

Original Research Paper

Newer Trends in Hanging Death

*Ashok Kumar Samanta, ** Soumya Ranjan Nayak

Abstract

A total of 105 cases of deaths due to hanging were studied in a span of 5 years time. This present study throws some light on the emerging trends that Hanging is increasingly being adopted by a relatively younger age group who are mostly illiterate and of poor socio-economic status. Hanging being viewed as giving swift painless death and without much expenses and without arousing much suspicion, this mode is increasingly adopted to commit suicide. Dribbling saliva mark, which was a hallmark of Ante-mortem hanging, is increasingly seen in less number of cases. No incidence of fracture of Hyoid bone being seen in this study, due to the fact that most cases were of lower age group and also may be due to most of the victims adopting soft ligatures and low suspension points. Transverse tears in the Carotid arteries were not seen here and on subjecting to Histo-pathological study, we could detect disruption of intimal layer of Carotid artery. Effect of pressure on layers of skin were seen on Histo-pathological study showing vital reaction changes useful for labelling Ante-mortem hanging.

Key Words: Hanging deaths, Ante-mortem hanging, Fracture of throat skeleton

Introduction:

Since ages people in distress with mounting pressures of life, break down to end their life and invariably it is seen that the easier route which is readily available to them is death by hanging. Hanging deaths have fascinated so many minds and increased frequency of hanging cases have developed interest to take up active projects. In the past, so many Forensic Pathologists have taken an active interest in hanging deaths and have done many studies in quest for an answer to their enquiring minds.

Aims & Objectives:

Many literature articles on hanging exist and each differs from the other in their approach to the subject. The present study on hanging makes a detailed autopsy examination and tries to compare and correlate established findings by previous authors. An attempt is made to establish newer trends and deviations from the earlier studies. A newer dimension of Histo-pathological examination has been added to this present study to highlight microscopic events. An attempt is done to find plausible explanations to findings got in the study keeping in view the Indian scenario.

Corresponding Author:

*Associate Professor, Dept of Forensic Medicine, Hi-Tech Medical College, Bhubaneswar, Odisha
E-mail: drashoksamantaabc@gmail.com

**Assistant Professor,
SCB Medical College, Cuttack, Odisha

Materials & Methods:

The materials taken for this study are those autopsy cases which had history of death by hanging as reported by the police inquest and the period of prospective study was for 5 years. Regular autopsy examination is done with special attention to thorough examination of the neck structures. Skin samples are taken from the ligature mark and also corresponding area of the underlying carotid vessels and sent for Histo-pathological examination along with control. Demographic history is collected from the relatives and also the police, regarding various epidemiological parameters and a special protocol was made for this purpose. The result so obtained was then subjected to statistical analysis.

Observations:

A total of 105 cases of deaths due to hanging were studied out of total 1468 autopsy cases within a three years time. Among all autopsy cases, incidence of hanging deaths came to 7.15% with males forming 4.42% and females forming 2.72% thus showing a higher preponderance of males to females. Segregating sex-wise, females showed a higher preference than males, to hanging as a form of committing suicide (13.88% & 5.51% respectively). Bulk of male cases belonged to age range of 21 – 40 years (80%) but bulk of female cases were restricted to a lower age range of 11 – 30 years (90%). The minimum & maximum age range noted for males were 16 yrs & 45 yrs respectively and for females, 18 yrs

& 35 yrs respectively. Socio-economic status of the victims showed that majority of them belonged to poor or average status (80% males & 85% females) and rest of them can be categorized to above average status. Analysing the Educational status, it was seen that most of the cases belonged to Illiterate group (45.7% combined sex) followed by High school dropouts (38.10%) and Graduates (15.23%). On analysis of Occupational status, most of the victims were Daily Labourers (30.48% combined sex) followed by housewife (20%), business class (18%), service (16%) and students (14.3%). With respect to preference to site, majority of the victims have chosen the safe confinement of the house (66.15% Males & 80% Females) to commit suicide by Hanging. As per the history given by Police or site visit, it was found that majority of the males (70.76%) adopted Complete suspension mode and majority of females (57.50%) choosing Partial suspension mode of Hanging. (Table 1 & 2)

