

Retrospective Observational Study of Death in Partial Hanging Cases in Raigarh (C.G.) Region

Rajesh Ban Goswami¹, A. Dutta²

Abstract

Introduction: Hanging or self suspension is a type of violent asphyxial death which is caused by complete or partial suspension of body by the ligature material, encircling the neck and force of constriction being at least part of the weight of body. Sometimes it has been noticed that either feet or any part of body of the victim of hanging used to touch the ground or any other surface, which is known as partial hanging. The causative factors behind partial hanging are - (i) low point suspension and (ii) long ligature material. Such type of hanging cases are found in less number of cases and in most of the cases relative/ (s) of the deceased used to suspect the same as homicidal one. **Materials & Methods:** The present study was conducted in the department of Forensic Medicine & Toxicology at LAM, GMC Raigarh (C.G.) during the period from 1st April 2015 to 31st December 2017. During this period total numbers of autopsies performed were 1552, of which total number of hanging cases were 147 and partial hanging cases were 15 in number. The present study is retrospective observational study. The cases, where inquest report prepared by either police or by magistrate had clearly mentioned that either feet or any part of the body touches the ground or any other object, were only selected for the study. **Results & Observations:** In the present study 15 cases (10.20%) out of total 147 hanging cases, were partial hanging. Among total partial hanging cases, maximum number of cases (60%) belongs to 21-40 years age group. Males are more prone to commit suicide by hanging than females. In our study we have also found that suicide by hanging is more in urban (60%) than rural (40%) population. **Conclusion:** The cases of partial hanging are sometimes suspected to be homicidal in nature. Therefore before final opinion, all circumstantial evidences and chemical examiner report should be taken into consideration by the medico-legal expert. Also, in all these cases the viscera should be preserved by the autopsy surgeon, otherwise it will remain fatal to the prosecution case.

Keywords: Hanging; Asphyxia; Suicide; Partial/Incomplete hanging; Autopsy; Homicidal.

How to cite this article:

Rajesh Ban Goswami, A. Dutta. Retrospective Observational Study of Death in Partial Hanging Cases in Raigarh (C.G.) Region. Indian J Forensic Med Pathol. 2019;12(2):119-123.

Authors Affiliation: ¹Assistant Professor & Head, ²Demonstrator, Department of Forensic Medicine & Toxicology, Late Shri Lakhi Ram Agrawal Memorial Government Medical College, Raigarh, Chhattisgarh 496001, India.

Corresponding Author: A. Dutta, Demonstrator, Department of Forensic Medicine & Toxicology, Late Shri Lakhi Ram Agrawal Memorial Government Medical College, Raigarh, Chhattisgarh 496001, India.

E-mail: grajeshban@gmail.com

Received on 19.03.2019, **Accepted on** 16.04.2019

Introduction

Hanging: Hanging is a constriction of the neck by a ligature, the constricting force being applied indirectly to the ligature through the weight of the body [1]. It is one of the most common mode of painless death. There are several mechanisms of death in hanging, but death usually occurs due to asphyxia or cerebral anoxia or vagal inhibition. The effective killing potential with mortality is 80-85% in hanging cases. Hanging is almost always

suicidal. Homicidal hanging cases are extremely rare. Suicidal hanging is more common in India. Recent trends and statistics shows hanging to be the commonest mode of commission of suicide in India followed by poisoning [2].

Partial Hanging: Sometimes it has been noticed that either feet or any part of body of the victim of hanging used to touch the ground or any other surface, which is known as partial hanging. Aggrawal (2016) [3] has defined partial hanging as- "Partial hanging is that specialised form of hanging in which some part of the body is supported either by ground or some object other than the neck". Based on body part touching the ground or any other object partial hanging can be found in several positions like (i) standing, (ii) kneeling, (iii) sitting, (iv) reclining or (v) prone/ lying down. Among the Indian authorities Mahanta (2014) [4] and Umadethan (2016) [5] had pointed out the fact of low point suspension and long ligature material respectively as a causative factor behind partial hanging. Partial hanging is used to seen in less number of cases and relative/(s) of the deceased used to point towards homicidal one, but circumstantial evidences coupled with data revealed during autopsy can assist the law enforcing agencies to determine the truth. In the cases of suicide by partial hanging, the C.O.D. is asphyxia followed by hanging. An attempt has been made to find out comparison between complete hanging and partial hanging cases by means of analysing the data found in our study and matching the same with generalized cases of hanging in other studies and suggestive methods to avoid any confrontation.

