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Pediatric Foreign Body Aspiration:- Importance of Accurate History and Investigation in Delayed Presentation

Dr. Vinay Bhushan[1], Dr. Sushil Srivastava[2]
[1]Senior Resident, University College of Medical Sciences & Guru Teg Bahadur Hospital, New Delhi, India
[2]Asstt Prof, Deptt of Pediatrics, University College of Medical Sciences & Guru Teg Bahadur Hospital, New Delhi, India

***Corresponding author**
Dr. Vinay Bhushan
Email: drvbhushanmd@gmail.com

Abstract: Foreign body aspirations frequently are missed on initial evaluation, and delay in diagnosis is associated with increased risk for complications. specific questioning regarding choking episode is crucial. plain radiography often is helpful in diagnosis and localising of foreign bodies. However, studies suggest that sensitivity varies, and additional evaluation must be undertaken if clinical suspicion exists. In this study we reported child with sign and symptom of severe pneumonia although having foreign body.
Keywords: Foreign bodies, Bronchi, Respiratory system, Radiography, bronchoscopy.

INTRODUCTION

Foreign body aspiration account for a significant number of preventable childhood death. Younger children are at the highest risk for aspiration. Most studies shows that fewer than 15 % of aspirations occur among children older than 5 yrs of age. Unlike adult, children shows higher incidence of foreign bodies in left side, which may be explained by children having symmetric bronchial angles until about 15 yrs of age. It is not until that age that the aortic knob fully develops, displacing the left main bronchus and creating a more obtuse angle at the carina [1].

Sometimes presentation at emergency room may vary. Parents may seek medical attention after witnessed choking episode, but more often, the childen present some time after the event had occurred. Frequently, patients have a preceding diagnosis of asthma or pneumonia as the explanation for their recurring symptoms, making history potentially misleading.

CASE REPORT

A 8 yr old male child was admitted in our hospital pediatric casualty with complaints of Intermittent cold ,cough since 10 days, Fever since 4days, Fast breathing since 2 days, and Severe respiratory distress on the day of admission. On admission at emergency child was in severe respiratory distress, febrile, Heart rate of 150/min, Respiratory rate -68/min, with Intercostal retraction Subcostal retraction and Nasal flaring present, Blood pressure-112/64 SpO2-54%, on room air On Chest examination air entry was decreased on right side, crepts on left side, and percussion note was resonant on right side. Cardiovascular system, Abdomen, and CNS examination was within normal limit. Initially diagnosis of severe pneumonia with right sided pneumothrax was kept, so a intercostal drainage was put on the right side but no air bubble was seen and the child's respiratory distress persisted.

On investigation—Chest X Ray showed hyperinflation on right side with consolidation collapse on left side of chest (Figure 1).

Fig-1: Chest x ray posteroanterior view; hyperinflation on right side with consolidation collapse on left side of chest

Blood investigation showed Hemoglobin- 8.8 g/dl, Total lecocyte count-4900, Platlet Count -4.78 lac, packed cell vol – 25.6, Blood urea- 39, sodium- 135, potassium-3.7, blood sugar- 94 & ABG was normal.

Child showed no signs of improvement and was in impending respiratory failure- hence he was

intubated and put on mechanical ventilator on PRVC-SIMV mode.

As above history and investigation did not match with clinical findings further history was reviewed, which revealed an episode of seed inhalation 4 days back- followed by fever- fast breathing and then respiratory distress. (After recovery child told when he was playing football and eating simultaneously plum (ber fruit) ball struck on his face and then resulted in inhalation of the seed).

ENT reference was sought for foreign body removal through bronchoscopy, but was deferred as general condition was very poor. CT chest done (figure 2).

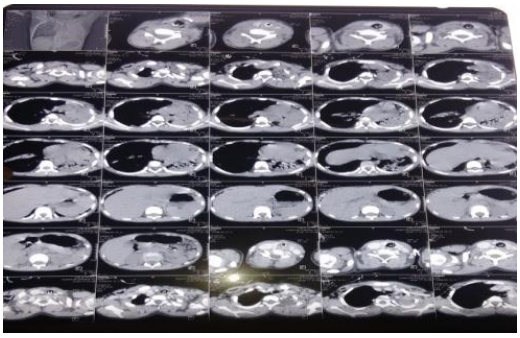

Fig-2: CT chest showed- foreign body impacted at the bifurcation of left upper and lower lobar bronchus protruding into the left upper lobar bronchus with complete collapse of left upper lobe and partial collapse and consolidation of the lingular and lower lobe with massive right pneumothorax and small left pneumothorax with right surgical emphysema, consolidation of right middle lobe

Subsequent to the CT report, intercostal drainage was put on the right side for the pneumothorax . Subsequent to the drainage child's distress improved ,and the ventilatory requirements also became minimal. The child was extubatedl after twelve hours. However cough and pain persisted especially on the left side with chest examination being normal on both side. After ENT consultation foreign body was removed through rigid bronchoscopy under general anesthesia from left main bronchus. Following which child 's pain and cough subsided.

Fig-3: Foreign body:-*Plum (ber fruit*)

Case had following peculiarities

Foreign body aspiration is more common in younger age group , in our case the age was 8 years. Foreign body aspiration in pediatric patients is more common on the right side because of the anatomical straight right main bronchus, in the presented case the aspiration was in the left main bronchus. The history of foreign body aspiration was overlooked in the initial pediatric emergency examination. Also initial evaluation by the ENT attributed the respiratory distress to infectious etiology i.e pneumonia.

The existing literature recommends that even in case of suspected foreign body aspiration, diagnostic rigid bronchoscopy must be done, as it has been found that in all such cases in only 15% of the cases no foreign body could be found [2]. As the most common foreign body aspiration is organic in nature and is not visualized in a Chest X Ray. A timely bronchoscopy prevents significant morbidity and mortality in such cases, as most of the time a choking spell with cough is not remembered easily in small children and they present generally two to three days later with features suggestive of bronchopneumonia due to secondary inflammation and swelling [3]. The obstructive features also present late in the clinical course.

In suspected cases of foreign body aspiration, intubation and mechanical ventilation should be avoided as the chances of pneumothorax are very high on the normal side which is already have compensatory emphysematous changes. Emphasis should be on early, prompt rigid bronchoscopy.

DISCUSSION

Foreign body aspirations frequiently are missed on initial evaluation and delay in diagnosis is associated with increased risk for complication.

Plain film radiography often is helpful in diagnosis and localization of foreign body, however additional evaluation must be undertaken if clinical suspicion exists and film are normal. Detailed history must be reviewed as initial history may missed the case.

CONCLUSION

To prevent delayed diagnosis, characterstic symptoms, signs and radiological findings of foreign should be checked in all suspected cases. As clinical and radiological findings of foreign body in delayed cases may mimic other disorders, the clinician must be aware of the likelyhood of foreign. Regadless of radiological findings, bronchoscopy should be consider in patients with an appropriate history.

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