On External Examination, majority of both sex combined (58.09%) utilized Slipping knot for the process of hanging. A Discontinuous Ligature mark was seen in about 92.38% of cases. 40.95% of cases had utilized Cloth based and 46.67% of cases adopted Rope as Ligature material. In all the cases, the Ligature mark was running in Oblique direction with 82.85% showing atypical position of the Knot either at right or left mastoid area. Rest 17.14% showed typical knot position. As pertaining to Level of Ligature mark over the neck, 88.5% of the cases were above the Thyroid Cartilage level and rest almost over the Thyroid cartilage. On closer examination with a hand lens, Ecchymotic spots were observed along the upper border of Ligature mark in 18.46% of males and 35% of female cases with an average duration of suspension of ligature in males being 10.5 hours and 11.7 hours in females. Dribbling Saliva mark was seen in about 32.31% of males and 15% of females, the total incidence being only in 25.71% of cases. Conjunctiva petechiae were found in about 46.67% of cases, majority of them being seen in the group adopting Complete & Atypical type of hanging. 91 cases (86.7%) showed the normally seen Glove & Stocking pattern of Post-mortem lividity. 90 cases (86.5%) showed faecal incontinence.

On Internal Examination, the neck structures were dissected carefully and examined in detail to detect injuries due to the process of hanging. In this present study, not a single case exhibited Hyoid bone or Thyroid cartilage fracture. There were no Transverse tears in the intima of Carotid artery in any of the

cases. 48 cases (45.7%) showed Visceral Pleura petechial hemorrhages. In 47 cases (44.76%) right side of the heart showed dark fluid blood and in the rest it was empty. Signs of Asphyxia like Nail bed cyanosis and visceral congestion were observed in all the cases in this study. In about 95 cases, where the cadaver was relatively fresh, section of Skin from Ligature mark and corresponding Carotid Artery were taken for histopathological examination. In all the cases subjected for HP examination of the Skin, the report showed Vital reaction [1] with features like infiltration of Neutrophils, RBC, Hemosiderin laden Macrophages which was not seen in the control samples taken from normal areas not involved with the Ligature Mark. In the Carotid artery samples, there were features of disruption of the Tunica Intima layer from the Tunica Media with infiltration of Neutrophils, RBC and Hemosiderin laden Macrophages.

Discussion:

It is of common view that Hanging is mostly suicidal and in this present study, all the cases were attributed to suicide as per Inquest report and proved later from Autopsy examination. Suicide by hanging was usually adopted by the subjects because of convenience and minimal requirements for committing the act. The present study showed age range of the victims from 11 – 40 years where victims are under increased pressures and burdens of life and when combined with illiteracy (45.7%) and poor socio-economic status (82.5%), might have led to failure to cope with pressures of life and thereby committing suicide by hanging. The common pressure situations faced could be domestic quarrels, failure in love affairs, mental illness, poverty, failure in examinations, dowry torture, unemployment etc as quoted by the National Crime Record Bureau, 1994.

The usual material utilized for committing the act in this study were those that were readily available nearby which includes Rope and Cloth based materials like saree, dhoti, lungi etc.[2] The fact that most of the male victims in this study adopted complete hanging and majority of females adopted partial mode of hanging was explained due to the ease of higher reach for tying the knot to the ceiling by the males and utilizing rope based ligature material. Dribbling Saliva mark [5] which signifies Ante-mortem hanging was seen in only 25.71% of cases because of the fact that relatives in their hurried attempt to resuscitate the victim and save them from dying, might have led to erasure of the mark from the body.

