

Homicide by Three Different Asphyxial Methods: A Case Report

Arijit Dey¹, Jaynarayan Pandit², Varun Chandran³, Neha Sharma⁴, Hemant K Kanwar⁵

Abstract

Introduction: Methods used for homicide varies enormously such as use of fire arm, use of Sharp weapons and by other means like Strangulation, smothering, poisoning, burning etc. However, employing multiple methods by a single assailant for killing one victim is rarely reported in standard Indian literature. **Case Details:** This case report describes the death of a 31 year old married female, who was killed by employing different methods of mechanical asphyxia. Multiple nail scratch abrasions were present on her cheek and neck. Internal examination showed haemorrhagic infiltration in the muscles of neck and contusion of the inner wall of upper respiratory tract. There was also presence of Sub-dural & Sub-arachnoid haemorrhage and multiple bilateral rib fractures, along with blunt trauma injuries on both her thighs. This case highlights the possibility of involvement of a single person only, in the homicide of a healthy adult female by the application of different asphyxial methods together. **Conclusion:** The autopsy findings helped the autopsy surgeon in reconstructing the sequence of events and the manner in which the act was carried out. All these criminal offences were done by one single assailant who compressed her mouth and nose with the left hand, squeezed her neck with right hand and pressed her thorax with knees. The autopsy findings and probable sequence of events helped the police to establish the crime by suspected assailant. This case emphasizes importance of forensic reconstruction in helping the judiciary.

Keywords: Homicide; Smothering; Manual Strangulation; Traumatic asphyxia; Forensic Reconstruction.

How to cite this article:

Arijit Dey, Jaynarayan Pandit, Varun Chandran *et al.* Homicide by Three Different Asphyxial Methods: A Case Report. Indian J Forensic Med Pathol. 2019;12(3):262-267.

Introduction

Homicide can be an act of premeditation or a random act of violence. The reason can be multiple and the method of execution can also be variable. Globally fire arms are most commonly used, while in Indian scenario, sharp weapons or poisoning or burning or asphyxia methods are commonly employed.

Different asphyxial methods are commonly employed by perpetrators to murder their victims. Asphyxia is a mode of death caused by interference with respiration, in which the cells fail to receive or utilize oxygen (hypoxia) along with failure to eliminate excess of CO₂ (hypercapnia).^{1,2} The classical signs of asphyxia like visceral congestion, petechiae, cyanosis and fluidity of blood, are now considered to be non-specific as they can occur in deaths from other causes also.^{1,3} Manual strangulation, also known as throttling, is a type of asphyxial death where the perpetrator uses his hand to encircle and compress the front and side of the victim's neck. Traumatic asphyxia is a type of mechanical asphyxia, where there is mechanical fixation of the chest wall leading to restricted respiratory movements and prevention of inspiration.³ The chest and upper abdomen are compressed by an unyielding substance or object so that chest expansion and diaphragmatic

Authors Affiliation: ^{1,3,4,5}Senior Resident, ²Junior Resident, Department of Forensic Medicine and Toxicology, All India Institute of Medical Sciences, New Delhi 110029, India.

Corresponding Author: Arijit Dey, Senior Resident, Department of Forensic Medicine and Toxicology, All India Institute of Medical Sciences, New Delhi 110029, India.

E-mail: arijit.forensic@gmail.com

Received on 04.06.2019, **Accepted on** 24.07.2019

lowering are restricted, as can be seen when the person gets buried underneath sand, earth, coal, avalanche and entrapment beneath motor vehicles, heavy machinery.^{1,4} It can also occur when one person kneels or sits with the whole weight of his body upon another for a prolonged period.⁵ It is not very common for a single assailant to employ more than one methods to murder someone. The authors describe one such instance where the perpetrator used three different asphyxia methods to kill the victim.

Case details

History

A 31-year-old female of body length 145 cm and weight 68 kg was received for autopsy at our mortuary. Inquest papers revealed that the body of deceased was recovered from her bed room, which was locked from outside. Her mobile phone was switched off since morning, which led to arousal of suspicion by her relatives, who finally broke open the door and found her lying unconscious and unresponsive on the floor. Her parents said that she was married 2 years ago without the consent of her family and also revealed that her husband was currently unemployed and frequently physically tortured her.

