

Death due to Positional Asphyxia – a Case Report

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ABSTRACT

Background: Positional asphyxia is virtually always an accident and is associated with alcohol or drug intoxication. In positional asphyxia individuals do get trapped in restricted spaces.

Case Report: We are presenting a case of 26-years old young adult male, who was intoxicated with alcohol, positioned himself in such a way that it led to his death due to positional asphyxia.

Conclusion: The positional asphyxia has been defined as asphyxia caused due to unusual position of the body which interferes with the breathing and thus pulmonary ventilation. The cases of positional asphyxia are difficult to diagnose because of the absence of any specific external findings.

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► *Implication for health policy/practice/research/medical education:* Positional Asphyxia

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1. Introduction:

The process of normal respiration depends upon three vital components i.e. a patent airway, an intact surface for gas exchange and a normal working ventilator apparatus (1, 2). Respiratory failure occurs when anyone of the above three components are compromised. In positional asphyxia individuals do get trapped in restricted spaces, where, because of the position of their bodies, they cannot move out of that area or position. This results in restriction of their ability to breathe, followed by death (3). Positional asphyxia is virtually always

an accident and is associated with alcohol or drug intoxication. The diagnosis of positional asphyxia is essentially based on 3 criteria (4):

1. The body position must obstruct normal gas exchange,
2. It must be impossible to move to another position, and
3. Other causes of natural or violent death must be excluded.

We are presenting a case of an adult male, who was intoxicated with alcohol, positioned himself in such a way that it led to his death due to positional asphyxia.

2. Case Report:

A 26-years old young adult male was found dead in an abnormal position in a trench located next to the road as shown in Figure number 1 and 2. The criminal background of the deceased together with the abnormal posture of the dead body raised questions in the minds of the investigating officer

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regarding the manner of death which made him to summon the forensic medical examiner to visit and examine the location where dead body was found.

On examination of the dead body at the scene

The dead body was of an adult male, which had not been moved, was found in position shown in Figure number 1 and 2. History from the relatives of the deceased revealed that the deceased was a healthy male without any major illness or disease. All the apparels on the body were intact except an old tear over the left axillary region of the T-shirt. A half empty bottle of whiskey was found in the pocket of under wear. The vicinity of the body had a few dry leaves, twigs, plastic covers and empty plastic bottles. The soil was loose and free of any hard objects. No signs of disturbance were observed in the surrounding area. Face and oral mucosa were found to be congested. Multiple petechial haemorrhages were seen in the conjunctivae. Bluish discoloration was seen on the nail beds of the fingers. Post mortem lividity was present on the upper half of the body. Rigor mortis was present all over the body. After the initial examination, the dead body was shifted for post mortem examination.

Autopsy Findings

On external examination the dead body was found to be moderately built and nourished. The clothes were mud stained. Vomitus and blood stains were absent over the clothes. No external injuries were found on the body.

On internal examination brain was oedematous and multiple petechial haemorrhages were seen in the white matter. Frothy fluid was present in the tracheal lumen, bronchi and bronchioles as shown in Figure number 3. Both lungs were congested and oedematous. The heart was intact and on the histopathology examination the coronaries did not reveal any microscopic abnormalities. All other internal organs were congested. Spine and neck structures did not show any specific findings. Viscera were collected and sent for qualitative and quantitative chemical analysis to rule out poisoning or other substance abuse.

Qualitative analysis done by potassium dichromate test using stomach contents was positive for ethanol and qualitative analysis done by gas chromatography test using



Fig. 1. Picture showing lateral view of the position of deceased during death scene investigation.



Fig. 2. Picture is showing posterior view of the position of deceased during death scene investigation.



Fig. 3. It is showing frothy fluid in tracheal lumen and bronchi during autopsy.

blood showed 220mg% of blood alcohol. Toxicological assays of autopsy specimens for drugs of abuse applying routine methods revealed negative results

3. Discussion:

The positional asphyxia has been defined as asphyxia caused due to unusual position of the body which interferes with the breathing and thus pulmonary ventilation (4). The diagnosis of accidental postural or positional asphyxia depends largely on circumstantial evidence. The case of positional asphyxia can be diagnosed by using the following criteria (5, 6):

- The dead body of a person should be discovered in such a body position which makes the normal breathing impossible and interferes with pulmonary gas exchange.
- There should be evidence that the person has placed himself in that position without the interference of some other person.
- There should be proper reason like intoxication, unconsciousness etc. due to which the person was unable to free himself from that position.
- There should not be any other cause of death which has to be excluded by autopsy.

Death from positional asphyxia was reported in a variety of circumstances such as reverse suspension (7, 8), hyper flexed head or head down position (9, 10), and a jack-knife position (11). In most of the reported cases, the victim was intoxicated or incapacitated to a degree that it was impossible to move out of that abnormal position.

In this case the dead body was found with head down and hyper flexed neck. The head and neck were bearing the entire weight of the body. The post mortem lividity is consistent with the position of head. There were no signs of struggle or disturbances around the dead body and the clothes worn by the deceased were intact. Thus the circumstantial evidence indicates there was no interference or external manipulation. The toxicological analysis data showed that the deceased was intoxicated with ethanol which made him unable to free himself from that abnormal position.

4. Conclusion:

The cases of positional asphyxia are difficult to diagnose because of the absence of any specific external findings. The diagnosis of positional asphyxia depends largely on

circumstantial evidence. The petechial haemorrhages present in the conjunctiva, brain and lungs are indicative of an asphyxia mode of death. The internal findings found in such cases are also nonspecific and can be found in any case of an asphyxia death. The intoxication due to inebriant substance like alcohol is usually sufficient to paralyze the victim, due to which he or she will be unable to free themselves from that position. Acute alcohol intoxication usually acts as a contributing factor, aggravating the effect of the positional asphyxia. In the absence of visit to the scene of occurrence, the autopsy surgeon would have been unaware of the peculiar position of the body and thus would have missed the important diagnostic link, without which the cause and manner of death would have been over looked.

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