

CASE REPORT

A Rare Case of Suicidal Hanging with Ligature Tied around the Abdomen – A Case Report

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Abstract:

Hanging is a common method of committing suicide. Usually in hanging, ligature and knot form a fixed or running noose around neck and seldom simple loop without knot is used. A 35 years old male committed suicidal hanging using a saree as ligature wherein the compression of neck has occurred in the absence of a noose, loop and knot around the neck. The body of the deceased was suspended from hook in ceiling by a saree used as ligature material, with the two limbs of the ligature passing around the neck, crossing over to opposite sides of the chest, and finally knot tied in front of abdomen after encircling the back. This arrangement of ligature material tied around the abdomen acts like a harness supporting the body weight. As a result, despite complete suspension of the body from the suspension point, the fatal pressure on the neck is produced only by the head and maybe by the forward leaning chest and arms, as in partial hanging.

Keywords: Suicidal hanging; 'V' shaped ligature mark; Ligature tied around abdomen.

Introduction:

Opining on asphyxial deaths by fatal pressure on neck is one of the most frequent problems encountered by forensic pathologist in their medicolegal work. Among the various modes of asphyxial deaths, suicide by hanging using ligature remains the commonest.¹ The apparent quickness of death, makes hanging a commonly chosen method of suicide.²

Hangings are virtually suicidal.^{3,4} Accidental hangings are rare, and hangings by homicidal intent are even rarer.^{3,4} Forensic pathologists are customarily able to deduce suicidal hanging based on the characteristic ligature mark findings over the neck, asphyxial stigmata and the circumstantial evidences in the case barring homicidal design.

However, seldom a case of apparent suicidal hanging may confound the forensic examiner by its odd presentation and circumstances which could only be explained by a meticulous and comprehensive autopsy supplemented by the circumstantial evidence provided by investigating agency.

This case report discusses a rare case of suicidal hanging in which an odd ligature mark was detected over the neck, running across the chest, and encircling the back and abdomen. The peculiar ligature mark could be explained after considering the circumstantial evidence obtained by the police from scene of incident inquiry, including photographs depicting the deceased victim in a hanging posture.

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Article History

DOR : 18.10.2022 DOA : 29.03.2023

Materials and methods:

As per the inquest papers, the deceased was a 35-year-old male who lived with his wife and two children in a single room accommodation. By occupation, he was a daily wage labourer. Couple had a quarrel in evening and the wife went to her mother's house in nearby area with her children. When she returned home in the morning at 06:00 AM, she discovered her house's gate had been shut from the inside, and she received no response to her knocks and calls. Wife peered through the window and saw her husband hanged from the ceiling (Fig.1). Wife informed the relatives and police. Police arrived at the scene at 08:00 AM and busted open the door.

The body of the deceased was suspended from a hook in the ceiling by a dark pink colored printed saree used as ligature material, with the two limbs of the ligature passing around the neck, crossing over to opposite sides of the chest, turning towards back and encircling it and finally the knot was tied in front of the abdomen (Fig. 2).

The body was brought down by the police by untying the knot of ligature material. Examination of the scene did not reveal any evidence of struggle and no suicide note was discovered. Deceased's body was brought to our mortuary for post-mortem examination.

Autopsy findings: Deceased was dressed in a sky-blue full-sleeve cotton shirt, blue jeans, a white sleeveless vest, and brown underpants. Examination of clothes was unremarkable. Rigor mortis was complete, and post-mortem lividity was established in a glove and stocking pattern in the hands, forearms, and legs. No signs of putrefaction were found. Facial features appeared congested. The conjunctivae were pale and there were no petechiae. Tongue was protruded and bluish black in colour. The lips and nails appeared blue.



Figure 1. Body suspended from hook in ceiling. Ligature mark encircling the back.



Figure 2. Ligature material diagonally crossing over chest. Knot tied in front of abdomen. Complete hanging, feet above the floor.



Figure 3. 'V' shaped ligature mark over neck.

Examination of neck revealed a 'V' shaped brown colored pressure abrasion present over its anterior aspect (Fig. 3). The two limbs of the 'V' shaped ligature mark ran diagonally upward and backward behind the ears over the mastoid processes and merged into hairline. Length of right and left limb of 'V' shape ligature mark is 14 cm and 13.5 cm respectively. As both the limbs of 'ligature mark join to form 'V' at the suprasternal notch, they cross over to the opposite side and run diagonally across both sides of the chest as a faint blanchered mark measuring 35 cm in length and 3 cm in width (Fig. 4). At a distance of 20 cm below the axilla, the faint blanchered mark turns towards the back and encircles both back and the abdomen at a level 3 cm above the umbilicus [Fig. 5 and 6]. The circumference of ligature mark encircling the back and abdomen is 87 cm and its width is 5 cm. No other external



Figure 4. Both limbs of 'V' shaped ligature mark crosses over to the opposite side and run diagonally across sides of the chest.