Autopsy Findings

On external examination, the following ante-mortem injuries were detected:

- i. A reddish contusion, measuring 20 cm x 15 cm, situated over parieto-occipital region, across midline, associated with sub-scalp hematoma.
- ii. Multiple reddish contusions, situated over face involving both lower eye lids and nasal ala and on both sides of lower jaw (**Image 1**).



Image 1: Contusions in face



Image 2: Laceration of frenulum

- iii. A lacerated wound, measuring 1 cm x 0.2 cm x 0.5 cm, vertically placed at midline of frenulum of upper lip (**Image 2**). There were several abrasions, mucosal tears and sub mucosal contusions present in inner aspect of upper lip, across midline along with multiple contusions at inferior aspect of tongue.
- iv. A lacerated wound, measuring 1 cm x 0.5 cm x 0.5 cm with underlying and surrounding contusions, over right side of lower lip at muco-cutaneous junction.
- v. There was congestion of the face, neck and chest (**Image 3**).



Image 3: Congestion and bruises of face, neck and chest

- vi. Multiple linear and crescent-shaped abrasions with concavity towards the left side were present in the mid-frontal region of the neck (**Images 4 & 5**). Irregular shaped contusions of varying sizes were also present over the front and both sides of the neck.
- vii. Multiple brownish abrasions, measuring 1 cm x 1 cm to 4 cm x 1.5 cm over an area of 9 cm x 4 cm, situated over lateral aspect of right breast.

- viii. A reddish contusion, measuring 25 cm x 18 cm, muscle deep, situated at the front aspect of lower neck and front of chest, lower margin was at xiphisternum.



Image 4: Crescentic abrasions on neck



Image 5: Abrasions on neck and right jaw

- ix. A reddish contusion, measuring 3 cm x 3 cm, muscle deep, situated on front aspect of abdominal wall.

- x. A reddish contusion, measuring 18 cm x 13 cm, muscle deep, situated on front and inner aspect of right thigh, 13 cm above knee joint.
- xi. A reddish contusion, measuring 21 cm x 11 cm, muscle deep, situated on front and outer aspect of left thigh, 13 cm above knee joint (**Image 6**).



Image 6: Contusion over left thigh



Image 7: Contused muscles of neck and chest

On dissection, the skull bones were intact. Sub-dural haemorrhage with maximum thickness of 2 mm was present over bilateral parieto-temporal region and base of brain. Thin layer of global Sub-arachnoid haemorrhage was present. There

was contusion of the neck muscles; contusion of the intercostal muscles of the chest; along with fractures of bilateral 2nd – 7th ribs at their antero-lateral aspect (**Image 7**). Two transverse sternal fractures were present at the junction of body and manubrium and at the body itself (**Image 8**). Pneumothorax and blood of around 500 ml was present on the left side. There was laceration and collapse of a portion of the anterior surface of both lungs corresponding to the rib fractures. Contusion was also seen on the surface of the epiglottis and the inner wall of larynx, trachea and oesophagus. Multiple intestinal and gastric contusions and two mesenteric tears were present and abdominal cavity contained 250 ml of fluid blood (**Image 9**). The cause of death was opined as “Combined effect of smothering, strangulation and multiple blunt force impact injuries sustained to chest, head and abdomen.”



Image 8: Fractures of Sternum



Image 9: Blood in thoraco-abdominal cavities

Discussion

Different methods of asphyxia are commonly employed to commit homicide. In manual

