

CRIMINAL DISPOSAL OF THE DEAD AFTER HOMICIDAL STRANGULATION: AUTOPSY DEFYING PUTREFACTION AND EVIL MOTIVES ONCE AGAIN

PAWAN MITTAL^{1*}, RAHUL CHAWLA², ANIL KUMAR MALIK³

¹Department of Forensic Medicine, Bhagat Phool Singh Govt. Medical College and Hospital for Women, Sonipat, Haryana, India.

²Directorate of Medical Education and Research, Haryana, India. ³Department of Forensic Medicine, Gian Sagar Medical College and Hospital, Patiala, Punjab, India. Email: drmittalpawan@gmail.com

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ABSTRACT

Homicide with concealment of the corpse is a rarely encountered phenomenon in routine forensic work. Such cases represent a challenge by the fact that the bodies or parts thereof are unknown, without any relevant history, and usually depict well-established changes of putrefaction at autopsy. However, a proper scrutiny of the circumstances along with discovery of significant injuries at autopsy may bring a breakthrough to the case. A case of putrefied and unidentified male dead body is hereby described that was killed by ligature strangulation followed by dumping into a deep water channel which was, however, preceded by tying-up of extremities with a strong metallic chain. The postmortem findings along with the ancillary investigations and case circumstances helped in concluding the cause and manner of death which was subsequently followed by the arrest of the perpetrators who submitted and explained the whole story of the crime. Various possible means of suicide, including a self-application of restraint, were excluded from the study.

Keywords: Homicide, Corpse, Criminal, Ligature Strangulation, Putrefaction, Autopsy, Larynx, Hyoid bone.

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INTRODUCTION

The concealment/disposal of the body following a homicide is a challenging and rarely encountered phenomenon in forensic pathology [1]. Such cases carry special criminological features as a disposed-off victim with an unknown crime spot complicates the analysis of scientific and physical evidence [2]. Even in cases in which the corpse is retrieved shortly after the homicide, forensic pathologists often have to encounter badly altered bodies, skeletal remains, and the putrefied corpses [3]. Furthermore, the concealment may hinder analyzing not only the trace evidence and the identification of the victim but also the determination of the post mortem interval, nature of injuries, and dynamics of the death [4].

A case of homicide by strangulation is herein reported where the perpetrators, after murdering the victim, tied his body with a strong metallic chain and dumped it into a deep water canal. An abnormal dark-red and patterned discoloration of the anterolateral neck regions were noticed at autopsy that on dissection unveiled the whole story of the incident and helped in concluding the cause and manner of death. The criminal motives of the perpetrators were thereby defied, despite well-established changes of putrefaction in the body.

CASE REPORT

Crime Scene Details

The case belongs to an unknown and unidentified dead body of a nearly middle-aged man that was floating in a freshwater canal, in a head down, and bow-like posture (Fig. 1).

The local bystanders watched the body and informed the police accordingly. As the police reached the spot and extricated it out, it was found to be showing changes of moderate to advanced putrefaction and was bound with a heavy metallic brownish chain. The chain was running straight from the wrists to ankles, where it was fixed by means of multiple turns and knots (Fig. 2).

A flag-like cloth, bearing the emblem of a political party, was knotted and running in-parallel with it. On turning supine, the arc-like trunk

and lower limbs were raised in the air while the hips and lower waist were in contact with the ground with the head falling backward. Overall, the situation was suspicious of homicide with disposal of the corpse.

The investigating police officer registered the case under section 302/34 of I.P.C. (punishment for murder/criminal act done by several persons under common intention, respectively), with an apparent cause of death stated to be "due to drowning" and took it to the nearby district hospital's mortuary for postmortem examination by a board of medical officers. However, looking into the complexity of the case as well as body's appearances, the doctors referred the case for autopsy by a forensic medicine expert. The dead body was brought as such on the same day (of discovery) to the Forensic Medicine Dep't for postmortem examination.

Autopsy findings

The body was clad in a sand-stained, dirty white kurta-pajama. The kurta was heavily filled from within by heaps and balls of sand. The left side of the face over lips and periorbital regions, as well as the ear lobes, depicted postmortem animal feeding. It measured 174 cm in length and depicted well-established changes of bloating putrefaction in the form of gaseous distension, foul odor, epidermal slippage, washerwoman's hands and feet, purging of blood, and variable dark putrefactive discolorations.

The restraint was a heavy metallic chain similar to one used in confining grazing animal esp. buffaloes in villages, with husk and bamboo twigs entrapped at the knotted ends. It was tied around wrists and ankles causing an approximation and crossed-over position of the limbs (Fig. 3).

