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IP International Journal of Forensic Medicine and Toxicological Sciences

Journal homepage: http://www.ijfmts.com/

Original Research Article

Even a healthy snacks may snatches a life - A case report

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ARTICLE INFO

Article history:
Received 23-11-2022
Accepted 14-12-2022
Available online 21-01-2023

Keywords:
Foreign body
Aspiration
Breathlessness
Asphyxia

ABSTRACT

Foreign body aspiration (FBA) is an emergency condition and may be fatal. This condition is more common in children less than 3 years of age and male children are affected frequently. Among the foreign bodies inhaled, most of them are organic in nature and most commonly were lodged in right bronchus. Here we present a case report of an one and half year old male child who died of respiratory distress and found during autopsy that the cause for respiratory distress was foreign body aspiration.

1. Introduction

Foreign body aspiration (FBA) is a type of mechanical asphyxia that develops as a result of obstruction of the airway between the pharynx and tracheal bifurcation, even in bronchus.[1] Most asphyxial deaths caused by aspiration of foreign body occurs in children, although it can also happen in other high risk groups such as old ages, bed ridden patients, mentally retarded persons, people with oesophageal disease, etc.[2] FBA with complete airway obstruction is responsible for most of the mortality occurring immediately after the incidence. Although FBA with incomplete airway obstruction is not a cause of instant death, it can result in significant morbidities, complications and delayed deaths.[3]

2. Case History

An one and half year old male child was apparently healthy and went to sleep at 9 pm. During sleep, the child developed sudden onset of breathlessness around 01.30 A.M. and was taken to nearby Primary Health Centre. In PHC, he was treated for acute wheeze and sent back home. By 05.30 A.M on the same night, child's breathlessness worsened, so they took the child to the nearby Government Hospital where he was admitted with symptoms of breathing difficulty, noisy breathing and vomiting and was treated by a paediatrician. On admission, Heart Rate — 165/minute; Blood Pressure — 90/60 mm Hg; Respiratory Rate — 52/minute; SPO2–- 98% in room air; CXR — AP view Decreased Broncho vascular markings on right side (Figure 1); On probing at the time of Admission, the attenders gave the history that the child had taken burfi before going to bed. He was diagnosed as a case of Respiratory Distress in Shock/ suspected Foreign Body aspiration. Child was intubated and referred to higher centre from there by 11.00 A. M on the same day and the child reaches our Tertiary Care Centre by 12.30 P.M, where child was declared as Brought Dead.

After Police inquest, child's body was brought for autopsy; Autopsy was done on next day and the following findings were noted.

Moderately nourished and moderately built dead body of male child with bluish discoloration of gums (Figure 2); Post mortem hypostasis fixed on the back with areas of contact pallor; cornea – hazy; pupils - dilated and fixed.

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https://doi.org/10.18231/j.ijfmts.2022.029

Fig. 1: Chest x ray AP view showing decreased broncho vascular markings on right side