strangulation, the face usually appears congested and cyanotic, with petechiae of bulbar conjunctival, the skin of the upper and lower eyelids, the bridge of the nose, the brows and the cheeks.¹ Available literature suggests bruising on the neck to occur because of the assailant's attack, whereas abrasions may be from either the victim or the assailant.¹⁻⁶ Scratches produced on the victim may be linear or crescentic, depending on whether a static or a moving force was applied on the neck of the victim by the assailant.³ The present case showed a combination of these mechanical injuries, and the linear lines were produced because of skidding of nails on the skin, which suggests a fight between the assailant and the victim. Also, haemorrhages were present in the muscles of the neck; epiglottis and the inner wall of larynx, trachea and oesophagus. Asphyxia by smothering is caused by blocking air entry into the lungs by simultaneous closure of the nose and mouth and is usually homicidal, rarely suicidal and very rarely accidental.⁷⁻¹⁰ The typical features include bruises or abrasions on the cheeks, around the mouth, lips or lesions within the lips or mouth.⁷⁻¹⁰ In this case there were multiple abrasions on the face and contusion on the lip, along with lacerated injuries inside the mouth and lower lips, thus confirming smothering. Smothering is a common method of homicide, most often encountered when the physical size and strength of the assailant exceeds that of the victim.¹¹ The usual victims are females, children, aged people and those cases where the victim may be incapacitated due to drugs or caught unaware because of the suddenness of the act. Traumatic asphyxia restricts the venous return from the head due to prevention of respiratory movements by compression of the chest by heavy objects.^{11,12} The characteristic features of traumatic asphyxia include congestion of head and neck along with petechial haemorrhages of the face, neck, upper chest and conjunctivae.¹² It has been suggested that concomitant injuries indicate the severity of compression in traumatic asphyxia and the presence of such fatal injuries do not influence the pathological findings of asphyxia.¹³⁻¹⁶ In this case, there were multiple fracture of ribs and corresponding injuries to the lungs, which indicate application of heavy pressure by the assailant sitting on the victim's chest and applying blunt force to chest and abdomen. This did not obscure the congestion of the face, neck, chest and petechiae of conjunctiva. Traumatic asphyxia is mostly accidental and rarely homicidal. Homicidal traumatic asphyxia by kneeling or sitting on the victim is very rare and such instances have been reported by Lupascu *et al.*¹⁷ and by Das *et al.*¹⁸

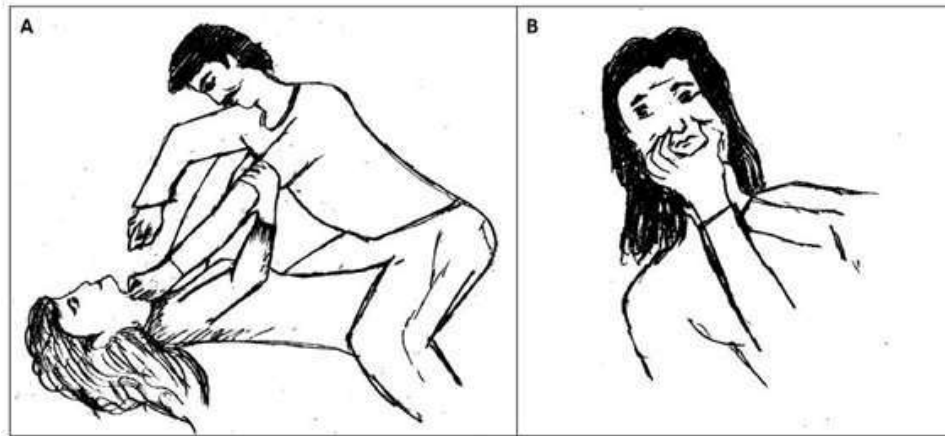


Image 10: Illustration showing relative position of assailant and victim in (A) and position of assailant's both hands in (B)

Initially, there were some speculations regarding multiple assailants being involved, but this multitude of wounds is possible by one assailant only. After assessing the circumstantial evidences and post-mortem findings we reconstructed the scene of crime and opined that probably the homicide was done by a single assailant, (**Image 10**) who compressed her mouth and nose with one hand, squeezed her neck with another, sat on her chest and pressed her trunk with his knees. In between his attempts, the victim also may have struggled, so he might have hold her hair and thrashed her head repeatedly on the floor, which lead to the head injury and the intracranial haemorrhage. As per our analysis, when the victim tried to shout, the assailant used his left hand to smother her resulting in an abrasion on her cheek. In an effort to breathe, the victim may have tried to remove both the hands of the assailant, but managed to lift the left hand which was covering his mouth and nose. The assailant might have again put his hand forcefully over the victim's mouth that produced the abrasion on nose, the left upper eyelid, and possibly the lip contusion. The fracture of the ribs and contusion of the intercostal muscles indicate that the assailant applied considerable amount of force to compress the victim's chest and restrict her movement.

Later, during police investigation, the victim's husband confessed of committing the crime himself single handedly on the sleeping victim. The victim was totally caught unaware as she was sleeping when attacked, and this made the assailant's job easy. He had sat on the chest of the victim, used his right hand to throttle the neck and the left hand to cover the mouth to prevent her from shouting. He also stated that he did not use any ligature material for strangulating her. He also narrated that after their marriage, recently he discovered that the lady was

previously married and had divorced her previous husband. Also, she was Retrovirus Positive, and he had contracted the disease unknowingly from her. Both these facts were concealed from him and after accidentally discovering these; he was enraged and frustrated with his own situation and thus murdered his wife single-handedly.

