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A HANGING CASE OR A HIT AND RUN ACCIDENT

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CASE REPORT

A Hanging Case or a Hit and Run Accident

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Abstract

When the victim's body was observed to be partially or totally hanged, a death by hanging occurred. The existence of both general and local indicators of hanging together with circumstantial evidence is typically used to diagnose the cause. After ruling out the presence of other important suspicious signs, such as those suggesting struggle, and when the victim is toxicologically free, the manner of death tends to be suicidal. Circumstances also should exclude homicide and accidental death. We present a man in the third decade of life, found on a road with head trauma but with signs of hanging including *Amussat's sign* of carotid transverse intimal tears. Police investigation proved that the case was a hanging case as the victim hanged himself in an illegal alcohol factory. To prevent incorrect interpretations of the cause and manner of death in hanging instances, a thorough analysis of all the available information, including police investigation, postmortem findings, and toxicology, is required.

Keywords: Hanging, Amussat's sign, Ligature strangulation

1. Introduction

The postmortem examination allows for the observation of numerous postmortem findings, which are associated with hanging, a prevalent form of suicide. To prevent incorrect diagnosis, interpretation of the relevant data, involving circumstances and manner of death, the criminal investigation, autopsy findings, and toxicology, is necessary.¹

Amussat's sign, which is often described in situations of hanging, is a transverse injury of the carotid arteries intimal layer. Sex, weight, the extent of the body suspension, and the site of the ligature marks on the neck had no impact on the incidence of Amussat's sign. The most likely explanation of Amussat's sign is a mix of direct rope pressure on the carotid artery and indirect rope lengthening brought on by gravity tension from the body's weight.²

Crudele et al.,³ reported that, since the middle of the 19th century, there have been a few studies done to determine the actual frequency, types, and rates of happening in cases of completed hanging and

near-hanging. The Amussat sign was found to be the most distinct discovery in this investigation.

2. Case report

Before morning, a dead body of a young man in his third decade was discovered lying on his back in the flow of a busy road. Police called the forensic medical examiner, who arrived on the site on time. The victim was discovered flaccid and on his back, with hypostasis visible on the lower portions of both his upper and lower limbs. He had a light complexion and no petechial bleeding. His red T-shirt was loosely wrapped around his neck, and he was wearing brown slacks with his upper body exposed and his feet exposed.

On the left side of his head, a little pool of blood was seen to be growing from his left ear. Under the shirt, a leathery upper red neck mark that was incompletely circular in shape and with focus areas of red-brown abrasions that resembled rope knots (Fig. 2) rather than the T-shirt that had been put around his neck was visible (Fig. 1). A protruding tongue and fixed blue hypostasis involving the

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Fig. 1. General view of the death scene showing the body in its original position lying in the middle of a road with his neck tied with T-shirt with rope mark around neck underneath. A pool of blood could be seen on the left side of head with the blood coming from left ear.



Fig. 2. Oblique incomplete circular upper leathery brown neck mark taking the pattern of a rope and not the T-shirt seen tied around his neck was obviously seen.

hands, forearms and legs were found. Postmortem blackish abrasions were seen on the outer sides of the left foot and back of hands.

2.1. At autopsy

There were few abrasions on the scalp underneath which, multiple hemorrhagic patches on the undersurface of the scalp, particularly on the parietal areas were seen. The amount of bleeding from the head injury was notably not much. Vessels of the brain were markedly congested, and the brain was edematous. Left parietal fissure fracture extending to base of skull was found Fig. 3. Dissection of carotid arteries showed bilateral multiple transverse intimal tears (Amussat's sign) Fig. 4. The lungs were edematous and congested. The heart was normal from all aspects, including its coronaries, valves, and great blood vessels. The abdominal viscera were generally congested. The stomach was empty. The liver was enlarged and showed fatty change. A sample of blood was sent to the toxicology laboratory for analysis and found to contain ethanol in a concentration of 230 mg/100 ml.

3. Discussion

Hanging is a type of ligature strangulation occurs when the victim's body weight acts as a gravitational drag, applying pressure to the neck.²

The most common method of suicide, according to Ahmad et al.,⁴ is hanging. Hanging is a type of severe asphyxial death in which the body is held up by a rope that tightens around the neck causing blocking of airflow to the lungs due to the weight of the body.

Ligature marks are essential in obtaining the important information that will guide an investigation. Combining external, internal, and microscopic information makes it simple to reach a conclusion in these circumstances and distinguishes between ante mortem and postmortem cases of hanging.⁵

Asirdizer and Kartal,⁶ noted that in cases of death from hanging, there are six distinct types of vascular damage have been identified to date, the most important one of them is Amussat's sign. The Amussat sign was found to be the most clearly defined finding, and it was determined that the other findings were not sufficiently recognized.

