball was found in the right lower lobe bronchus.In our case no H/O chocking, based on the clinical picture, radiological evidence and even on HRCT we did not diagnose FB aspiration, which was only identified during the operative procedure.

Conclusion:

Foreign body aspiration (FBA) in the airway may causea wide spectrum of problems in children like life-threatening emergency (immediate death) and long term pulmonary damages. Precise history, thorough clinicalexamination and relevant investigations, can identify the majority of cases.In the absence of typical history, when a child presents with a refractory unremitting persistent cough, the physician should evaluate the case keeping in mind the probability of FB aspiration to reduce the untoward morbidity associated with long-standing airway foreign bodies.

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Authors' contribution:

Data gathering and idea owner of this study: AT, AHM, TA

Study design: AT, TA

Data collection and analysis of the study: AT, AHM, TA

Writing andsubmitting the manuscript: AT, AHM, MAI

Editingand approval of final draft: AT, MAI

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