Majority of the conjunctiva petechiae [5] were observed in those subjects adopting a combo of Complete and Atypical hanging which might signify the role of rise of venous pressure in these positions along with increased duration of suspension, average being 10.5 hours. The present study did not show any Hyoid bone fracture because of younger age of the study group and the usual age showing fracture in earlier studies quotes average age of 40 years or above. [3, 4] So also not a single case showed transverse tears [2] in the intima of carotid artery which can be explained by the fact that most of the cases were from low suspension points. [4, 6, 7] Histo-pathological examination findings of skin and carotid artery indicated Vital Reactions signifying ante-mortem hanging. Compression of Skin layers and Disruption of Intima of Carotid artery signifies the effect of pressure on the layers of Carotid artery by the Ligature material during the act of hanging.

Conclusion:

The present study throws some light on the emerging trends that Hanging is increasingly being adopted by a relatively younger age group who are mostly illiterate and of poor socio-economic status. With increasing disparity between the poor and the rich and due to high ambitions, these victims fall short of their expectations and who then adopts to commit suicide by hanging. Hanging being viewed as giving swift painless death and without much expenses and without arousing much suspicion, this mode is increasingly adopted to commit suicide.

Dribbling saliva mark, which was a hallmark of Ante-mortem hanging, is increasingly seen in less number of cases. No incidence of fracture of Hyoid bone being seen in this study, due to the fact that most cases were of lower age group and also may be due to most of the victims adopting soft ligatures and low suspension points. Transverse tears in the Carotid arteries were not seen here and on subjecting to Histo-pathological study, we could detect disruption of intimal layer of Carotid artery. Effect of pressure on layers of skin were seen on Histo-pathological study showing vital reaction changes useful for labelling Ante-mortem hanging.

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Photo 1: C.S. study of Carotid Artery 1

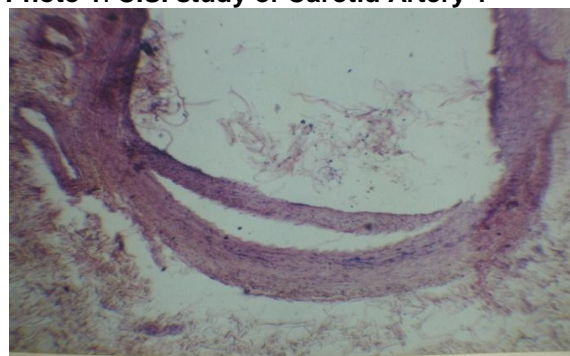


Photo 2: C.S. study of Ligature mark 2

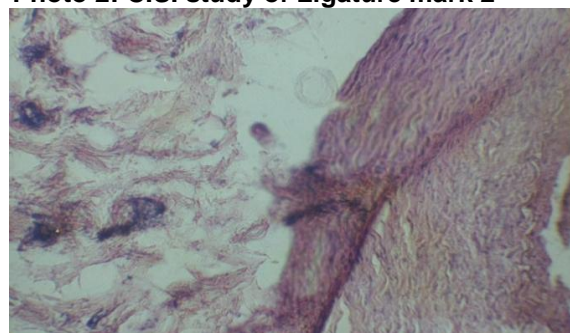


Table 1: Literacy Status

S. No.	Literacy Status	Males	Females	Total (%)
1	Illiterate	28	20	48(45.70)
2	High School Dropout	24	16	40(38.10)
3	Graduates & Above	12	4	16(15.23)
4	Unknown	1	0	1(0.97)
Total		65	40	105(100)

Table 2: Occupational Status

S. No.	Occupation	Males	Females	Total (%)
1	Manual Labourers	27	5	32(30.48)
2	Housewife	0	21	21(20.00)
3	Students	9	6	15(14.28)
4	Service	15	2	17(16.19)
5	Business	13	6	19(18.09)
6	Unknown	1	0	1(0.96)
Total		65	40	105(100)

Table 3: Incidence of Conjunctival Petechiae

S. No.	Type of Hanging	Cases	Percentage
1	Complete & Typical	2	04.08
2	Complete & Atypical	26	53.07
3	Partial & Typical	3	06.12
4	Partial & Atypical	18	36.73
Total		65	100.00