

## Case Report

# Sudden Deaths Due to Choking

<sup>1</sup>Soumya Ranjan Nayak, <sup>2</sup>Manoj Kumar Jena, <sup>3</sup>Bibhuti Bhusan Panda, <sup>4</sup>Purnima Singh

### Abstract

Death due to accidental choking is observed in all age group and small children below 4 years of age are the common victims. Choking is commonly seen in children when objects such as small toys, table tennis ball and coins are placed in mouth and inhaled. Food is the most common cause of choking and food which is the life provider can become an asphyxiating agent at times. Children younger than one year of age are more likely to aspirate food, whereas older children tend to choke on non-food items. Aspiration of gastric contents is common in individuals with a decreased level of consciousness in drug overdose and during anaesthesia. The risk of aspiration is high after removal of an endotracheal tube because of residual effects of sedative drugs, the presence of a nasogastric tube, swallowing dysfunction related to upper airway sensitivity, glottic injury and laryngeal muscular dysfunction. Aspiration can present with acute respiratory distress but in many elderly individuals, it is silent. We hereby report cases of sudden death due to choking which were brought to our mortuary for autopsy.

**Key Words:** Choking, Sudden death, Aspiration, Autopsy

### Introduction:

Death due to choking is among the top five causes of accidental death in United States which comprises of approximately 2500 deaths per year. [1] Choking is a form of asphyxia which is caused by impaction of a foreign body in the respiratory passage usually between pharynx and bifurcation of trachea. [2]

More than 17000 infants and children are treated in the hospital emergency department for choking each year and more than 80% of these cases occur in children below 4 year age. [3]

Choking incidences occur in people of all ages but children under 3 years are more vulnerable.[1] Here we present a series of such cases brought to S.C.B Medical College & Hospital, Cuttack.

### Case one:

A seven years old boy while playing with his friends violently coughed and turned blue and fell down unconscious.

Then he was shifted to S.C.B Medical College & Hospital, Cuttack where the doctors declared him brought dead. During post-mortem examination, the nail beds were bluish in colour. Rigor mortis was present all over the body.

No injury could be detected on the body. On internal examination, a black colour whistle was found lodged in the larynx obstructing the lumen. (Fig. 1) Laryngeal mucosa was edematous and congested. All other organs were intact and congested.

Autopsy surgeon opined choking as the cause of death due to obstruction of respiratory passage by a foreign body.

### Case Two:

A 15 years old adolescent girl was brought dead in the casualty of S.C.B.M.C.H, Cuttack with alleged history of sudden loss of consciousness while playing with her friends.

During autopsy examination, face and sclera was congested with presence of sub conjunctival haemorrhages on both eyes. Nail beds were bluish in colour.

Tongue was found bitten and fecal discharge seen. Post-mortem lividity found on back and buttocks and no injury could be detected on the body.

On internal examination petechial haemorrhages were found on the surface of heart and visceral pleura. One white colour balloon was seen impacted in the laryngopharynx obstructing the airway. (Fig.2)

All the internal organs were intact and congested. Opinion as to cause of death was

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### Corresponding Author:

<sup>1</sup>Assistant Professor,  
Dept. of Forensic Medicine and Toxicology  
S.C.B Medical College, Cuttack, Odisha, Pin-753007  
E-mail: soumyarnayak@yahoo.com

<sup>2</sup>Prof. & HOD, Cuttack,

<sup>3</sup>Assistant Professor, Dept. of FMT,  
IMS & SUM Hospital, Bhubaneswar,

<sup>4</sup>Post Graduate Student, Dept. of FMT,  
V.S.S Medical College, Burla

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issued as **Asphyxia as a result of choking.** (Fig. 3)

### Case Three:

A 30 years old man was admitted in the casualty of S.C.B Medical College & Hospital, Cuttack due to road traffic accident and expired on the same day during treatment. During post mortem examination upper lip was found lacerated with dislocation of all incisors and canine teeth. Both maxilla and mandible found fractured in to pieces. Multiple superficial injuries were present all over the body.

There was a contusion of size 6cmx5cm on mid frontal area of scalp and right temporalis muscle found contused. Skull, duramater and brain were intact. Copious amount of fluid blood found within trachea, bronchus and bronchioles obstructing the air passage.

Fluid blood was also seen within esophagus and stomach. All other internal organs were intact. In this case death of the deceased was **due to choking resulting from inhalation of fluid blood.**

### Case Four:

One fatty built middle aged man was found dead in the early morning in his bed room. During post mortem examination no injury either external or internal could be detected on his body. Copious amount of partially digested food particles were found inside trachea, bronchus and bronchioles blocking the lumen.

