

An Analytical Study of Death due to Hanging

K. Venkata Nagaraju¹, G. Lavanya Kowsil²

¹Assistant Professor, ²Associate Professor, Department of Forensic Medicine and Toxicology,
Gandhi Medical College, Secunderabad

Abstract

Hanging is said to be one of the commonest methods of committing suicides. It is also seen as accidental and homicidal death. The present study is mainly done to know the importance of hanging among all unnatural deaths which are subjected to Post-mortem examination in the Mahatma Gandhi Memorial Hospital, Warangal mortuary during the period between January 2012 and March 2013. Magnitude of hanging deaths was decreased to 4.27% of total Post-mortem examinations. Male to female ratio is 2.61 : 1.60% of total hanging deaths are seen in the age group of 21 – 40 years. 98% of total hanging deaths are Suicidal and rest of them are accidental. No homicidal hanging is seen in the present study. Reasons committing suicide were many. Social problems were outnumbering the physical and psychiatric problems.

Key words- hanging, suicide, ligature material.

Introduction

Death is an incidence in the human life, which cannot be avoided or postponed, but it is advanced in some people by adopting the unnatural means. Most of the times, a person who vexed in life and does not want to continue his life, will opt for deliberate self-harm or suicide. Suicide is a momentary decision, which depends on circumstances prevailing at that particular time. The victim will choose the method which is easily accessible and affordable to him.

Hanging is one method of committing suicide which is commonly seen among all suicidal deaths. The reason for this may be the ease of access to the ligature material. Hanging is that form of asphyxia which is caused by suspension of the body by a ligature which encircles the neck, the constricting force being the weight of the body¹. When the constricting force of the ligature causes compressing narrowing of laryngeal and tracheal lumen causing blockage of the airway that may leads to death². Most of the time Hanging to be suicidal

unless the circumstantial and other evidences are strong enough to rebut the presumption³.

In 5th Century Hanging was first introduced as a method of execution in Anglo-Saxon Britain. In 1196 William Fitz Osbert became the first person to hang at Tyburn (for sedition). In 1212 King John was reputed to have ordered the hanging of 28 young men and boys at Nottingham Castle. They were the sons of rebel Welsh chieftains whom he had taken hostage. WHO report says that suicide is 8th leading cause of death in 15-44 years persons in 2004⁴. In india in 2012 hanging was the second most common cause

Hanging incidences were in Indian scenario since ages. Hanging is rampant in around Warangal city also. It was found in earlier studies that the incidence of hanging is increasing. The sex ratio is also changing. It found necessary to make a study on these deaths occurring of hanging to know the present scenario and impact on the deceased family and society also.

Objectives

1. To find out the demographical distribution of death occurring due to Hanging
2. To analyse the deaths occurring due to Hanging in relation to the Manner of death according to Inquest, Complete or Partial hanging, Place

Corresponding author:

Dr. G. Lavanya Kowsil

Associate Professor, Department of Forensic Medicine
And Toxicology, Gandhi Medical College,
Secunderabad. Email id- surenderjakkam@gmail.com

of hanging, Ligature material, Post-mortem changes, Ligature mark characters, Changes in neck structures, Precipitating Cause of Death etc.

Material and Method

The present analytical study is made on those dead bodies who died of Hanging and are subjected to Post-mortem examinations at the mortuary of Mahatma Gandhi Memorial Hospital, Warangal by Department of Forensic Medicine, Kakatiya Medical College, Warangal during the period between January 2012 and March 2013.

Inclusion Criteria:

All Hanging deaths subjected to Post-mortem examination in the mortuary of Kakatiya Medical College, Warangal during the period between January 2012 and March 2013, registered in the Police Stations coming under the Jurisdiction of Department of Forensic Medicine, Kakatiya Medical College Warangal.

