

## ATTEMPT TO OUTCOME: A CASE OF ACCIDENTAL DEATH BY HANGING

Ankita Kakkar <sup>1</sup>, Dara Sandeep <sup>2</sup>, Anshul Saxena <sup>3</sup>,  
Sahil Sharma <sup>4\*</sup>, Abhijeet Sehrawat <sup>5</sup>,  
Nirupma Gupta <sup>6</sup> and Parul Khare <sup>7</sup>

<sup>1,6</sup> Professor, Department of Forensic Medicine, SMSR,  
Gautam Budh Nagar, Uttar Pradesh.

<sup>2</sup> Assistant Professor, Department of Forensic Medicine,  
Government Medical College, Paderu, Andhra Pradesh.

<sup>3</sup> Associate Professor, Department of Forensic Medicine, SMSR,  
Gautam Budh Nagar, Uttar Pradesh.

<sup>4,5</sup> Assistant Professor, Department of Forensic Medicine, SMSR,  
Gautam Budh Nagar, Uttar Pradesh.

<sup>7</sup> Assistant Professor, Department of Forensic Odontology, SDS,  
Gautam Budh Nagar, Uttar Pradesh.

\*Corresponding Author E-mail: [sahil.sharma1@sharda.ac.in](mailto:sahil.sharma1@sharda.ac.in)

DOI: [10.5281/zenodo.13969183](https://doi.org/10.5281/zenodo.13969183)

### Abstract

One of the most prevalent means of suicide all over the world is hanging. Hanging which is usually done with a suicidal intent is a form of asphyxia which is caused by the suspension of the body by a ligature encircling the neck, where the constricting force is the weight of the body. In contrast, death due to strangulation are commonly of homicidal nature. However rarely the postmortem findings may be comparably indiscreet, such that it is difficult to clearly opine and isolate either of them. In the present article we report an unusual case of death due to hanging in which postmortem findings were conforming death due to homicide by strangulation, however a meticulous crime scene investigation confirmed it to be a typical case of suicide by hanging. The authors review the essentials to discriminate the autopsy findings in asphyxial death in hanging and strangulation and the inexorable importance of a meticulous crime scene investigation.

**Keywords:** Hanging, Meticulous, Suicide.

### INTRODUCTION

Hanging is a form of asphyxia which is caused by the suspension of the body by a ligature encircling the neck, where the constricting force is being the weight of the body.<sup>1</sup> Among the various modes of suicide, hanging is one of the most chosen methods. Hypoxia is a general term referring to the inadequate supply of oxygen to the tissue or an impairment of the cellular utilization of oxygen for any reason.<sup>2</sup>

In most of the cases of hanging usual fatal period is 3 to 5 min for death. Various instantaneous causes of death are asphyxia, venous congestion, the combined effect of asphyxia and venous congestion, cerebral anoxia, reflex vagal inhibition and fracture or dislocation of cervical vertebrae.<sup>3</sup>

In the present case, dead body of a thirty-four year old male with alleged history of death by hanging was sent for postmortem examination. It was an unusual case of death due to hanging in which the autopsy findings were adverting to death by strangulation however a meticulous crime scene investigation confirmed it to be a case of death due to antemortem hanging.

## Case Report

A dead body of a 34 year old male labour was brought for postmortem examination. As per the inquest report he was found partially hanging by a dupatta to a ceiling fan in a bolted room in his home.

### **External autopsy findings:**

Both the eyes and mouth were closed. White, copious, fine and persistent froth was coming out of the nostrils. Marks of dribbling of saliva were absent. No other external injuries were seen

### **Ligature mark:**

There was no ligature material and an incomplete oblique ligature mark was present. The ligature mark was reddish brown, parchmented, below the thyroid cartilage and was extending upwards on both sides of the neck and was deficient on the posterior side for about 13 cm. The length of the ligature mark was 29 cm and the width was ranging from 2 to 6 cm. The ligature mark was situated 4cm below the chin, on the left side it was ending at 4cm below the left mastoid process, on the rightside it ended at 5cm below the right angle of mandible. On the right side of the ligature marks there were 4 vertical nail scratch marks 2cm apart and were of length 4 to 6cm and impressions of fingers vertically over the ligature marks. On dissection the underlying soft tissues were pale with marginal ecchymosis. The circumference of the neck was 25 cm. On deep dissection, thyroid was pale and showed marginal ecchymosis. Hyoid bone was found intact. Brain was congested and oedematous. Both lungs were congested and oedematous. All other organs were found congested. Viscera sent for toxicological analysis was found positive for alcohol intake.

On a comprehensive investigation of crime scene it was known that the deceased who was a labour by occupation was under depression as he was under a burden of heavy loan against him and had been making multiple attempts to commit suicide in the past but they were unsuccessful as he changed his mind at the last opportunity. At this time of incidence, he was under the influence of alcohol and again contemplating suicide while his wife and daughter were away in a neighbour's house. There were no signs of defence or any other injuries on the body or any other signs of struggle at the scene of crime. The cause of death was opined as asphyxia due to antemortem hanging.



**A brownish ligature mark around the neck with crescentic nail marks [Fig:1]**



**Position in which dead body was recovered [Fig.2]**

## DISCUSSION

The term “near hanging” refers to a patient who survives a hanging injury long enough to reach the hospital. Most of the patients develops respiratory and neurological complication

immediately after the rescue. Pulmonary edema is the commonest complication which usually occurs immediately following their rescue from acute airway obstruction or suicidal hanging.<sup>4</sup>

Hypoxic ischemic encephalopathy is an important complication in a patient who survives an attempt of hanging. Hypoxic brain injury or global cerebral ischemia occurs due to reduced cerebral blood flow over the entire brain. At the time of hanging, oxygen supply is decreased to brain because of pressure on carotid, severe enough to damage brain cells. This hypoxia ultimately leads to encephalopathy. Necrosis of brain cells leads to inflammatory reactions, which ultimately causes swelling and edema. Brain edema together with postural lung congestion and infection leads to respiratory failure.<sup>5</sup>

Usually, in cases of suicidal hanging, internal neck injuries such as contusions of the muscles a very common finding in manual strangulation are not seen. But if a considerable constricting force is applied, such injuries may be seen in cases of suicidal hanging as well. This can happen in cases of hanging due to a greater body weight, a tight noose with a fixed knot, a very hard rope used as ligature material, the multiple encircling of ligature, a fall from a high-rise, jerks due to convulsions during the physiological process of asphyxiation, a highly inebriated state (due to drugs or alcohol) and due to being suspended for a long period where the entire body weight acts as a constricting force. These situations may lead to massive bleeding and damage to the internal structures of the neck, particularly the oropharynx or even the fracture of the hyoid bone mimicking ligature strangulation.<sup>6</sup>

Caution must be exercised when diagnosing strangulation in bodies with anterior neck lividity and differentiating between hanging and ligature strangulation. Before giving a final opinion about a suicidal or homicidal death, a careful examination of the ligature

mark, the history of the case and photographs of the scene are required. The following is a case study of a suicidal hanging that mimicked homicidal strangulation.<sup>6</sup>

## CONCLUSION

Asphyxial death due to hanging are mostly of suicidal in nature with remarkable telltale signs on autopsy. Occasionally isolated case like the present case may build paradox in respect of death being caused by homicidal strangulation. Crime scene investigation and circumstantial evidence play a significant role in resolving the complexities.

## Conflict of interest

The authors declare no potential conflicts of interest with respect to research, authorship and/or publication of this article.

## Funding

The authors received no financial support for the research and authorship of this article

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