Similar type of food particles were found in stomach emitting strong smell of alcohol. All the internal organs were deeply congested. In this **case death was due to choking as a result of aspiration of stomach contents.**

### Discussion:

Obstruction of the respiratory passage can be mechanical or anatomical origin. [4] Mechanical obstruction occurs due to foreign body like food particles, small toys, coins or lemon. [4] Choking can also occur when vomited material is inhaled or when a large food bolus or a piece of meat is accidentally impacted in the glottis. [5] Anatomical obstruction occurs due to anatomical structures such as tongue, swollen tissues of mouth and throat like inflamed epiglottis or results from injury to neck. [4]

Choking may occur following tonsillectomy or any operation on pharynx or larynx from a gauge pack left out inadvertently. [5] Complete blockage of the respiratory passage is not required as sudden death due to laryngeal spasm can occur by small object blocking the lumen partially. [5]

Incomplete obstruction eventually becomes complete when respiratory tract

mucosal oedema, inflammation, hemorrhage and bronchospasm occurs. [6]

Choking deaths are commonly seen at the extremes of ages with young children and elderly having the greatest rate of fatality. [4]

Choking is a common cause of accidental death in children less than one year age and 90% of choking deaths occur before the age of 5 years. [6] Children aged 1 to 3 years are vulnerable to choking because of their increased mobility, inability to judge the appropriateness of placing small objects in their mouth and appreciate the size of a piece of food, small airways, inadequate dentition for chewing and weaker cough reflex. [6]

Food is the most common cause of choking in all age groups. [4] Out of 17000 cases of Pediatric choking in the year 2001, 60% cases were related to food and 31% were due to non-food substance. [3]

As per the American Academy of Pediatrics, food particles commonly responsible for choking are hard candy, chewing gum, nuts and seeds, chunks of meat, whole grapes and popcorn etc. [7]

According to SoneaQureshi and Richard Mink, the most frequent aspirated objects are organic food items such as peanut, popcorn, hot dogs or vegetable matter. [8]

Objects other than food include balloons, coins, pen tops and pins. [8] Home is the most common place for choking incidents involving children. [6]

Most adults choking deaths occur at home, in a nursing home or in a psychiatric institution and only a third of fatalities happen in a restaurant. [6] In adults, choking incidences mostly occur during eating. [7]

Choking incidences commonly occur in children, intoxicated adults, mentally challenged and in some manual professionals like electricians, fisherman and carpenters who held small items between their teeth while working. [9]

In adults, predisposing factors include a decreased protective airway reflex resulting from aging, poor dentition with a tendency to swallow whole food, alcohol consumption and ingestion of other CNS depressants impairing gag reflex. [6] Abnormal position while eating or an emotional outburst can trigger choking episodes. [6]

Choking is almost always accidental in nature. [10] Choking can also occur at the time when the victim has been laughing or crying or someone out of fun had slapped him on his back, while the foreign body was in his mouth or

during rape or violent sexual intercourse after a heavy meal. [5]

Aspiration of regurgitated vomitus in to the lungs is commonly seen in acute alcoholics or during operations under ether anaesthesia or in young infants. [11]Choking may occur due to inhalation of blood from facial injuries, such as a broken nose, or dislodged teeth and laceration of the lips and gums inflicted during flight, if the victim becomes unconscious and lies on his back. [10]

A case of choking usually presents with vigorous coughing and respiratory distress, change in voice quality and swallowing problem, bluish discoloration of face, lips and nails and sudden loss of consciousness. [9]Foreign body impaction in larynx mostly accidental in nature and requires urgent intervention to save the life of the patient. [9]

**Conclusion:**

Choking incidences can be minimized by avoiding foods of the same size and shapes of a child’s airway like grapes, nuts, chunks of meat and popcorn and also by choosing safe age appropriate toys and learning CPR and Heimlich manoeuvre and by not letting children play with coins.

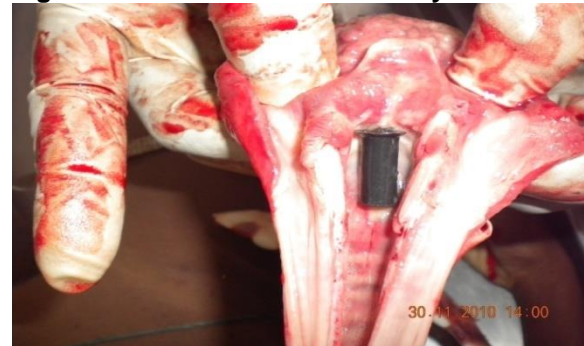
It can also be minimized by serving food in small manageable bites to children and by teaching them to sit down during meals and snacks and not to talk and laugh with food in mouth. Parents should be careful about deflated balloons, coins, batteries and parts of small toys.

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**Fig. 1: Whistle Present within Larynx**



**Fig. 2: A Balloon Obstructing the Laryngopharynx**



**Fig. 2: Petechial Haemorrhages on Visceral Pleura**