Nattapong et al.,⁷ found that in 45% of patients, tongue protrusion was discovered. In 23.8% of hanging fatalities, the face was congested, and in 28.7% of cases, the face or conjunctiva had petechial hemorrhages. 8.6% of the neck injuries were neck muscle hemorrhages, 2% were thyroid hemorrhages, 0.8% were carotid artery intimal tears (Amussat's sign), one was a fractured hyoid/thyroid bone, and one was a vertebral fracture. Internal organ congestion occurred in 57.4% of cases, with gender differences in these percentages. Twenty-five percent of patients had petechial hemorrhage in

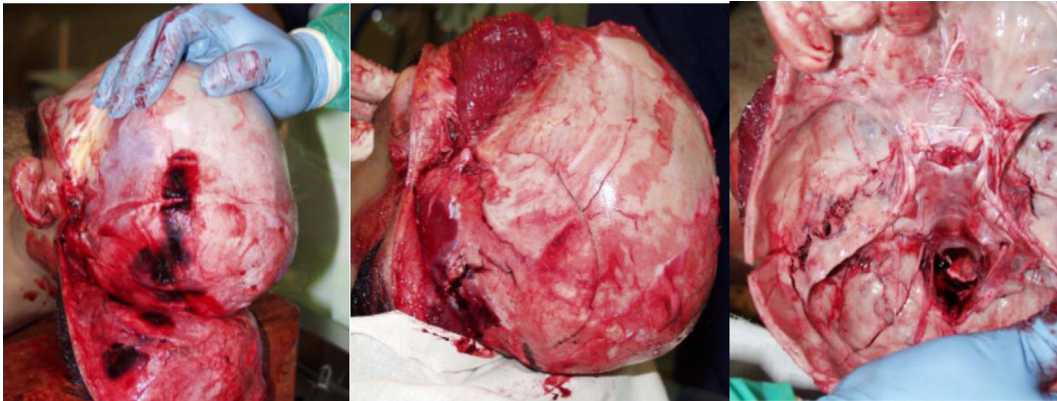


Fig. 3. Multiple hemorrhagic patches on the undersurface of the scalp, particularly on the parietal areas. Left parietal fissure fracture was seen extending to base of skull.



Fig. 4. Bilateral multiple transverse intimal tears (Amussat's sign).

their internal organs, such as their pleura, epicardium, pericardium, liver, and spleen.

One such fundamental diagnostic indicator is damage to the cervical vessels due to hanging. The most well-known indicator is Amussat's sign, which is a transverse tear in the carotid arteries intima. These tears may be longitudinally organized, and it is possible to observe multiple tears and subintimal blood clots around them.²

The majority of hanging victims have pale faces rather than congested ones. During an autopsy on a hanging victim, Amussat's was the first to notice damage to the carotid arteries intima and media. Petechial hemorrhages are more of an anomaly than a common occurrence, with most series reporting them in about 25% of cases. Such petechiae appear to be more common in incomplete

suspension, although they can still be seen regularly when there isn't much congestion. A pale face is much less common than congestion itself.⁸

Ahmad et al.,⁴ reported that, injury to neck structures in their study which included 574 cases, showed horizontal rupture of carotid artery intima with bleeding in 4.70% of cases which they attributed to expanding and compression of blood vessels in extended suspension.

While Rao,⁹ found that in 70.83% (n = 187) of cases in his study, the internal carotid artery intima showed horizontal tear.

Also, the study of Suárez-Peñaranda et al.,¹⁰ showed that intimal tear to the carotid artery represent (9.1%) of cases, jugular vein (2.2%), and carotid adventitial layer ruptures (21.7%) were all discovered. These might be connected in part to gravity and the usage of a stiff locked noose.

3.1. Conclusion

Bilateral multiple transverse intimal rips of the carotid arteries (Amussat's sign), the bluish hypostasis of the lower portions of the limbs, the oblique mark on the neck, and the protruding tongue could all be confidently attributed to hanging. On the other hand, a car accident may be to blame for the limbs' blackish abrasions, the numerous hemorrhagic spots on the scalp's underside in the parietal areas, and the left parietal fissure fracture that extended to the base of the skull. According to police investigations, the sick person was employed in an illegal alcohol manufacturing facility, which was also the most likely location for the hanging.

Conflict of interest

There are no conflicts of interest.

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