Conclusion

The authors narrated a case of a homicidal death by a combination of three different asphyxial methods. Manual strangulation was confirmed by the presence of nail scratch abrasions and contusions on the neck and haemorrhage of the soft tissues of the neck. Compression of the thoracic region was proved by the rib fractures, haemorrhages of the intercostal muscles, corresponding injuries to the lungs and pneumo-hemothorax. Smothering was indicated by the presence of contusions on the nose, jaw, around the mouth, lips and lacerations underneath the lips and mouth. The cause of death was opined as asphyxia secondary to mechanical obstruction of pulmonary oxygen flow due to smothering and manual strangulation, along with inspiratory insufficiency produced by thoracic compression. Each of these three methods acted simultaneously and in varying combinations leading to the fatal outcome. This case emphasizes the role of a forensic pathologist in reconstructing the crime scene from autopsy findings and thereby helping the judicial authorities.

Funding: None

Conflict of Interest: None declared

References

1. DiMaio VJ, Dimaio D. Forensic Pathology. Asphyxia. (2nd edn). Boca Raton: CRC Press 2001. pp.232-78.
2. Saukko P, Knight B. Forensic pathology. Suffocation and asphyxia. (4th edn). Boca Raton: CRC Press, 2016. pp.352-67.
3. Saukko P, Knight B. Forensic pathology. Fatal pressure on the Neck. (4th edn). Boca Raton: CRC Press, 2016. pp.369-97.
4. Matiharan K, Patnaik AK. Modi's Medical Jurisprudence and Toxicology. Asphyxia. (23rd edn). LexisNexis New Delhi, India, 2005. pp.567-614.
5. Mahanta P. Modern Textbook of Forensic medicine & Toxicology. Asphyxia. Jaypee Brothers, New Delhi, India. 2014.
6. Aggarwal A. Textbook of Forensic Medicine and Toxicology. Mechanical Asphyxia. Avichal Publishing Company, New Delhi, India 2014. pp.366-404.
7. Rao NG. Textbook of Forensic Medicine & Toxicology. Violent Asphyxial deaths. Jaypee Brothers, New Delhi, India, 2010. pp.194-220.
8. Pillay VV. Textbook of Forensic Medicine and toxicology. Mechanical Asphyxia. 17th ed. Hyderabad: Paras Medical Publisher; 2016: 297-327.
9. Nandy A. Principle of Forensic Medicine including Toxicology. Asphyxial Deaths. 3rd ed. India: Central Book Agency; 2010. pp.517-64.
10. C.K. Parikh. Parikh's textbook of Medical Jurisprudence Forensic Medicine & Toxicology. Asphyxia. CBS Publisher's & distributors; 6th edition; 1999. pp.3.40-3.53.
11. Vij K. Textbook of Forensic Medicine and Toxicology: Principles and practice. (6th edn). Asphyxial deaths. Elsevier India Pvt Ltd, New Delhi, India, 2014. pp.110-45.
12. Reddy KSN. The Essentials of Forensic Medicine and Toxicology. 34th ed. Hyderabad: K Suguna Devi; 2017. pp.315-50.
13. Eren B, Turkmen N, Fedakar R. An unusual case of thorax compression. J Ayub Med Coll Abbottabad. 2008;20:134-5.
14. Miyaishi S, Yoshitome K, Yamamoto Y, Naka T, Ishizu H. Negligent homicide by traumatic asphyxia. Int J Leg Med. 2004;118:106-10.
15. Byard RW, Wick R, Simpson E, Gilbert JD. The pathological features and circumstances of death of lethal crush/traumatic asphyxia in adults—a 25-year study. Forensic Sci Int .2006;159(2-3):200-5.
16. Blanco Pampin J, Garcia Varela L. Suicidal choking by a bizarre combination of inhalation to the bronchi and external neck compression. J Leg Med. 2001;3:119-22.
17. Lupascu C, Lupascu C, Beldiman D. Mechanical asphyxia by three different mechanisms. Legal Med. 2003;5:110-1.
18. Das S, Jena MK. Homicide by a combination of three different asphyxial methods. Egyptian Journal of Forensic Sciences .2016;6:298-302.