Review of Literature

In Indian scenario Ravi Rautjiat el. (2008) [6], Kuchewar S.V. et al. (2014) [7], Mappalakayil (2017) [8], Nath et al. (2018) [9], had discussed regarding the issue of partial hanging. Apart from Indian scenario Chaudhary (2018) [10] from Nepal and Moorthy (2019) [11] from Malaysia also mentioned the incidents of partial hanging. Apart from published literatures, authoritative text books like Parikh (2014) [12] and Modi (2013) [13] had also mentioned about partial hanging.

Materials and Methods

The present retrospective observational study consists of 15 (fifteen) cases of partial hanging death out of total 147 cases of hanging during the period from April 2015 to December 2017. The data were collected from police inquest reports, medicolegal

autopsy reports and information gathered from relatives. In this study the subjects were included irrespective of caste, religion, dietary habits and socio-economic status.

Results and observations

Table 1: Year Wise Distribution

Year	Total P.M	No. of Hanging Cases	No. of Partial Hanging Cases	% of Partial Hanging Cases
2015	473	16	3	18.75%
2016	564	71	7	9.86%
2017	515	60	5	8.33%
Total	1552	147	15	10.20%

In our study 15 cases out of total 147 hanging cases were partial hanging i.e. 10.20% of total hanging cases (Table 1).

Table 2: Age Wise Distribution

Sl. No.	Age Group	No. of Victim
1	0-10	0
2	11-20	1
3	21-30	5
4	31-40	4
5	41-50	2
6	51-60	1
7	61-70	2
8	71 - Above	0
Total		15

Above table 2 shows that maximum number of cases (09) belongs to 21-40 years of age i.e. 60% of total partial hanging cases, while partial hanging cases were not found below 10 years and above 70 years.

Table 3: Sex Wise Distribution

Sl. No	Sex	Number of victim
1	Male	10
2	Female	5
Total		15

The study shows that males (66.67%) were more in number than females (33.33%) in partial hanging cases (Table 3).

Table 4: Distribution of Cases According to Residence

Sl. No	Trait(Urban/Rural)	Number of victim
1	Urban	9
2	Rural	6
Total		15

In our study 60% of the total numbers of victims

were from urban, while from rural area 40% victims were found (Table 4).

Table 5: Distribution of Cases Based on History

Sl. No	History	No. of Cases
1	Illness	03
2	Family dispute	02
3	Alcohol addiction	05
4	Financial dispute	01
5	Others	04
Total		15

Above table 5 shows that alcohol addiction was the most common back ground history found in deceased followed by other reasons, illness, family dispute and financial dispute.

Table 6: Type of Ligature Material

Sl. No	Type of Ligature Material	No. of Cases
1	Soft ligature material	06
2	Hard ligature material	09
Total		15

In maximum cases hard ligature material (60%) was used, while soft ligature material was used in 40% cases of partial hanging cases (Table 6).

Table 7: Distribution of Cases According to Site of Hanging

Sl. No	Site of Hanging	No. of Victim
1	Closed Area	15
2	Open Area	0
Total		15

Maximum number of partial hanging cases were found in closed area i.e area covered by roof. No case was recorded in open area i.e. area not covered by any roof (Table 7).

Table 8: Distribution of Cases According to Point of Suspension

Sl. No	Point of Suspension	No. of Victim
1	Angle attached with roof	01
2	Ceiling fan	02
3	Hook for Ceiling fan	01
4	Iron pipe attached to roof	01
5	Wooden bar attached to roof	10
Total		15

In maximum cases (10 cases) victim had preferred wooden bar attached to roof as point of suspension followed by ceiling fan (2 cases) (Table 8).

Table 9: Distribution of Cases According to Clothing Pattern

Sl. No	Clothing Pattern	No. of Victim
1	Fully clothed	09
2	Partially clothed	06
Total		15

In our study 60% of deceased were found with complete cloth and around 40% were found partially clothed (Table 9).

