

Uncommon Paediatric Accidental Ligature Strangulation by Dupatta in a Two-Wheeler Passenger: A Fatal Case Report

Dr. Rajat Mandal¹, Dr. Santhosh Kumar R², Dr. Guggilam Nagarjuna³

¹Senior Resident, Department of Forensic Medicine, Maulana Azad Medical College, New Delhi, India
Corresponding Author Email: [mandal.rajat2\[at\]gmail.com](mailto:mandal.rajat2[at]gmail.com)

²Post Graduate Student, Department of Forensic Medicine, Maulana Azad Medical College, New Delhi, India
Email: [santhoshsparrow814\[at\]gmail.com](mailto:santhoshsparrow814[at]gmail.com)

³Post Graduate Student, Department of Forensic Medicine, Maulana Azad Medical College, New Delhi, India
Email: [guggilamnag1996\[at\]gmail.com](mailto:guggilamnag1996[at]gmail.com)

Abstract: *Accidental ligature strangulation is a rare but serious cause of fatal mechanical asphyxia, particularly in developing nations where loose traditional garments such as dupatta or scarf are commonly worn. We report a case of a 11 year old girl who sustained accidental ligature strangulation while riding as a pillion on a motorcycle when her dupatta became entangled, leading to constriction around the neck. She was admitted to a Lok Nayak Hospital, New Delhi, managed for hypoxic-ischemic complications, and succumbed after three days of treatment. Autopsy revealed an oblique, incomplete ligature mark over the neck with classic signs of hypoxia including cerebral edema and petechial haemorrhages. Death was attributed to hypoxic cerebral injury secondary to accidental ligature strangulation. This case highlights the need for public awareness regarding risks associated with loose garments during motorcycle travel, especially among children and adolescents.*

Keywords: Accidental strangulation, Dupatta entrapment, Ligature mark, Hypoxic cerebral injury

1. Introduction

Accidental ligature strangulation due to entanglement of clothing in moving vehicles is uncommon in developed countries but documented in South Asian countries like India, Pakistan, Bangladesh, where flowing garments such as dupattas, scarves, and sarees are routinely worn. Two-wheeler pillion riders, particularly females and children, are vulnerable to such incidents. Such strangulation results in asphyxia secondary to neck compression, leading to hypoxic cerebral damage. Detailed documentation and reporting aid in prevention and medico-legal understanding. This report describes a fatal accidental strangulation in a 11 year old girl resulting from dupatta entrapment during motorcycle travel.

2. Case Details

A 11 year old female allegedly sustained accidental strangulation on 10/10/2023 around 12:12 PM when her dupatta became entangled while she was seated on a motorcycle. She was taken to Lok Nayak Hospital, New Delhi, where she was treated and subsequently expired on 13/10/2023 at 10:00 PM during the course of treatment. Body was sent to Maulana Azad Medical College Mortuary for medico legal examination.



Figure 1: The deceased lying on mortuary dissection table.

Autopsy Findings

On post-mortem examination, the body was that of a nourished adolescent female. An oblique, blackish, dry ligature mark was seen above the level of the thyroid cartilage, incompletely encircling the neck and absent posteriorly, measuring approximately 5.0 cm below the chin anteriorly and extending obliquely upward and backward on both sides of the neck. On internal examination, layered neck dissection showed pale subcutaneous tissues with no fracture of the hyoid bone or thyroid cartilage. The brain was congested and edematous with flattening of gyri, obliteration of sulci, patchy subarachnoid hemorrhage over bilateral temporal lobes, and petechial hemorrhages in the right temporal lobe. Both lungs were congested with multiple petechial hemorrhages in the parenchyma and interlobar fissures, while similar petechial hemorrhages were noted on the posterior surface of the heart. Other visceral organs, including the liver, spleen, and kidneys, were congested. Clotted blood was present in the uterine cavity, and the urinary bladder was empty.



Figure 2: An oblique, blackish, dry ligature mark present above the level of the thyroid cartilage



Figure 3: Petechial hemorrhages in the right temporal lobe.



Figure 4: Lungs congested with multiple petechial hemorrhages in the parenchyma and interlobar fissures.

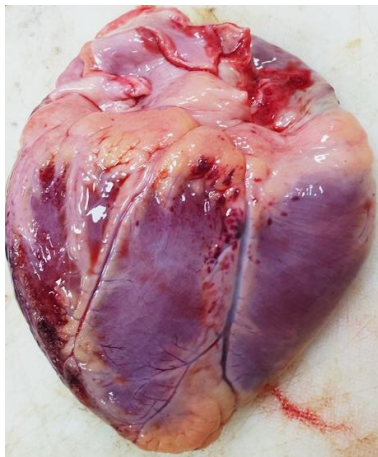


Figure 5: Petechial hemorrhages on the posterior surface of the heart



Figure 6: Clotted blood was present in the uterine cavity. Opinion: Cause of death was due to hypoxic cerebral injury secondary to antemortem accidental ligature strangulation.

3. Discussion

Accidental strangulation from clothing entanglement during motorcycle riding is a preventable cause of mechanical asphyxia. Traditional garments like dupatta can act as a ligature when caught in moving vehicle components. Clinical presentation typically includes airway obstruction, hypoxia, and neurological compromise. Autopsy findings in such cases classically include oblique, incomplete ligature marks, petechial haemorrhages, and cerebral edema — all of which were observed in this case.

Children and adolescents are especially vulnerable due to unawareness of clothing safety around moving vehicles. Despite medical intervention, prolonged hypoxia often leads to irreversible brain injury and death, as seen here. This case underlines the importance of preventive strategies, family education, and legislative safety measures for two-wheeler passengers.

4. Conclusions

We cannot eliminate the use of vehicles, nor can we restrict people from wearing traditional attire such as sarees or chunnis. However, we can promote safety awareness and educate the public on precautions to take when wearing such garments while riding two-wheelers. Likewise, vehicle designs that pose avoidable risks can be improved. With simple dos and don'ts, many of these tragic accidents and deaths could potentially be prevented. Raising awareness about the hazards associated with loose clothing is essential to avoid similar incidents. Early recognition of risks and preventive measures are especially important among younger individuals.

References

- [1] Knight B. (1996) Forensic Pathology (2nd ed) London, Arnold, 384–5.
- [2] Aggrawal N.K. and Aggrawal B.B. (1998) Accidental strangulation in a cycle rickshaw. Med. Sci. Law 38 (3) 263–5.
- [3] Rao NG, Nagesh KR, Menezes RG, Kotian MS. Strangulation by sari (chunni) – unusual accidental

deaths in women. Med Sci Law. 2004 Oct;44(4):359-61.

- [4] Gupta BD, Jani CB, Datta RG. Accidental strangulation: a case report. Med Sci Law. 2004 Oct;44(4):359-62.
- [5] Polson C.J., Gee D.J. and Knight B. (1985) The Essentials of Forensic Medicine (4th ed.) Oxford, Pergamon Press, 400–1.