

POSTMORTEM DIAGNOSIS OF DEATH BY FOREIGN BODY ASPIRATION- SUDDEN, SUSPICIOUS AND UNNATURAL CIRCUMSTANCES

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ABSTRACT

BACKGROUND

Among all fatal aetiologies of asphyxia, aspiration is one of the important entities. Sudden aspiration of foreign body into respiratory tract often raises suspicion of crime hidden underneath as circumstance becomes unnatural frequently.

CASE HISTORY

A case where a 35 years old chronic alcoholic male engaged in a private job at a garment shop. On a Sunday evening, one friend of the deceased called him over mobile phone several times and got no response. On reaching the residence, the door of the room was open where he was found to be lying unconscious on bed. Immediately, he was taken to nearest hospital where the attending doctor found evidence of vomitus and declared him brought dead. Autopsy examination confirmed the diagnosis of asphyxia by aspiration of food material from the stomach into the respiratory tract after a vomiting episode.

DISCUSSION

Aspiration-related deaths most commonly occur in the elderly with identifiable risk factors like alcoholism, old age, neurological disorder, upper GI pathology, etc. Frequently, patient's aspiration as the cause of death is unsuspected by clinicians. Post-mortem examination can diagnose the cause of death with certainty.

CONCLUSION

An attempt has been made in this presentation to put forward autopsy findings of such a case to establish the cause of death through photographs and relevant discussions.

KEYWORDS

Asphyxia, Aspiration, Autopsy, Postmortem Diagnosis, Cause of Death.

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BACKGROUND

Asphyxia is a mode of death characterised by respiratory disorder due to decreased oxygen saturation in the blood or tissue level.¹ Among various entities, pulmonary aspiration syndrome is defined as inhalation or entry of oropharyngeal or gastric contents into upper and lower respiratory tract luminal structures. Aspiration can lead to a broad spectrum of pulmonary diseases, but often the suddenness of the incident makes it suspicious as the death becomes sudden.² It depends on the quantity, nature and rapidity of entry and obstruction by the aspirated material. These include aspiration pneumonia, diffuse aspiration bronchiolitis and aspiration pneumonitis. Pulmonary aspiration syndromes frequently present with grave prognosis, as these are often misdiagnosed and therefore management provided is suboptimal.³

In America, the overall incidence of aspiration pneumonia,

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in the hospital population is assessed as approximately 8 in 1000, but as many as 40% of such aspiration cases remain asymptomatic.⁴ Aspiration or swallowing incidents are more likely to occur when treating a population of extremes of age with organic or psychiatric illness, lacking active cooperation or communication skills along with inadequate protective reflexes.⁵

The sudden, suspicious and unnatural nature mandates the conduction of autopsy. Since postmortem distribution and dissociation of gases are distorted, estimation of oxygen saturation in different body tissue has no use in retrospective diagnosis of asphyxia death through autopsy. The single determinant remains is the pathological autopsy findings that helps in diagnosis of such cases.⁶

Case History

This case is about a 35-year-old chronic alcoholic male working in a private firm at Kolkata. On a Sunday evening, a friend of the subject repeatedly tried to reach him over phone. Getting no response, he reached his home, where the door of the room was found open. The subject was lying on the bed unconscious in a pool of vomitus. Immediately, he was taken to nearby hospital where the attending doctor declared him brought dead.

Autopsy Findings

Postmortem examination was performed the next morning. Subject was of average built and moderate nourishment. Rigor mortis present all over the body. Conjunctiva, face and neck region was congested. Evidence of bluish discoloration was present over tip of fingers, nail beds, inner aspect of both lips and tip of nose. Evidence of vomitus was noted as yellowish white food particles over outer aspect of lips, chin and right side of neck. On dissection, oropharyngeal and laryngopharyngeal area was found to be clogged with semisolid yellowish white chewed and partly digested food particles with thick tenacious mucoid substance. The same was found within the lumen of oesophagus and trachea even beyond its bifurcation up to smaller bronchioles. Stomach content found was 580 grams yellowish-white partly digested food particles same as that of found in the upper structures with strong fruity odour like that of alcohol. All the internal organs namely brain, heart, lungs, kidneys, liver and spleen were congested. Multiple petechial haemorrhagic spots were present in lungs, heart, brain and stomach. Opinion given as to the cause of death was due to the effects of asphyxia resulting from aspiration of food particles - antemortem in nature.

