Foreign Body Aspiration: A Case Report

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SUMMARY

Case definition: Foreign body aspiration (FBA) refers to accidental passage of objects into the airway through the mouth or nostrils.

Reason for reporting: Sometimes, history and x-ray findings in a child with FBA are not classical. This often leads to a delay in the diagnosis especially if the foreign body is not radio-opaque. This case report is being presented to highlight the importance of high index of suspicion and early bronchoscopy even if the history is not typical and the chest x-ray appears normal.

Case report: We present an 11 month old baby with 3-day history of cough, fast, noisy and difficult breathing; and few minutes' history of fever. He was dyspnoeic and wheezing. Chest x-rays showed only features of bronchopneumonia. On strong suspicion of foreign body aspiration, bronchoscopy was done and it revealed a cotyledon of groundnut at the level of the carina. This was successfully removed and the child was discharged home well on third day post surgery.

Conclusion: This case highlights the need for early bronchoscopy in a child suspected to have FBA even when the history is not typical and the x-ray appears normal as is often the case if the foreign body is not radio-opaque.

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INTRODUCTION

Foreign body aspiration (FBA) refers to accidental passage of objects into the airway through the mouth or nostrils. It is a fairly common problem amongst young children, particularly those aged less than 4 years[1, 6]. Males are more commonly affected than females[2, 4, 57] possibly because of their more inquisitive nature. Objects aspirated vary from place to place. In Turkey the three most commonly aspirated foreign bodies are sunflower seed (10-32%)[1,7], hazelnut (19%)[7] and pumpkin seed(19%)[7],whilst in India the commonest foreign body aspirated is groundnut (60-70%)[4,5]. In Enugu State, Nigeria, the commonest foreign body aspirated is groundnut (63%).[6]

Symptoms such as choking[1,5,7,8,9,10], sudden onset of respiratory distress[3,9], persistent cough[4,7,9,10], and wheezing[7,10] are suggestive of FBA. A study done by Metrangels et al[8] showed that a history of choking is the most useful parameter in diagnosis with a sensitivity of 96% and specificity of 76%. In Pakistan[9] and Nigeria[3], sudden onset respiratory distress is the most common symptom at presentation. This was observed in 81% of cases of FBA in Pakistan[9].

The commonest sign in cases of FBA in children all over the world is reduced intensity of breath sounds, on the affected side[1, 4,5,7,9]. This is found in 60 77% of cases. The commonest radiologic finding is hyperinflation on the affected side due to distal air trapping (obstructive emphysema)[1, 5,9,10]. This is seen in about 60% of cases. However CXR may be normal in 30 40% of cases[5,9,10].

Delayed diagnosis of FBA in children is associated with increased risk of developing respiratory complications such as atelectasis, emphysema, pleural effusion, pneumonia (broncho/lobar), bronchiectasis, broncho oesophageal fistula[9-12].

Delayed diagnosis of FBA can also be fatal[2, 13].

This case therefore is presented to sharpen the primary care Physician's (e.g. house officers, medical officers, family physicians and paediatricians) index of suspicion, so as to reduce the morbidity and mortality related to FBA. It also adds to the available literature on FBA in Nigerian children.

CASE HISTORY

Baby NC, an 11month old male infant presented with a 3 day history of sudden onset of cough, fast, noisy and difficult breathing; and few minutes history of fever.

He was well nourished, fully conscious, dyspnoeic, acyanosed and febrile (T = 38.3°C). Respiratory rate was 60/min, he was wheezing, flaring and had intercostal and subcostal recessions. Trachea was central. He had rhonchi bilaterally with reduced intensity of breath sounds bilaterally but no crepitations.

A diagnosis of FBA with atelectasis and 2° bacterial infection was made. The differential diagnoses were acute asthma and bronchiolitis.

An urgent CXR was done which showed prominent hilar lymph nodes and increased lung markings. Asthma or bronchiolitis were then considered more likely. He was maintained on intranasal oxygen and commenced on subcutaneous adrenaline, intravenous hydrocortisone, syrup salbutamol, syrup amoxil and intravenous fluids.

Respiratory distress reduced with the above management but by 39hrs after admission he was still too dyspnoeic to be discharged; still had fever, a full blood count picture suggestive of sepsis, and now had coarse crepitations bilaterally posteriorly. A CXR repeated five days after the first showed patchy opacity in the right basal portion of the right lung with prominent hilar vessels. Further review by the ENT surgeons showed slightly reduced breath sounds on the right lower zone anteriorly.

Bronchoscopy was done on 9th day of admission under general anaesthesia. A cotyledon of groundnut at the level of the carina flapping between the trachea and the right main bronchus was found and was removed. He became afebrile and free from respiratory distress and was discharged home on the 3rd day post surgery.

DISSCUSSION

This case clearly shows that though a diagnosis of FBA was made on admission, attempts at aggressive management slowed down when no foreign body (FB) was seen on CXR. Absence

of radio opaque FB is a very common cause of delayed diagnosis of FBA[3]. Sehgal et al in their study in India found radio opaque FB in only 4.2% of cases[5], whilst Ilyas et al in Pakistan found radio-opaque FB in 12% of cases.

This case also illustrates the fact that the management of close differentials of FBA (e.g. Asthma, bronchiolitis, croup, and pneumonia) may give momentary relief, which may further delay the diagnosis of FBA and specific management. Therefore in managing any of the close differentials of FBA, if after 72 hours, respiratory distress is still marked, FBA should be very seriously considered and bronchoscopy should be done.

The outcome in this patient was good. This is because prognosis of FBA depends on three independent factors namely: the size of the FB, the location of the FB and the time interval between aspiration and removal of FB (interval time). The FB here was small (one cotyledon of groundnut) and it was located at the carina flapping between the trachea and right main bronchus. Several studies have shown that the site in which aspirated FB most commonly lodge is the right main bronchus[3-6, 9]. He suffered aspiration pneumonitis because the interval of time was >24hours (11 days). However he fully recovered from this and was discharged home at 3 days post surgery.

CONCLUSION

We believe that a high index of suspicion of FBA in children with non-classical history; and early bronchoscopy even when the chest x-ray appears normal will significantly reduce the incidence of delayed diagnosis of FBA and therefore reduce morbidity and mortality.

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