

Study of Deaths due to Hanging on Autopsied Cases at Mortuary Government Medical College Hospital Jammu - A Retrospective Study

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How to cite this article: Bhat MA, Maini V, Arora S. Study of Deaths due to Hanging on Autopsied Cases at Mortuary Government Medical College Hospital Jammu - A Retrospective Study 2023;17(2): 104-107

ABSTRACT

Background: Hanging is a form of asphyxia caused by external pressure on upper airways derived from a band tightened by the gravitational weight of the body. It could be suicidal or homicidal.

Method: 50 dead bodies (35 males and 15 females) aged between 20-70 years old who died due to hanging were studied. The autopsies were carried out to rule out gender differences, pattern of ligature marks on neck, ligature material used, fractures of hyoid bone or thyroid cartilage in the neck, significant findings in dissection of neck caused by death due to hanging, differences between antemortem and postmortem hanging, associated injuries in hanging etc.

Results: 35 (70%) males, 15 (30%) females dead bodies due to hanging 19 (38%) were summer, 20 (40%) in rainy, 11 (22%) in winter season, 14 (28%) outdoor, 36 (72%) were outdoor hanging deaths, 36 (72%) ligatures were above the thyroid cartilage, 9 (18%) at the level of cartilage, 5 (10%) below the level of thyroid cartilage. The significant findings of neck dissection were 30 (60%) in the present study.

Conclusion: The present study of deaths due to hanging will certainly help the medico-legal experts to differentiate between suicidal and homicidal hanging.

Keywords: Ligature, Strangulation, Asphyxia, Thyroid cartilage, Hyoid bone.

INTRODUCTION

Hanging is a form of asphyxia caused by external pressure on the upper airways derived from a band tightened by gravitational weight of the body ⁽¹⁾.

It is classified as complete when the whole body is suspended and incomplete when suspension regards only part of the body ⁽²⁾.

When the loop of the ligature band lies on the anterior region of neck and the knot is on the back hanging is defined as typical all other conditions are defined as atypical. Hanging is a common method of suicide, although rarely a murderer chooses hanging to commit homicide ⁽³⁾. In few cases hanging occurs as an accidental event. Hanging is the second common method used as it causes sudden death with less pain.

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The incidences of hanging is predominantly in males especially in rural areas including farmers, labourers who are more prone to hang when they are humiliated socio-economically⁽⁴⁾⁽⁵⁾. Hence attempt was made to evaluate the hanging in sexes, different places and different seasons.

MATERIAL AND METHOD

50 cadavers (35 males and 15 females) aged between 20 to 70 years old brought to Mortuary Department of Forensic Medicine and Toxicology, Government Medical College Jammu who died of hanging were autopsied.

The autopsies were conducted to rule out gender differences, age, places, seasons, pattern of ligature marks on the neck, and significant findings in the dissection of neck, to differentiate between suicidal and homicidal hanging etc.

Duration of study was July-2018 to December-2021.

Statistical analysis

Genders, different seasons, places, different sites of ligature marks on the neck, and significant findings in dissection of neck were studied and classified with parentage. The statistical analysis was carried out in SPSS software. The ratio of male and female was 2:1.

Table 1: Study of death due to hanging in both sexes

Sex	No of cases (50)	
	No. of cases 50 (fifty)	Percentage (%)
Male	35	70
Female	15	30

Table 2: Study of death due to hanging in different seasons

Season	No. of cases (50)	Percentage (%)
Summer	19	38
Rainy	20	40
Winter	11	22
Total	50	100

OBSERVATION AND RESULTS

Table-1: In the study of death due to hanging 35 (70%) were males, 15 (30%) were females.

Table-2: The different seasons in which deaths of hanging occurred 19 (58%) in summer, 20 (40%) in rainy, 11 (22%) in winter.

Table-3: Places of hanging death study - 14 (28%) were outdoor hanging and 36 (72%) were Indoor hanging.

Table-4: Study of different sites of ligature on the neck in hanging deaths - 36 (72%) ligature marks above the thyroid cartilage, 9 (18%) at the level of thyroid cartilage, 5 (10%) below the level of thyroid cartilage.

