

## Even Small Pea Nut Proves Fatal One: A Case Report of Chocking

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### Abstract

Foreign body choking are very frequent in occurrence which is mostly accidental. Though, the accidental foreign body inhalation is observed in all age group, the small children below 4 years of age are the common victims. Food related items and plastic toys are the foreign bodies commonly encountered. Food is the energy provider for the life which can become an asphyxiating agent at times. The spectrum of airway foreign bodies varies from country to country, depending on the diet and customs of the population. It can be fatal if it results in serious impairment of respiration or cardiac inhibition. Here we report a death of a two year child brought for autopsy who had died after aspiration of groundnuts. The boy had started grunting while eating groundnuts. He was immediately diagnosed as aspiration of groundnuts. He died within 24 hours of admission inspite of emergency removal of the two pieces of groundnut by rigid bronchoscopy.

**Keywords:** Accidental; Choking; Aspiration; Bronchoscopy.

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### Introduction

Chocking is the variety of asphyxia caused by an obstruction within the air passages. It is usually due to the inhalation of a foreign body, but it can be caused by inhalation of the products of the disease (or violence) or by anatomical changes due to disease [1]. Chocking can be partial or complete depending upon the size of the foreign body. A large foreign body may get impacted in the pharynx and completely obstructs the airflow causing death from asphyxia. While, a small object partially blocking the lumen of the larynx may cause death by laryngeal spasm. Otherwise, with partial blockage some, although inadequate, flow of air into the lungs is maintained. In such cases, the partial obstruction to the airflow can eventually become complete due to reactionary mucosal edema, hemorrhage and

collection of secretions. However, all deaths due to chocking are not result of asphyxia as irritation of tracheal mucosa by foreign body may cause death by reflex parasymphathetic cardiac inhibition.

It is an emergency situation which can lead to fatal outcome, if it remains unattended or not properly managed. Although, chocking incidents occur in all age group, it is most common in the pediatric age group. The most common objects on which children choke are food, coins, balloons, and other toys [2]. The accidental chocking usually occurs during eating when food is accidentally inhaled, especially when victim is laughing or crying [1]. Here we present a case of chocking by groundnut in a two year old boy. He accidentally choked on groundnut while eating. He died due to partial chocking in spite of emergency removal of few groundnut pieces by rigid bronchoscopy.

### Case Report

Atwo year male child started grunting while eating groundnuts and developed respiratory distress. His parent immediately rushed him to a nearby private hospital where diagnosed as case of foreign body aspiration was made. He was referred to the advanced ENT and multispecialty hospital at district

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place for required necessary management. ENT surgeon removed two groundnut pieces by emergency rigid bronchoscopy at that hospital. In spite of removal of foreign body, the condition of the hypoxia did not improve and patient's condition worsens. Afterwards, he was referred and admitted to our Teaching Institute with preliminary diagnosis- post foreign body aspiration pneumonitis with bronchospasm. He died after 12 hours of admission on next day morning of the accidental choking.

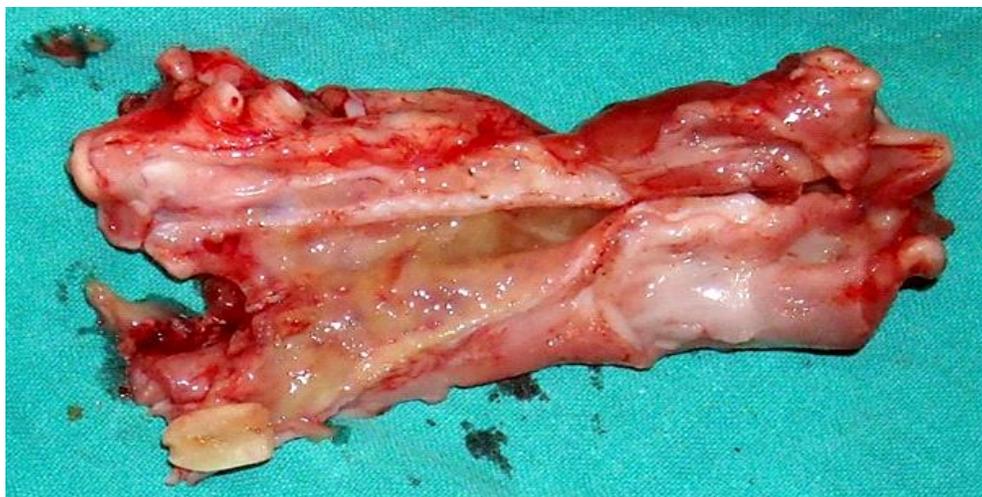
The autopsy was performed in the Department of Forensic Medicine on same day of death. During autopsy, external examination showed bluish discoloration of nail beds and lips. Rigor mortis was present all over the body. No injury could be detected