Exclusion criteria:

1. Unidentified dead bodies died of hanging are discarded.
2. Decomposed bodies are discarded as the post-mortem examination findings are not clear.
3. Exhumation bodies are not selected.
4. Spot post-mortem examinations (at scene of crime) are not selected.
5. Cause of Death which is given as "Pressure over neck" are not selected.

Data was collected from inquest, FIR, statement made by relatives and post mortem reports. collected data was analysed according to the objectives.

The present study appears to be the tip of an Iceberg; still a lot is to go, because of the lack of other investigation procedures at our end. However, an effort is made to compare the material evidence with the available literature.

Ethical Clearance- Institutional ethical clearance taken before stating the study.

Observations

The present study is made on the hanging deaths occurring in and around Warangal Municipal Corporation area, which are subjected to Post-mortem examination in the mortuary of Mahatma Gandhi Memorial Hospital, Warangal during the period of January 2012 – March 2013.

The following things are observed during the study period.

1. A total of 98 dead bodies subjected to Post-mortem examination were studied during the study period, where the Cause of Death was given as due to Hanging.
2. There is a male preponderance seen the deaths as 71 (72.4%) were male and 27 (27.6%) were females, i.e. coming for almost **2.63 :1** ratio
3. The frequency of deaths was showing the bell curve distribution occurring peak in the age groups of 21 to 30 years and 31 to 40 years age group, which accounted for 60% of total deaths. Deaths were occurring even in the late stages of life as after 61 years of life by hanging. The youngest to commit suicide in the present study was 15 years girl. And elderly person committed suicide was aged about 81 years male.
4. The distribution of deaths in the calendar year was not following any pattern, however more deaths were seen from June 2012 to August 2012, which were 26 and accounted for 26.6% of total deaths.
5. Most of the victims were from rural (49) background, followed by sub-urban residents (32). Urban residents (17) were also died in the present study.
6. Labourers from different setups died most frequently than others, death of whom tolled 46 numbers. 4 Old aged people who were not having any work were also included in the present study. 13 students, 13 house wives, 17 semiskilled professionals as mason workers and 5 professionals were seen in the present study.
7. Illiteracy once again prevailing in causing the deaths and accounted 49 deaths. Next victimised group was studied up to primary education they were 31.

- 7 persons completed secondary education and 11 graduates and professionals were also committed suicide by hanging.
- 8. Married persons were more involved and they were 63 and unmarried were 30, whereas widowed were 5.
- 9. 96 of 98 deaths taken for the present study were died of suicidal attempts; whereas 2 persons were died of accidental manner. One of whom was hanged from a banner, other was from a wire.
- 10. Low and middle socioeconomic strata people were involved almost equally and there score was 46 and 51 respectively. One male from software professional belonging to high socioeconomic strata was also seen in the present study.
- 11. Most of the victims committed suicide either in the early morning i.e. from 5 am to 11 am (23); or the evening i.e. 3 pm to 7 pm (23); or in the late night hours i.e. 12 am to 5 am (24); whereas 17 persons committed during the afternoon hours i.e. from 11am to 3pm; and 11 persons died in the early night hours i.e. 7pm to 12 midnight.
- 12. Most of the persons (79) preferred indoor i.e. within the closed room for committing suicide. Whereas 17 committed suicide in the outdoor i.e. either to a tree or other point of suspensions. Two accidental deaths also occurred in the outdoor.
- 13. 67 of the total deaths were due to partial hangings and many of them had feet touching the ground. 31 were complete hangings.
- 14. 62 persons chose soft and broad ligature material as saree, chunny or dhothi as ligature material. 36 persons chose soft flexible and narrow ligature material as plastic wires, electric cords and ropes.
- 15. Ligature mark was prominent in almost all cases and was measurable. In 88 cases it left an abraded contusion. In 10 cases it made a groove, which was very much prominent.
- 16. In 29 victims soft tissues of neck structures were injured and produced contusions in the strap muscles. In the rest of the victims there was no soft tissue injuries seen internally. In no case there were fractures of the neck structures were seen.