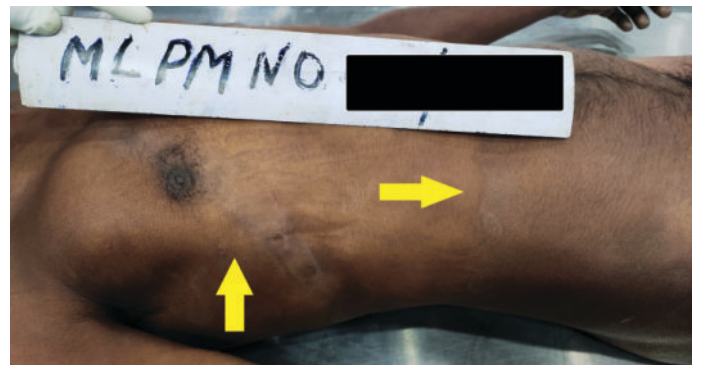


Figure 5. Ligature mark running diagonally across chest and turning towards back. Ligature mark over abdomen.

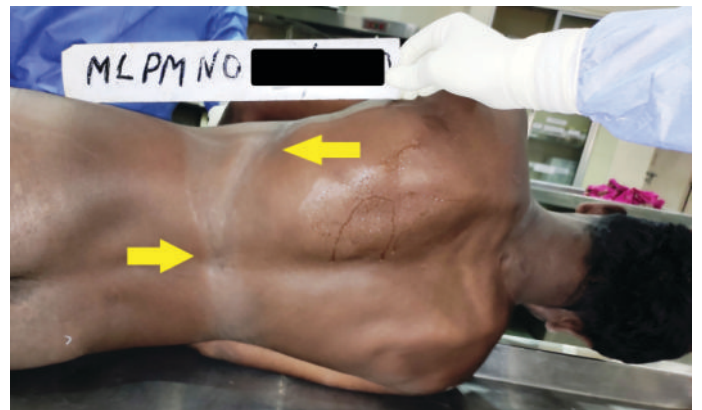


Figure 6. Ligature mark over back.

injuries were found on his body.

Internal examination of the neck revealed small haemorrhages on the bilateral sternocleidomastoid muscles beneath the external ligature mark. Laryngeal cartilages and hyoid bone were found to be intact without any evidence of fracture. Bronchi contained frothy blood-stained fluid. Lungs were oedematous and congested. The rest of the viscera including kidneys, liver and spleen showed congestion. No significant abnormality was detected on examination of stomach and intestines. Visceral sample for chemical analysis were not preserved.

The cause of death was ascertained as "Fatal neck compression consequent to hanging by ligature".

Discussion:

Hanging is defined as a form of asphyxial death caused by constriction of the airway at the neck as a result of the body being suspended by a ligature in the form of a noose, applied in such a way that the weight of the body or another portion of the body, such as the head, acts as a constricting force.^{5,6} In most hanging cases, the ligature and knot will form a fixed or running noose.⁷ However, a few cases where suicidal hanging has been committed using a simple loop without any knot have been documented in the literature.^{8,9} Hanging has been classified as typical hanging when the ligature runs from the midline above the thyroid cartilage symmetrically upwards on both sides of the neck to the occipital region and the point of suspension is over the centre of the occiput.^{5,6} Any deviation from the features of typical hanging has been classified as atypical hanging.^{5,6}

The case discussed presents a unique scenario of typical hanging wherein the compression of neck has occurred in the absence of a noose, loop and knot around the neck. The two limbs of ligature have caused the fatal neck compression as they cross over each other towards the opposite side of the chest making a 'V' shaped ligature mark.

Depending upon the position of body, hanging can be either complete or partial.^{5,6} In complete hanging the body remains fully suspended without the feet or any part of the body touching the ground and the constricting force is the weight of the body. Partial hanging is asphyxial death produced by partial suspension of the body by a ligature around the neck in the form of a noose, where the constricting force is the weight of the head and not of the body.^{5,6}

The case discussed presents a unique anomalous situation where although body is in complete hanging but the constricting force is not the whole body's weight. The ligature material after passing around the neck and over the chest, encircles the back and finally knot is tied in front of the abdomen. This arrangement of ligature material tied around the abdomen acts like a harness supporting the body weight. Therefore, despite complete suspension of the body from the suspension point, the fatal pressure on the neck is produced only by the head and possibly by the forward leaning chest and arms, as in partial hanging.

The case further emphasizes the importance of Forensic photography at the site of incident. In this case photos of the victim in a suspended position were immensely helpful in comprehending the peculiar ligature mark that covered the victim's neck, chest, back and abdomen.

Conclusion:

The field of forensic medicine never ceases to astonish and puzzle Forensic pathologists by offering strange and perplexing instances to be solved. The case discussed here presented a unique perplexing situation due to a peculiar and unconventional ligature mark which could be explained after meticulous and comprehensive autopsy supplemented by circumstantial evidence. Uniqueness of this case, in which fatal pressure over neck is not produced by whole body weight in a complete hanging, emphasizes the importance of an open scientific mind for a forensic pathologist.

Conflict of Interest: None to declare.

Financial Assistance: None to declare.

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