Fig. 2: Bluish discolouration of gums

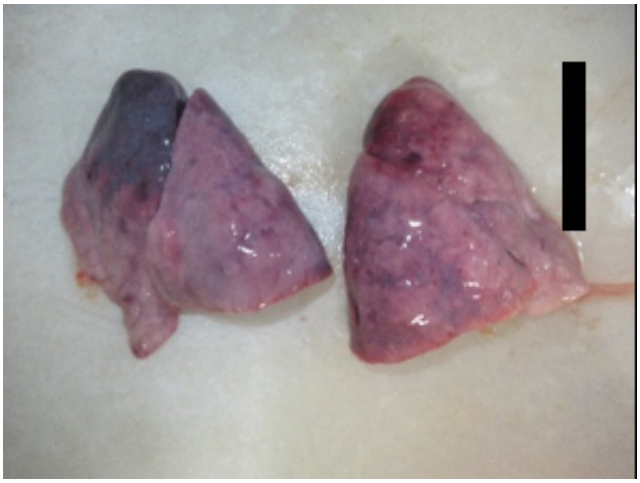

Fig. 3: Petechial hemorrhages on the lungs

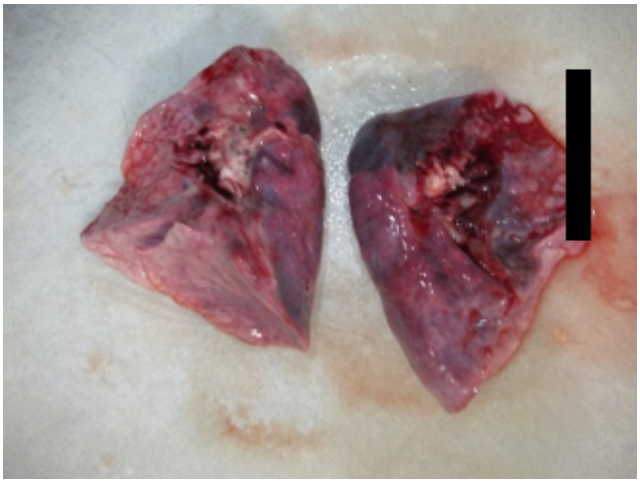

Fig. 4: Froth in the bronchi of both the lungs

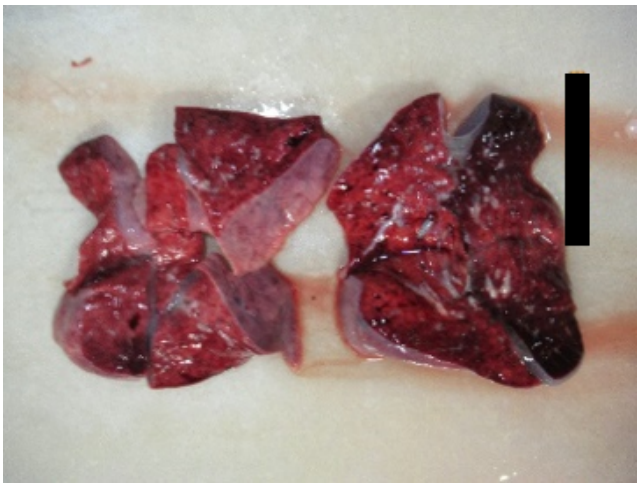

Fig. 5: Congested cut surface of lungs with frothy fluid oozed out from cut surface

