

Fatal Aspiration of Gastric Contents Following Sudden Collapse at Home: A Case Report

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Abstract: *Aspiration of gastric contents is a known cause of sudden unexpected death and may occur rapidly, often unwitnessed, before medical aid can be administered. This report presents a case of a 36-year-old female who suddenly collapsed at home and was brought dead to the hospital. Autopsy revealed significant aspiration of undigested gastric contents into the trachea, bronchi, and lungs, with associated visceral congestion. The cause of death was opined as aspiration of gastric contents. The case highlights the importance of rapid recognition, airway protection, and the medico-legal relevance of aspiration in sudden unexplained death.*

Keywords: Aspiration death, Gastric content aspiration, Sudden collapse, Choking

1.Introduction

Aspiration of gastric contents constitutes a significant medico-legal consideration and remains an essential differential diagnosis in instances of sudden and unexplained death. This event may arise during episodes of vomiting, altered sensorium, seizure activity, alcohol intoxication, or even in individuals without prior illness following abrupt airway compromise or reflex incoordination. The definitive diagnosis necessitates comprehensive evaluation of the clinical circumstances in conjunction with autopsy findings, notably the demonstration of food material within the upper and lower airways and associated pulmonary congestion. The present case describes an unexpected fatality in a previously healthy adult female attributable to gastric content aspiration, underscoring the indispensability of meticulous post-mortem examination in establishing the precise cause of death.

2.Case Details

A 36-year-old female was found unresponsive at her residence at around 10: 15 PM, on 30/11/2023 and then she was taken to casualty of Sant Parmanand Hospital, Delhi, at about 11: 00 PM, on the same day, where she was declared brought dead. No prior history of trauma or illness was reported. Post-mortem examination was conducted the next day.



Figure 1: The deceased lying on mortuary dissection table

3.Autopsy Findings

On post-mortem examination, the body was of a well-nourished female with no external injuries. Rigor mortis was well-developed, and post-mortem lividity was present over the back, sparing the areas of contact, and was fixed. On internal examination, the trachea and oesophagus contained yellowish semi digested food particles, with congestion of the tracheal mucosa. Both lungs were congested with multiple petechial hemorrhages in the parenchyma and interlobar fissures, and undigested food particles were identified in primary, secondary, and tertiary bronchi. The stomach contained approximately 600 grams of semi digested food with patchy mucosal congestion. Congestion of liver, spleen, and kidneys was observed. The brain appeared congested. The uterus and urinary bladder were empty. No traumatic injuries, fractures, or other significant abnormalities were detected. Viscera were preserved for toxicological analysis to exclude the possibility of poisoning or alcohol

intoxication. The subsequent FSL report was negative for any detectable toxic substances.

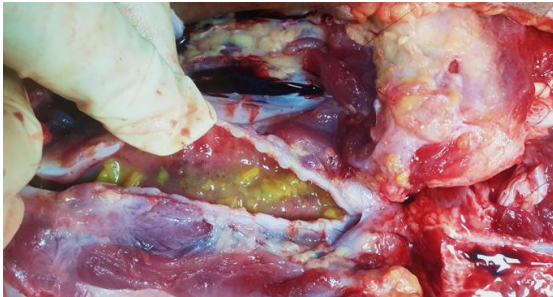


Figure 2: The trachea contained yellowish semi digested food particles, with congestion of the tracheal mucosa



Figure 3: Lungs congested with multiple petechial hemorrhages in the parenchyma and interlobar fissures.

Opinion: Cause of death was due to **aspiration of gastric contents into trachea and both lungs.**

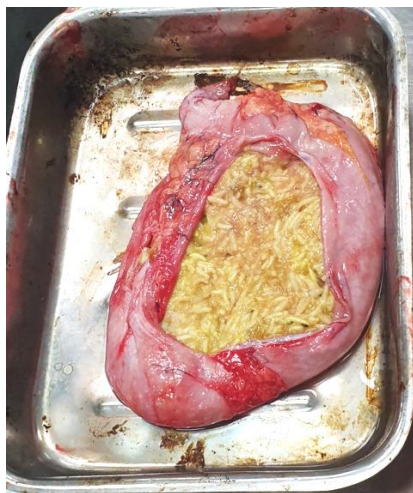


Figure 3: Stomach contained approximately 600 grams of semi digested food with patchy mucosal congestion

4. Discussion

Airway obstruction may arise from anatomical or mechanical causes. Anatomical obstruction results from internal structures such as the tongue or swollen tissues of the mouth and throat, whereas mechanical obstruction occurs due to inhalation or impaction of foreign material within the airway. Choking represents a form of mechanical obstruction, most commonly accidental, and typically follows unintentional ingestion or inhalation of

food or other solid materials, leading to compromised respiration and sudden collapse. Although frequently suspected to involve foul play due to its sudden and dramatic presentation, choking-related deaths are generally accidental.