However, no infiltration of blood or ecchymoses was seen in the corresponding skin and underlying subcutaneous tissues. On further examination, the following findings were worth noticing:

An abnormal dark to bright reddish discoloration of the front and right-lateral neck regions was present (Fig. 4).



Fig. 1: Corpse in the water with a head down and bow-back-like posture



Fig. 2: Bloating putrefaction is established. Hands and feet approximated and tied with a brown metallic chain and in a crossed-over position. A political emblem (flag) is running in parallel and knotted with it. The general body posture is peculiar

On closer scrutiny, it was noticed that the discolorations were broad and running roughly parallel to each other. On dissection of the neck, the intracutaneous as well as the subcutaneous fatty tissues depicted well-marked ecchymoses and focal hematoma-like formation; almost exactly below the outer discolorations (Fig. 5).

Anterior aspects of the topmost strap muscles, including bilateral sternocleidomastoids, revealed focal areas of blackish shiny ecchymoses. The laryngeal-hyoid skeleton was completely ossified. Each superior horn of the thyroid cartilage showed a complete and well-displaced fracture with zig-zag-like acute ends and blood infiltration near the base (Fig. 6).

Bilateral arytenoid cartilages were fractured and dislocated while the left arytenoid was displaced medially and impinging upon the laryngeal lumen. Ecchymoses of the regional soft tissues was grossly visible and further confirmed on dissection. The right greater horn of hyoid bone was completely fractured, just proximal to its fusion with the body with surrounding subperiosteal infiltration of blood. Epiglottis showed a vertical tear at the tip. Cricoid cartilage was intact and showed variable islands of ossification.

On sectioning of the tongue, the central-medial aspects of deep lingual musculature were found to be ecchymosed, especially in the middle



Fig. 3: A close-up view of the tied limbs at autopsy. Husk and twigs are entrapped within knotted regions of the chain. Multiple loops and complex-fixed knots are present at both ends



Fig. 4: Abnormal dark to bright red discoloration of the neck skin at autopsy. Transverse discolorations can be seen over front of the neck

and posterior third regions. Spotty and streak-like bleedings were also seen over base of the tongue (Fig. 7). The carotids and jugulars vessels, vertebrae, and spinal cord were intact. The tissues over nape of the neck were unremarkable.

A focal area of subgaleal ecchymoses was present over the left temporal-parietal region of scalp, measuring 3 cm × 2 cm and situated well above the hat brim line. On serial-parallel incisions, the overlying fatty layers of scalp revealed hemorrhagic infiltration of blood over an area of about 4.5 cm × 2.5 cm that was easily demarcated from the adjoining paler tissues. The skull and intracranial contents were unremarkable while the brain had been converted into putrefied and grayish slurry-like mass.

No injury was found anywhere else on the body. No fluid came out on aspiration from the sphenoid sinuses. Lungs did not show significant distension macroscopically.

The cause of death was given as strangulation which was antemortem in nature, homicidal in manner, and sufficient to cause death in the ordinary course of nature. However, viscera was preserved for chemical analysis and bones for detection and comparison of diatoms. Toxicological analysis of the viscera resulted positive for ethyl alcohol while the peripheral blood sample revealed an ethyl alcohol concentration of 125 mg% that was well above the average level of putrefaction (30 mg%). No other poison or drugs were detected. The analysis of diatoms reported negative.

Subsequently, after about 45 days of corpse's discovery, the police arrested three persons who confessed to strangulating the victim using



Fig. 5: Intra and subcutaneous ecchymoses, corresponding to the external neck discolorations

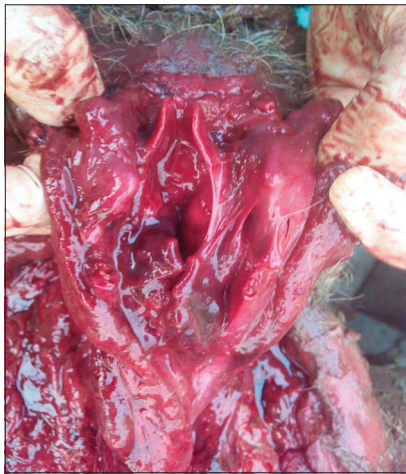


Fig. 6: Each superior horn of the thyroid cartilage shows complete and displaced fracture at the base. Bilateral arytenoids are dislocated. The right greater horn of hyoid bone is fractured