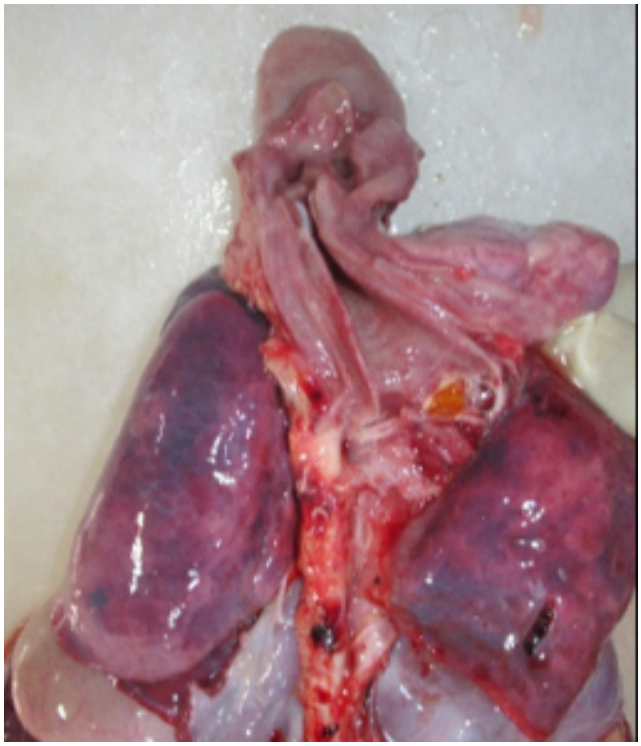

Fig. 6: Foreign body in the right bronchus near bifurcation

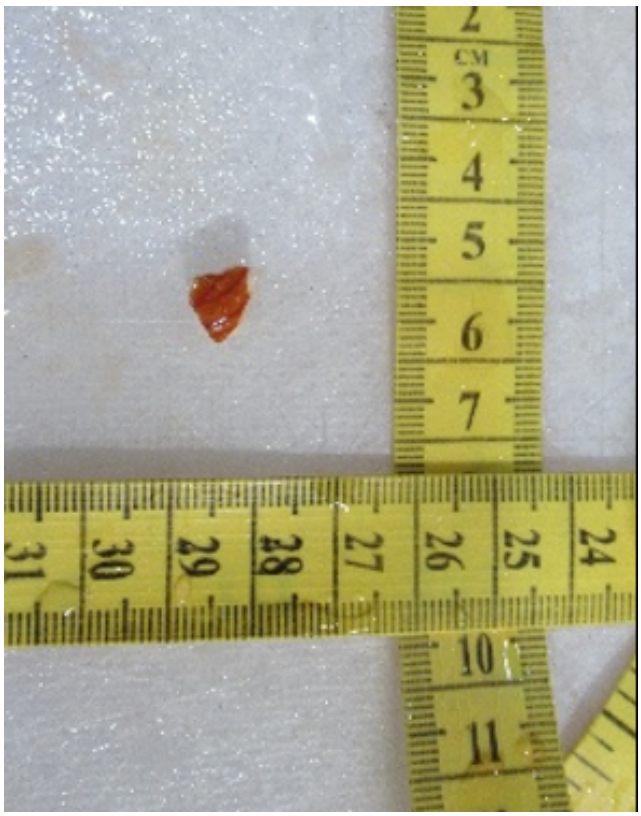

Fig. 7: Foreign body - Broken piece of nut

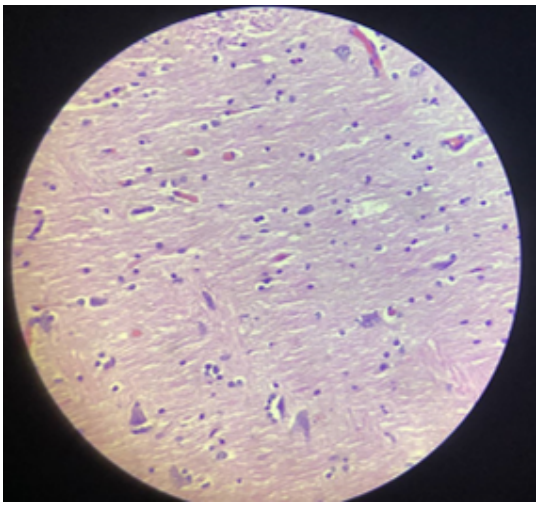

Fig. 8: HPE of brain (HIE)

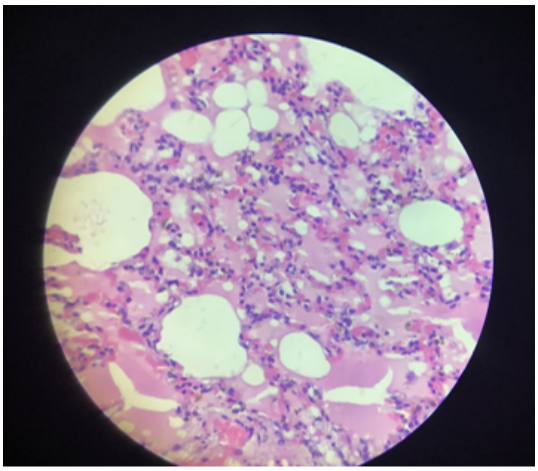

Fig. 9: HPE of lungs (Pulmonary edema with pneumonitis)

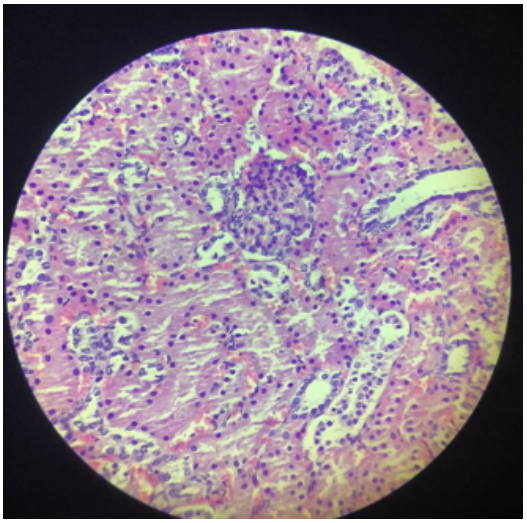

Fig. 10: HPE of kidney (Acute tubular necrosis with congestion)

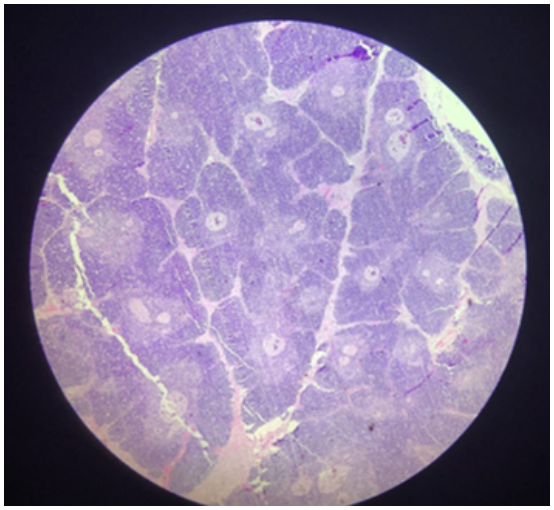

Fig. 11: HPE of thymus (Normal)

No external or internal injuries anywhere on the body.

Heart: Normal in size; cut section: All Chambers contained fluid and clotted blood; Valves: Normal; Both the Coronary Ostia: Patent; Coronaries and Great vessels: Normal.

