

## Fish ball: Deadly or delicious?

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### Abstract

Aspiration of foreign body most commonly occurs in young children and is associated with a high rate of airway distress, morbidity, and mortality. We report an 11-year-old girl with learning disability presented with delayed presentation of fish ball aspiration causing complete airway obstruction leading to pulmonary oedema due to the famous ball valve effect.

### Keywords

Foreign body; upper airway obstruction; learning disability; paediatric.

### Introduction

Processed fish made into balls or Fish balls are among Malaysia's delicacies which is eaten alone (fried) or in soups (boiled). The firm, chewy texture and its spherical shape makes it susceptible for foreign body injuries and subsequently choking and aspiration if it is not adequately chewed among the pediatric population. This may result in a complete airway obstruction.

The presenting symptoms of foreign body aspiration range from none to severe airway obstruction, depending on its location, size, patient age, and chronicity and may often be innocuous and nonspecific [1]. In the absence of a choking or aspiration event and witnessed injury, the diagnosis may be delayed for weeks to months and contribute to lung complications such as obstructive pneumonia or lung abscess [1,2].

Therefore, a diagnosis of foreign body aspiration can be most challenging more so among asymptomatic

matic, unwitnessed paediatric patients. This condition is made arduous in children with learning disability. Individuals with learning disabilities have complex needs and therefore may encounter many challenges when accessing health care [3].

Foreign bodies can be classified into organic and inorganic foreign bodies. Although the latter is commoner in children within the Malaysian population, organic foreign bodies do carry significant morbidities and mortality [4].

## Case Report

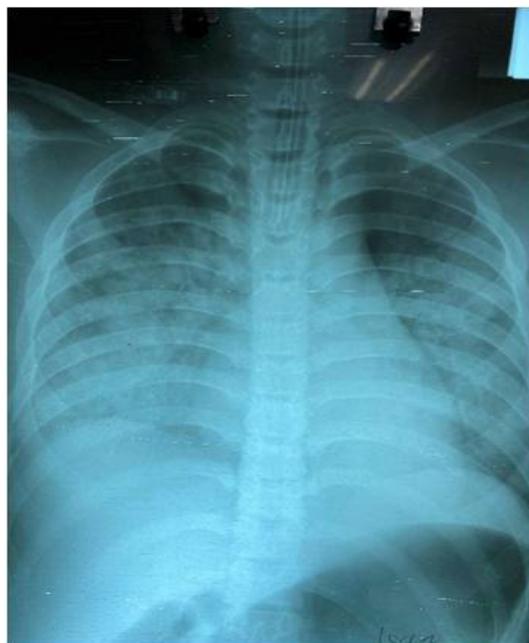
An 11-year-old girl with nonverbal learning disability was brought to emergency department after being aphonic and cyanosed following ingestion of a fried fish ball. Heimlich maneuver was performed but no foreign body was expelled. Instead, she coughed out blood.

Paternal history revealed a healthy child without fever or upper respiratory tract infection symptoms. Upon examination, she appeared restless and tachypneic with  $SpO_2$  ranging from 76-83%, Both lung fields have reduced breath sound on auscultation. Nasopharyngolaryngoscopy with the paediatrician and anaesthetist showed a rounded, yellowish foreign body obstructing the laryngeal inlet during inspiration mimicking the ball valve mechanism.

The foreign body was removed with a Macintosh laryngoscope and Magill forceps under sedation. She was intubated post removal of foreign body as the oxygen saturation was poor and in anticipation of airway oedema. Blood was aspirated from the endotracheal tube post intubation. Chest radiograph (Figure 1) showed air space opacities involving both lungs predominantly at both lower zones and air trapping seen at the left upper zone suggestive of aspiration pneumonia and/or pulmonary oedema.



**Figure 1:** Partially chewed fish ball removed from the laryngeal inlet.



**Figure 2:** Opacities involving both lungs predominantly at both lower zones and air trapping seen at the left upper zone.

She was nursed in Intensive Care Unit (ICU) and successfully extubated after 48 hours. In ICU, she was given intravenous dexamethasone and amoxicillin clavulanic acid. Repeated chest radiograph revealed improved air space opacities and lung consolidation. She was discharged after a further 48 hours of ward observation.

## Discussion

Foreign body aspiration is an important cause of death in paediatric age group. Their exploring nature and mouthing habit make them susceptible for choking and aspiration [4]. Food particles are one of the frequent types of foreign body being aspirated and it is associated with specific shapes and sizes [1]. Among the types of food susceptible for choking because of its shape are grapes, hot dogs, candies, and nuts [4]. Other types of foreign body that contributes to high frequency of fatality is the 3-D bulk and conforming objects [5].

In this case, we encountered foreign body aspiration in a girl with learning disability in which this condition has made the diagnosis even more difficult as accurate history cannot be obtained. Learning disability refers to a group of heterogeneous disorders which may affect the acquisition, organisation, retention, understanding or use of verbal or nonverbal information. Admission to emergency department can be terrifying and stressful experience in individuals with learning disability because they have complex needs, and this may result in additional complications or delayed diagnosis [3]. Anxiety may further destabilise the impending airway.

They are unable to describe symptom, express pain or ask for help. Secondly, behavioural problems can be triggered or exacerbated by discomfort, pain, or anxiety. Thirdly, the health provider has little knowledge or understanding about the needs of individual with learning disability. In addition, we tend to miss out the important medical symptoms as they are seen as part of patient's disability. Hence, we should be more suspicious to avoid delay in the diagnosis and prompt action need to be taken to avoid unwanted complications.

Much attention needs to be paid to the level of care in individual with learning difficulty especially in acute emergency setting. In dealing with patient in this group, we should find out the best way to communicate with the patient. Ask help from the family members, teacher or their close friend who are more familiar with them is one of the communication strategies. Training and education in the care of patients with a learning difficulty may contribute to satisfactory situation for both health care provider and patient. Effective communication and interaction skill should be a prerequisite for health care staffs because by implementing this, a better standard of care can be delivered. Furthermore, complications can be greatly reduced.

Apart from this, close supervision of the children is important to prevent inhalation of foreign body. Caregiver should ensure a safe surrounding including the foods and toys given to their children. The caregiver also needs to be educated on certain life-threatening symptoms and first aid that can be taken to save their children.

## Conclusion

Disabled patients with unwitnessed foreign body may have a delayed diagnosis of a foreign body injury especially if it is not witnessed. Therefore, when in doubt with the presence of choking symptoms, there should be a high index of suspicion with appropriate management to follow suit.

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