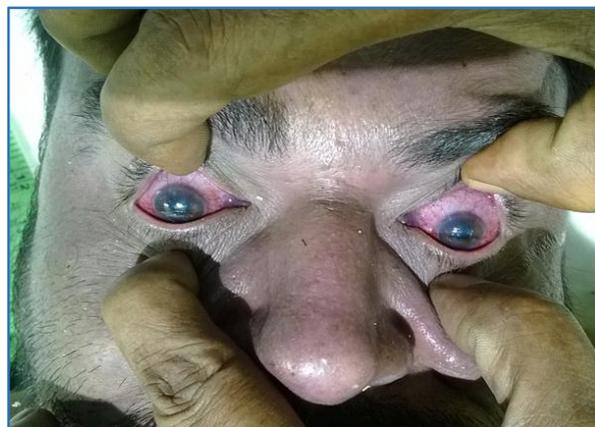


Figure 3. Congested Conjunctiva and Face



Figure 1. The Deceased with Congested Neck, Face with Evidence of Vomitus



Figure 4. Food Particles beyond Bifurcation of Trachea



Figure 2. Bluish Discolouration of Nailbeds

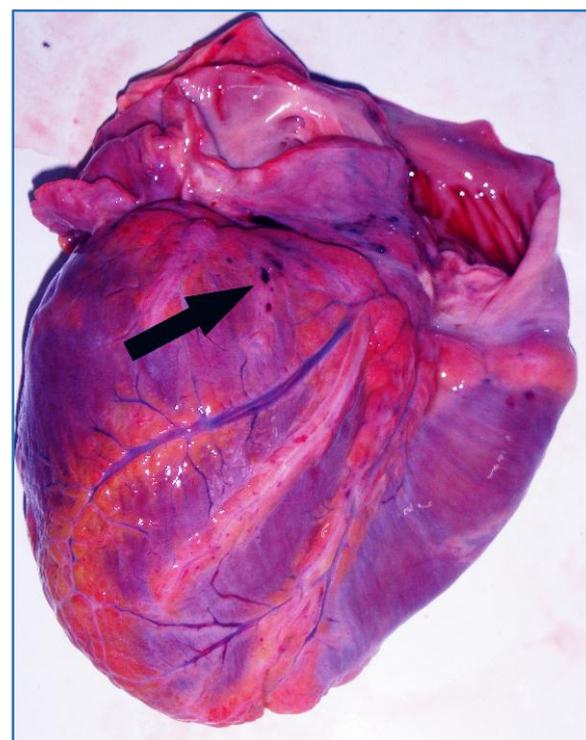


Figure 5. Petechiae on the Heart



Figure 6. Petechiae on Lungs

DISCUSSION

Dealing with patients or deceased of aspiration cases is challenging, because the incidents are unnoticed and sudden, thus often suspected and undiagnosed. Important risk factors identified are extremes of age, male sex, history of alcoholism and drug abuse, history of antipsychotic medication and organic mental disorder.⁷ In addition, disordered anatomical and functional integrity of pharyngeal and oesophageal segments predisposes aspiration.⁴ One of the most important issues of forensic pathology in diagnosing cause of death through autopsy is assessment of antemortem or postmortem events and injuries. An accurate ability to diagnose aspiration is paramount because of different modalities of therapy, if applied early and selectively could change the course of the disease.⁸ In the present case, the circumstance of finding the subject dead raised the suspicion and probable involvement of some criminal activity, but the exact diagnosis of cause of death i.e. accidental aspiration of food particles in presence of risk factors (Alcoholism, male sex) was diagnosed by autopsy examination.

Positioning of the patient is a controversial subject. Some individuals believe the supine position decreases the risk of aspiration or swallowing, while others believe this position promotes these incidents. While position does play a role, it is often mediated by other associated factors. Accidents still happen however and it is essential that clinicians and their staff remain calm to make prompt decisions and take appropriate actions that will not only prevent potentially serious complications, but may ultimately save their patients' lives.⁵ Detailed characterisation of patients dying from aspiration-related pulmonary syndromes has previously not been performed, but may help identify patients at risk and improve diagnosis to avoid preventable deaths.²

CONCLUSION

The uncertainty of determination of risk magnitude of aspiration incidents makes the situation challenging as many times the occurrence is sudden and unreported. Early suspicion, prompt attendance and constant supervision and care of such patients are only the means to save the life. In case of demise of the patients, only a thorough and meticulous autopsy procedure can diagnose such cause of death with certainty.

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