Lungs: Normal in size; multiple sub-pleural petechial haemorrhages on the surface and interlobar fissure of both the lungs (Figures 3 and 4); cut section: Foreign body – broken piece of nut 1 x 1-0.5 x 0.5 cm in the right bronchus, near the bifurcation with whitish froth in the bronchi and bronchioles of both the lungs (Figures 6 and 7); frothy fluid oozed out from the congested cut surface (Figure 5).

Larynx and Trachea: Intact with whitish froth; Hyoid bone and other laryngeal cartilaginous structures: Intact.

Stomach: Contained 05 ml thick mucus with no definite smell; mucosa: Patchy areas of congestion.

Liver, Spleen, Pancreas and Kidneys: Normal in size; cut section: Congested.

Bladder: Empty and intact.

Scalp, Vault, Duramater and Base of Skull: Intact; Brain:

Oedematous; cut section: Normal.

Ribs, Pelvis and Spinal column: Intact.

Viscera preserved and sent for chemical analysis.

Tissue bits preserved for Histopathological examination.

Opinion as to the cause of Death-Reserved pending the reports of chemical analysis of viscera and Histopathological examination of Tissue bits.

Viscera report came as negative for Alcohol or other Poison

2.1. HPE report

1. Brain and Brainstem: Features of hypoxic ischemic encephalopathy. (Figure 8)
2. Lung: Features of pulmonary edema and foci of pneumonitis. (Figure 9)
3. Liver: Normal histology.
4. Kidney: Features of acute tubular necrosis with congestion. (Figure 10)
5. Thymus: Normal histology. (Figure 11)

After obtaining the reports of chemical analysis of viscera and Histopathological examination of tissue bits, Opinion as to the cause of Death was given as the deceased would appear to have died of Asphyxia due to Aspiration pneumonitis – Natural cause.

3. Discussion

Foreign body aspiration is a common medical emergency especially in children constituting a major cause of mortality. FBA causes deaths not only in paediatric cases but also in adults and the elderly.[2] Foreign body aspirations are predominantly seen in male children and in the age group of 1 to 2 years.[4] The immature protective reflexes, ineffective chewing particularly bigger or hard foodstuff due to lack of molars and tendency to play and move around while eating in young children make them more vulnerable to aspiration of foreign bodies into respiratory passage when compared to adults.[2,4] Right main bronchus was the commonest site of foreign body lodgement as it was more vertical followed by left main bronchus, trachea and sub glottic region in the decreasing order.[5] In our case, the foreign body exactly located in the right main bronchus near the bifurcation as that of other authors.[5,6]

The majority of foreign bodies are organic in nature. Groundnut was most common foreign body. The other are being Chickpeas, Custard apple seed, Betel nut, Tamarind seed, Toy parts, Coconut, Metal ball, Plastic pen cap, etc.[5] In our case, it was a broken piece of almond. Kumbhar, et al.[6] and Srinivasan, et al.[7] reported cough as predominate symptom followed by breathlessness and fever. In some instances, children may also present by vomiting and seizures. But in our case, breathing difficulty is the primary symptom followed by vomiting.

Chest X-ray is the first diagnostic modality in patients with suspected FBA. It may identify either radio - opaque FB or sequels of impacted radiolucent ones, e.g. hyperinflation, pneumonia, or atelectasis. Normal chest radiographs can be found in some cases of FBA. Patients who are suspected with FBA mandatorily undergo bronchoscopy to confirm the diagnosis and removal of FB if present.[8]

Though hypoxia being the primary insult causing death, Pneumonia and respiratory distress were common complications and constitutes the major causes of delayed deaths due to foreign body aspiration. However, a variety of different mechanisms of death due to ingested foreign bodies may occur in children, including haemorrhage, acute cardiac tamponade, arrhythmia, centrally mediated respiratory arrest and sepsis.[9]

4. Conclusion

Awareness has to be created among all parents about the symptoms of foreign body aspiration, to seek early medical attention and ways to avoid it. Parents must be watchful over their children during play to prevent any foreign body aspiration. Parents should have a basic idea of how to eliminate any foreign body of the airway if needed in emergency. Heimlich manoeuvre has to be taught to all the public. Any previously healthy child presents with the complaints of sudden onset of shortness of breath, always foreign body aspiration is the first differential diagnosis. This has to be reinforced to every health care workers working in Emergency department.

5. Source of Funding

None.

6. Conflict of Interest

None.

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Cite this article: Ramalingam S, Veeravijayan A, Narendar R. Even a healthy snacks may snatches a life - A case report. *IP Int J Forensic Med Toxicol Sci* 2022;7(4):117-121.