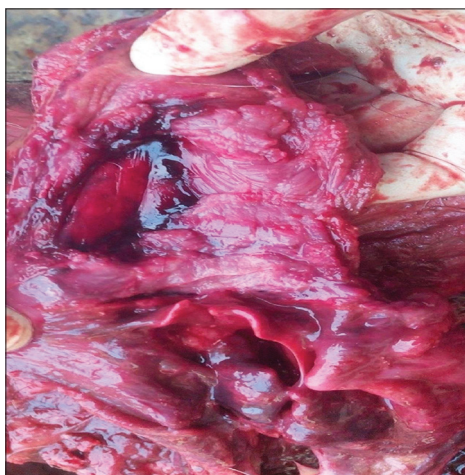


Fig. 7: Ecchymoses of the musculature of tongue over central-medial region. Spotty and streak-like bleeds are also present over the base

a long nylon-type rope that was further produced for forensic medical examination for a possible injury match and relating to the cause of

death. It was opined in favor of causing strangulation and subsequent death such as described in the postmortem report.

The accused stated to have consumed alcohol with the deceased on a subway that was running along the river with a premeditated plan to kill him due to some long running political dispute. After consuming alcohol and finding the right moment, one of them hit on the victim's head with a piece of wood (*lath*) that was followed by strangulation as the final mortal act. Thereafter, they bound his ankles and wrists with a heavy metallic chain which they had brought in the car, and dumped the body into the same water channel. The rope was thrown in open besides a tree from where it was later traced and taken into possession by the police.

The dead body was found about 15–20 km away from the original site of murder after about 1 week.

DISCUSSION

Concealment or disposal of the victim's body is not unusual, although an infrequently encountered forensic entity. If the body is disposed-off, it is difficult for the police and law officials to prove the offense, as the element of *corpus delicti* is not established [5]. The offender may attempt to delay or avoid discovery of the body while at the same time may take steps to prevent the identification of the victim and destroy forensic evidence [6]. In this particular context, direct and indirect corpse disposal may be encountered and require differentiation. In direct corpse disposal, severing of the victim's body parts is performed to complicate the identification while an indirect corpse disposal involves hiding the corpse *en-masse* without severing the body parts [7].

In the forensic literature, several disposal methods have been described and graded, depending on the complexity of procedure and perpetrator's behavior. According to Schneikert, corpse dumping may be graded as following [8]:

- Simply abandoning in an isolated area (with or without covering or wrapping the body), throwing in water (Grade 1)
- Deep burying, dumping in water with attached weights (Grade 2)
- Bricking up or embedding in concrete [9], dismemberment, feeding to animals, dissolving in chemicals, and burning (grade 3).

The most frequent disposal method is the dumping of a body or body's parts in water [7]. In cases of submerged victims and higher grades of concealment, the interpretation of injuries and distinction among antemortem and postmortem lesions may be very challenging from introduction of "advanced postmortem changes" into the body.

Homicides with dumping are commonly treated as issues involving a missing person at first [2]. It leads to the problem in that a police investigation may not be initiated or intensified until the victim is found dead. The corpse's discovery time in these cases has been described varying from a few hours up to 10 years, thereby highlighting the difficulties in starting investigations while dealing with such cases [1].

The concealment of the body sometimes prevents determination of the cause and manner of death. Such cases mostly involve the dismemberment of individual body parts [3,10]. In a study performed over existing forensic literature and in-house cases and comprising different "homicide with corpse disposal" methods, De Matteis *et al.* found strangulation to be the cause of death in 21% of the cases while 40% of the cases were attributed to head trauma. Their study included two cases of homicidal strangulation (one manual and the other by ligature along with stabbing) that was dumped into the water and additionally showed phenomenon of covering and casing [1]. Dogan *et al.* have described two homicide cases that were dumped into the empty wells. One victim had been murdered by stabbing with resultant pericardial tamponade and hemothorax while mechanical asphyxia due to ligature strangulation was the cause of death in the second case. The second victim had been put into a sack before dumping into the well and depicted changes of decomposition upon discovery [11].

A case involving tying and hiding of the victim's body after cranial gunshot wound is on record [12]. Chauhan *et al.* have described the case of a young unidentified female that was killed by ligature strangulation, involving a sexual sadistic component along with elements of necrophilia. The victim's body was left in a sack packed with vegetables and transported from the crime site and found abandoned in a park [13]. Studies on sexually-oriented homicides report strangulation to be the most common cause of death [14].

Khanagwal *et al.* have reported two postmortem cases showing unusual ways of body disposals. The murdered body of the first victim was found within a bori sac (*gathri*) that was placed over the buffers of a passenger train while in the second case the body was put within a metallic trunk (*viz.* "trunk murder") and placed inside the coach of an express train. Both of the trains had travelled miles of distances by the time putrefied body of each victim was discovered, thereby causing difficulty in a positive identification. The cause of death was throttling in the first case and smothering with gagging in the second [15].