- 17. 18 of the total died because of physical illness, of which pain abdomen and incurable diseases were predominant. 31 persons died because of psychiatric illness, who suffering from various types of illness and were on treatment. 14 of them made unsuccessful attempts in the past. Social reasons as financial, failure in the examinations and failure in the love etc. took 47 lives. 2 persons died of accidental manner without any reason.
- 18. 6 people could have dare put a suicidal note at the scene of offence

Tab. No. 1 Sex, Age and Month wise Cross tabulation

Month	Sex	Age						Total
		11 - 20 years	21 - 30 years	31 - 40 years	41 - 50 years	51 - 60 years	More than 61 years	
January 2012	Male		0	6				6
	Female		1	0				1
February 2012	Male		1	2			2	5
	Female		1	0			1	2
March 2012	Male	0	1	2				3
	Female	2	0	0				2
April 2012	Male		2	1			1	4
	Female		0	1			0	1
May 2012	Male	0	2		1			3
	Female	1	2		0			3
June 2012	Male		2	2	1		1	6
	Female		0	0	2		0	2
July 2012	Male	0	1	3	2		0	6
	Female	1	1	1	0		1	4
August 2012	Male	4	2				1	7
	Female	0	1				0	1
September 2012	Male		1	1		1		3
	Female		2	1		0		3
October 2012	Male	1		4			2	7
	Female	1		0			0	1
November 2012	Male		1	1	0	2		4
	Female		0	0	1	0		1
December 2012	Male			2		1		3
January 2013	Male	0	1	1		1		3
	Female	1	0	0		0		1
February 2013	Male	0	1	1	1		1	4
	Female	1	2	0	0		0	3
March 2013	Male	1	3	2	1			7
	Female	1	1	0	0			2
Total	Male	6	18	28	6	5	8	71
	Female	8	11	3	3	0	2	27

Tab. No. 2 Ligature Material used

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid Soft and Broad	62	63.3	63.3	63.3
Soft and Narrow	36	36.7	36.7	100.0
Total	98	100.0	100.0	

Discussion

1. The number of Post-mortem examination conducted in the mortuary of Mahatma Gandhi Memorial Hospital, Warangal are increasing by date. It increases the work load on the working staff of the mortuary. As the number is increasing the attention span on each Post-mortem examination are automatically compromises.
2. The number of hanging deaths in the calendar year 2012 were 78, in comparison with old studies where they were 107 cases in 2006; 110 in 2007 109 in 2008. The incidence of hanging deaths is comparatively reducing the recent past.
3. Male / Female ratio came as 2.63 : 1 in the present study. In the earlier study it was found to be 2 : 1. This says that the tendency to commit suicide by means of hanging is decreasing in females, which is a good sign to the society.
4. The vulnerable age group found to be 21 to 40 years, in whom the total number of deaths was 60%, in comparison to the old study where it was only 47%. Deaths due to hanging are reduced in the age groups of 41 to 60 years. The percentage in more than 61 years as increased to 10%. This shows the neglect shown on to the elderly people by their children and the blood relatives in the recent past.
5. Deaths occurring in the urban areas because of hanging are reduced from 22% to 17% made in the present study. There is a decline in the suicidal deaths due to hanging in rural population from 54% to 50%. There is little increase in the suburban population from 24% to 32.7%.
6. Many of the victims were labourers who are working either in the agriculture or construction works. In the present study professionals including the software personal are involved.