Risk factors for choking include advanced age, poor dentition, alcohol consumption, chronic illness, sedation, senile changes, and consumption of risky food items. Aspiration of gastric contents may also occur during vomiting, altered consciousness, intoxication, or seizures, but can occasionally be seen in healthy individuals shortly after food intake. In some cases, aspiration can occur as a terminal agonal event, due to body handling, or following resuscitative efforts—termed agonal artefact. Distinguishing true antemortem choking from agonal aspiration requires careful consideration of the extent and distribution of aspirated material. In genuine choking, food particles extend deep into the bronchial tree, whereas in agonal artefacts, material typically remains limited to the laryngeal or upper tracheal level.

In the present case, the presence of undigested food particles extending up to the tertiary bronchi, combined with congested airway mucosa, ruled out postmortem artefact and supported antemortem aspiration. The deceased showed no signs of external or internal trauma, thereby excluding homicidal intervention, and the autopsy confirmed food particles throughout the respiratory passages along with tracheal congestion. No evidence of gastroesophageal reflux disease, hiatal hernia, or other contributing gastrointestinal conditions was identified, although physiological sphincter competency cannot be assessed postmortem.

Choking is capable of causing sudden unexpected death via hypoxia, neurogenic shock, or reflex vagal inhibition, with the latter often contributing significantly to rapid collapse. While aspiration-related fatalities are more common among individuals with neurological or psychiatric conditions, intoxication, or heavy sedation, healthy individuals may also succumb following sudden airway compromise during or shortly after eating. Differentiating choking from sudden cardiac death is essential. Cardiac causes, including coronary artery disease, myocarditis, cardiomyopathies, and other structural or inflammatory heart diseases, typically demonstrate corresponding gross or microscopic findings. In this case, absence of cardiac pathology, coupled with aspiration findings, directed the diagnosis toward fatal aspiration.

Although neurohistopathology or cardiac histopathology could have provided further ancillary support, such specialized investigations were unavailable at the performing centre. Nonetheless, the combination of airway obstruction by food material, pulmonary aspiration, mucosal congestion, and lack of alternative fatal pathology established aspiration of gastric contents as the cause of death. This case underscores the importance of multidisciplinary collaboration, detailed autopsy examination, and recognition of aspiration

patterns to avoid misinterpretation in suspected medico-legal deaths.

5. Conclusions

In medicolegal practice, allegations of foul play must be objectively evaluated, as no complaint can be regarded as true without scientific validation. Thorough post-mortem examination remains the cornerstone for establishing the accurate cause of death, particularly in cases where suspicion of assault is raised. In this case, meticulous autopsy findings conclusively demonstrated fatal aspiration of gastric contents, thereby dispelling unfounded accusations and preventing potential social unrest. Establishing the true etiology of death carries not only forensic significance but may also have tangible legal and financial implications, especially in jurisdictions where insurance policies differentiate accidental inhalation deaths from natural cardiac causes.

Aspiration of gastric contents must be considered in sudden unexplained collapse following food intake. Early recognition, immediate airway clearance, and rapid medical intervention are vital for survival when such events occur in the community. Autopsy continues to serve a vital role in identifying aspiration and differentiating it from natural, agonal, or postmortem artefacts. Raising awareness regarding choking hazards and improving community response can significantly reduce mortality in such preventable events.

Preventive Suggestions

To minimize the risk of aspiration-related fatalities, the following measures are recommended:

- **Eat slowly and chew food thoroughly**, especially in elderly individuals or those with swallowing difficulties.
- **Avoid talking, laughing, or exertion while eating**, as these activities may disrupt coordinated swallowing.
- **Supervise vulnerable individuals** (children, elderly, intoxicated, sedated, neurologically impaired) during meals.
- **Limit alcohol or sedative intake before meals**, as altered reflexes increase aspiration risk.
- **Encourage upright posture while eating** and for at least 30 minutes afterward.
- **Public education on Heimlich maneuver and basic airway-clearing techniques** should be promoted.
- **Healthcare workers and caregivers** should be trained to recognize choking signs and provide prompt intervention.

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