Table-5: Study of significant findings of neck dissection in deaths due to hanging - 12 (24%) Haemorrhages in strap muscles, 4 (8%) injury to neck muscles, 5 (10%) injury to thyroid cartilage, 4 (8%) tear of carotid artery, 5 (10%) fracture of hyoid bone, Total number of significant findings were 30 (60%)

DISCUSSION

Present study of deaths due to hanging on autopsied cases at mortuary of Government Medical College Hospital Jammu, 35 (70%) were males and 15 (30%) females (Table-1).

Table 3: Study of hanging deaths at different places

Places of Incidence	No. of cases (50)	Percentage (%)
Outdoor	14	28
Indoor	36	72
Total	50	100

Table 4: Study of different sites of ligature marks on the neck in hanging deaths

Site of ligature marks on neck	No. of patients (50)	Percentage (%)
Above the level of thyroid cartilage	36	72
At the level of thyroid cartilage	9	18
Below the level of thyroid cartilage	5	10

Table 5: Study of significant findings of Neck dissection in deaths due to hanging

Sl. No	Significant findings	No. of cases	Percentage (%)
1	Haemorrhages in strap muscles	12	24
2	Injury to Neck muscles	4	8
3	Injury to Thyroid cartilage	5	10
4	Injury to cricoid cartilage	0	0
5	Tear of carotid artery (intimal layer)	4	8
6	Fracture of hyoid Bone	5	10
7	Total Number of significant findings	30	60

19 (38%) deaths were in summer, 20 (40%) in rainy, 11 (22%) in winter (Table-2). 14 (28%) deaths were outdoor, 36 (72%) were indoor (table-3). The sites of ligature marks were 36 (72%) above the level of thyroid cartilage, 9 (18%) at the level of thyroid cartilage, 5 (10%) below the level of thyroid cartilage (Table-4). The significant findings in dissections of neck were 12 (24%) Haemorrhage in strap muscles, 4 (8%) injury to neck muscles, 5 (10%) injury to thyroid cartilage, 4 (8%) tear of carotid artery, 5 (10%) fracture of hyoid bone (Table-5). These findings are more or less in agreement with previous studies ⁽⁵⁾⁽⁶⁾⁽⁷⁾.

In many cases of murderer after strangulations to stimulate a suicidal event committed by the victims. It was also reported that, accidental auto erotic hanging deaths and accidental hangings in the paediatric population. It was also noted that males of rural area more prone to hang for death. It could be due to depression caused by poverty, drought, un-employment, failure in love affair, divorcee, and addiction towards alcohol or narcotic drugs, ganja, morphine takers etc etc. These addicted people due to hallucinations and euphoria cannot understand that hanging may end their life, submit themselves to hanging when they don't get addicted things⁽⁸⁾.

Moreover many adults were over ambitions (mega mania) whenever they could not fulfil their dreams, feel humiliation and end their life by hanging with rope, plastic ropes, cloths are easily available to hang themselves hence they end their life by hanging ⁽⁹⁾. In old age, the elders are ignored and neglected in the family; elderly people become alone

when they lose their life partners and develop depression, cannot tolerate the dependent life and end their life by easily available rope or any clothes⁽¹⁰⁾.

In addition to this, jealouslygreedinessare the vital factors for hanging. Greedy and jealous people kill the affluent relatives or friends, then portray or present these murders as hanging⁽¹¹⁾.

In addition to this schizophrenic patients may have major depression, delusions or fluctuating moods may also hang themselves without knowing the consequences ⁽¹²⁾. Hence the psychiatric patients must be kept under surveillance of family members or attenders because their attitudes are un-predictable.

SUMMARY AND CONCLUSION

Present study of deaths due to hanging caused by rope as a ligature material. The ligature mark on neck observed in all cases with characteristics (position, direction, depth, continuity, thickness etc) on the other hand internal neck findings/fractures were observed in some cases. The ligature mark was easily detectable through, external examination; A careful and complete analysis of the characters of the ligature mark is very important to differentiate whether hanging is suicidal or homicidal for medico-legal experts.

This research work was approved by Ethical committee of Government Medical College, Jammu-180001.

Conflict of Interest: No

Funding: No

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