7. Illiteracy once again proved be the ignorance about the continuation of the life even in the crisis. It tolled 50% of hanging deaths which in fact less than the previous study where it was 76%. Unfortunately in the present study even graduates, professionals were also involved in hanging up to 11.2%. This shows the lack of clear understanding on the life even by the educated persons.
8. Married women were victimised more than men even in the present study. But there are no deaths found in the divorced persons in the present study. Unmarried men were more died then unmarried women. It indicates the increasing problems arising in the married women.
9. Almost all cases are died of suicidal attempts except for 2 who died of accidental hanging. This once again reinforces to the statement that ‘all hangings are to be considered as Suicidal unless otherwise proved, beyond all reasonable doubts’.
10. The low socio economic status was blamed earlier for committing suicides by hanging. But in the present study the prevalence of hanging deaths is seen more in middle socio economic strata. Deaths in high socioeconomic strata are considerably reduced in the present study from 10% to 1%.
11. The times of committing hanging is almost going parallel to the previous studies, in which it was found late night, early morning and evening are the vulnerable moments, in comparison with the afternoon and early nights.
12. Indoor was chosen by 80% of people and that too in bolted room which was closed from inside in many cases. In about 20% people who chose outdoor, were hanged to a tree branches or poles.
13. Incomplete hanging was seen in many cases as in 68.4%. This may be because of the elasticity of the ligature material used, which made the body to touch the ground. Complete hangings were mostly seen in outdoors especially who hanged to the top branches of the trees. This finding is almost similar to the previous studies.
14. Soft and broad ligature material as, saree, chunny, dhoti were used in 63.3% cases, which is in contrast to the previous studies. Soft, flexible and narrow material like plastic rope, electric wires,

nawarpatti, coir rope were used in 36.7% cases. This clearly shows about the easily accessibility of the ligature material to the victims.

15. Ligature mark was prominent in all cases. There was no case with inconspicuous mark on the neck. It was making a groove in 10.2% cases. It shows the duration of suspension of the body from the point of suspension.
16. The friction made by the ligature material on the neck structures left no injuries in the internal structures in many cases. But it left contusions in 29.6% cases, which shows slow asphyxiation resulting in the convulsions and mobility between the material and the underlying structures.
17. It was the social causes which outstood of all reasons for committing the suicide, which included failure in the love, examinations, and poverty etc. It followed by the psychiatric reasons, which included illness, ego clashes. Some of them had previous failure attempts also. Physical illnesses included pain abdomen, incurable diseases etc. Of course these reasons may not correct. But for inquest purposes these are highlighted. Most of them once have the psychiatric ailments underlying.
18. 6 victims left suicidal note in the scene of offence stating that nobody is responsible for their death. This fact shows their determination for committing suicide.

Conclusion

1. Post-mortem examination work load on the Department of Forensic Medicine of Kakatiya Medical College, Warangal is increasing by date
2. Magnitude of Hanging deaths is decreased to 4.27% of total Post-mortem examinations
3. Male to female ratio is 2.61 : 1
4. 60% of total hanging deaths are seen in the age

group of 21 – 40 years

5. 98% of total hanging deaths are Suicidal and rest of them are accidental.
6. Indoor hangings are more than outdoor hangings
7. Partial hangings are common than complete hangings
8. Soft and broad ligature hangings are more common than other ligature materials
9. Ligature mark was limited to skin in many cases. However inner neck structures are also injured in some of the cases
10. Reasons committing suicide were many. Social problems were outnumbering the physical and psychiatric problems
11. Very few persons left suicidal notes at the time of their death

Conflict of Interest- Nil

Source of Funding- Self

References

1. Narayan reddy k.s , the synopsis of forensic medicine and toxicology, 28 edition, chapter 13, mechanical asphyxia, page 176.
2. K S N Reddy. Essentials of Forensic Medicine and Toxicology, 11th Edition .
3. Krishan Vij. Textbook of Forensic Medicine and Toxicology, 5th Edition
4. World Health Organization. Global Burden of Disease. 2004.
5. K Jyothi Prasad, M Abdul Khalid, B Lakshmi Narayana, G Bhanu Prakash, D S Sujith Kumar, K Bhaskar Reddy Ligature Mark in Hanging – Gross and Histopathological Examination with Evaluation and Review, Indian Journal of Forensic Medicine & Toxicology, January-June 2017, Vol. 11, No. 1, 22-26.