on the body. On internal examination, all organs were congested with evidence of cerebro-pulmonary edema. On meticulous dissection and examination of respiratory tract, whitish yellow, thick, mucoid froth completely occluding trachea was evident extending up to the vocal cords. A white half groundnut piece was found impacted at the level of origin of left main bronchus. Along with the mucosal edema and surrounding thick yellowish mucus it had completely occluded the left main bronchus. (Fig. 1 and 2) Laryngeal mucosa was edematous and congested.

Opinion as to the cause of death is "Chocking as the cause of death due to obstruction of respiratory passage by a foreign body."



**Fig. 1:** Shows the ground nut piece near bifurcation of trachea and mucosal edema with thick yellowish mucus surrounding it had completely occluded the left main bronchus



**Fig. 2:** Shows another piece of ground nut in lumen of right bronchus

## Discussion

Chocking is a leading cause of morbidity and mortality among children, especially those who are 3 years of age or younger [2]. Uncoordinated swallowing mechanisms in young children, inability to time swallowing and breathing, immature dentition (lack of molar teeth until 3-5 years), physical activity, the habit of exploring objects with the mouth are the risk factors involved in childhood asphyxiation due to ingestion and inhalation of foreign body [3]. Chocking in the child may present with definite history of aspiration, choking followed by paroxysms of cough or may present with recurrent chest infections, or pneumonia not responding to routine antibiotic treatment [4]. In the present case the male child had complained of cough and sudden breathlessness while eating groundnuts. Males show predominance as compared to females; the reason could be more inattentiveness and lack of supervision towards male children as compared to females [4,5].

The spectrum of airway foreign bodies varies from country to country, depending on the diet and customs of the population. Vegetable matter and dry fruits have been reported to be the most commonly aspirated food in the pediatric airway [6]. Like in present case, groundnut was reported to be the most common trachea-broncheal foreign body among Indians in study conducted by Sinha et al [4]. In the study conducted by Jaswal et al [5], the most common type of trachea-broncheal foreign body observed below 3 years of age was food material (seeds, beans). The hotdogs and peanuts are the most commonly aspirated foreign body in Western countries [2, 3, 6].

Choking is an emergency condition with high mortality if prompt measures are not being taken at the earliest [4]. In these cases the external resuscitative techniques may be useless, being unable to ventilate the lungs. Rigid bronchoscopy is primary maneuver to remove foreign bodies which is a specialized procedure requiring a skilled surgeon and a trained anesthetist. The availability of rigid bronchoscopy or the prompt removal of the foreign body is very crucial part to save life of patient as irreversible brain damage or death may occur even 5 - 10 minutes of mechanical obstruction. In present case there is delay before the rigid bronchoscopy was carried out due to unavailability at primary care hospital. The other important factors that determine the possibility of

favorable outcome in choking cases are age of the affected person, level of consciousness, occurrence of crying, and characteristics of the foreign bodies [7].

Although, the definitive treatment was carried out in present case, a piece of groundnut embedded in left main bronchus at its origin was missed during rigid bronchoscopy procedure. The reason for non-visualization of groundnut piece might be due to angle of inclination of left bronchus to the trachea, accumulation of thick mucus around ground nut piece with mucosal oedema and non-suspicion as two pieces were removed. Concomitant mucosal edema, continued collection of secretion above the blockage leads to complete obstruction and resultant death. In view of unimproved hypoxia and worsening of patient's condition, the clinical diagnosis of post foreign body aspiration pneumonitis with bronchospasm was made. However, actual reason behind patient's condition and cause of death was detected on autopsy.

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