It has to be further added that the postmortem corpse disposal to avoid its discovery, that is, a defensive behavior, may not be the only reason behind the actions of the perpetrator, particularly in cases of mutilation or dismemberment [1]. Corpse concealment may be only a secondary aim while the primary drive for such mutilations may be dominated by sexual perversions or psychosis such as an offensive, aggressive, or necromaniac tendency [16]. A peculiarity of the ways by which offense is committed also allows conclusions to be drawn about the personality of offender whose identity is initially unknown and is of interest to the investigating and legal authorities. The fixation of a political party's emblem to the metallic chain in the present case helped relating the homicide to some political motive or a personal rivalry.

Homicidal strangulation accounts for approximately 10–20% of all homicidal deaths in various countries [14,17]. Strangulation may be effected manually or using a ligature. In ligature strangulation, pressure on the neck is applied by a constricting band (e.g., belt, electric cord, and rope) that is tightened by some force other than the body's weight. In manual strangulation, pressure is applied by hand, forearm, or other limbs. The most frequent motives for homicidal strangulations are rape, sexual jealousy, and personal enmity [18].

A well-established putrefaction although introduces significant alterations in the appearance and texture of the soft tissues which may create problems in interpreting medicolegally significant findings, no short cuts in this regard should be entertained. The findings in the neck, especially the dark shiny ecchymoses and/or subcutaneous hematomas, fractures/dislocations of the laryngeal-hyoid complex, tongue hemorrhages, as well as the abnormal dark discolorations of the neck skin, even in putrefied corpses, may prove the telltale signs of a strangulation related death [19,20].

Although discoloration is an expected postmortem change, focal areas of accentuated redness may indicate antemortem injury. Antemortem contusions may be difficult to distinguish from postmortem discoloration. However, an incision into the area of suspicion may confirm regional to localized dark red ecchymoses in the subcutaneous fat and muscles, in contrast to adjacent uninjured yellow or pale red fat and muscle [21]. In addition, unique circumstances surrounding the corpse discovery, such as a firmly bound body in the present case, are sufficient alerts; anticipating a scrupulous and cautious autopsy.

However, before labeling the manner of death to be homicidal, a possible element of self-application of bondages must be ruled-out by observing the knot pattern and manner of tying [22]. Furthermore, a differentiation between the homicidal and suicidal manner of strangulation [23,24], as well as the possibility of a complex suicide by self-strangulation and drowning must be kept in mind [25].

An important feature diagnostic of ligature strangulation in the present case was the presence of multiple transverse and dark, band-like regions over the neck that on dissection depicted intra and subcutaneous ecchymoses in a similar distribution. This particular finding has been used to differentiate ligature strangulation from hanging and manual strangulation, as well as between homicidal and self-strangulation [24,26,27]. In this context, the pattern of internal ecchymoses has been considered equivalent to an "internal ligature mark" [26]. However, the overall pattern of injuries and circumstances in the present case did not leave any doubt to a homicidal manner of death.

Whenever a body is found in water, the autopsy must be conducted by an experienced forensic pathologist, as only he may be able to exclude the possibility of death by drowning [12]. If the putrefaction has set in, microscopic putrefaction-resistant vitality markers have been suggested and employed with success. Fibrin detection was possible at the site of superior thyroid horn fracture (despite lack of hemorrhage at the fracture site) in a decomposed corpse that was killed by homicidal strangulation. The body had been discovered 26 days after the murder [28]. Fibrin deposition at the site of the injury has been regarded as a vital phenomenon. The time necessary for its appearance is considered to be 10–30 min [29], which is not unusual in cases of protracted strangulations (involving prolonged struggle) and incomplete hangings where agony may last for a considerable time period [27].

A dubious process of "pink teeth phenomenon," especially in putrefied corpses of asphyxia-related deaths, has been described by some authors, although not validated till date [30,31]. The value of a well-performed diatom analysis on a deep bone such as femur, even in a putrefied and submerged corpse, cannot be overemphasized [32].

CONCLUSION

A comprehensive scene investigation and autopsy must be performed on all the corpses recovered from the water channels; irrespective of the body condition. A remarkable amount of information regarding the identification of victim and cause and manner of death may be obtained from such cases. A scrutinized investigation may be further helpful in explaining the perpetrator's behavior and motives behind such crimes.

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CONFLICT OF INTEREST

Nil.

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