Table 10: Evidence of Dribbling of Saliva

Sl. No	Trait	No. of Victim
1	Evidence of Dribbling of Saliva found	10
2	Evidence of Dribbling of Saliva not found	05
Total		15

The table 10 shows that in 66.67% of cases, evidence of dribbling of saliva was found, which is a positive proof of suicidal hanging.

Table 11: P.M.I Distribution

Sl. No	P.M.I.	No. of Victim
1	0-12 hrs	2
2	12- 24 hrs	9
3	24- 48 hrs	3
4	48-96 hrs	1
5	More than 1 week	0
Total		15

The study shows that in maximum cases (73.33%) PMI was within 24 hrs (Table 11).

Table 12: P.M. Lividity Distribution

Sl. No	Area of Distribution	No. of Victims
1	Over back except pressure points	6
2	Over extremities (Hands, Feet etc.)	8
3	CBD*	1
Total		15

*Cannot be determined

In most of the cases i.e. 53.33% P.M. Lividity was found over extremities, which is a positive corroborative sign of A.M. hanging, while in 40% cases P.M. Lividity was found over back, which suggests that the body was shifted from it's initial position (Table 12).

Table 13: Fracture of Hyoid bone and Thyroid cartilage

Sl. No.	Trait	Number of Victim
1	Intact Hyoid bone	14
2	Intact Thyroid cartilage	15
2	Fracture of Hyoid bone	01
3	Fracture of Thyroid cartilage	00

In 93.33% of partial hanging cases, hyoid bone was found intact. Among 15 cases hyoid bone was found fractured in only 01 (one) case. Thyroid cartilage was found intact in all cases (Table 13).

Table 14: Type of Hanging

Sl. No	Trait	Number of Victim
1	Ante Mortem	14
2	Post Mortem	0
3	CBD	1
Total		15

In maximum number of cases (93.33%) partial hanging was found to be ante-mortem in nature. In our study one case of partial hanging was found after 48 hours and in the stage of decomposition, so it was not possible to determine whether the hanging was AM or PM (Table 14).

Discussion

In our study 15 cases out of total 147 cases of hanging were partial hanging cases i.e. 10.20% of total hanging cases. This data closely matches with the study of Nityanand Kumar et al. (2016) [14] at Ranchi, where 9 out of 77 cases of hanging were partial hanging i.e. 11.69%. The study of Dinesh Rao (2016) [15] also shows that 12% cases of hanging were partial hanging cases. In our study maximum number of cases (09) belongs to 21-40 years of age i.e. 60% of total partial hanging cases. This data also closely matches with the study of Nityanand Kumar et al. (2016) [14], where 58.44% of hanging cases belongs to age group of 21-40 years. Even in the study of Dinesh Rao (2016) [15], where 81.82% of total cases of death due to suicidal hanging (216 out of 264) belongs to age group of 21-40 years. Therefore it can safely be concluded that the persons in age group of 21-40 years are more prone to commission of suicide. The study of Nattapong Tulapunt et al. (2017) [16] at Bangkok, Thailand reveals the fact that males are more prone to commit suicide by hanging than females. The study at Raigarh (CG), also shows same trends in partial hanging i.e. males outnumbering females. The study of Rahman ZM (2013) [17] at Sir Salimullah Medical College (SSMC), at Bangladesh also projected the fact that commission of suicide by hanging is more in urban (68.27%) population than rural (31.73%), which closely matches with our study. The study of Rahman ZM (2013) [17] at Bangladesh had pointed out the causes behind suicidal hanging to be family problems, failure at examination, insanity, incurable illness and drug

addiction. Long ago the study of Gupta and Singh (1981) [18] at Lucknow also pointed to the same factors considered as triggers for suicide. These factors also matches with the factors found in our study. The study of Nityanand Kumar (2016) [14] at Ranchi, shows that soft and hard ligature materials used for hanging were 48.05% and 51.95% respectively. This data also nearly matches with our study, where in soft and hard ligature material used were 40% and 60% respectively. In our study maximum number of partial hanging cases were found in closed area i.e area covered by roof, which also matches with the study of Nityanand Kumar (2016) [14] at Ranchi, where maximum number of cases (92.21%) were also found in closed area. In our study hyoid bone was found intact in 93.33% of the cases, which also matches with the observation of Rao [19], where it was mentioned that the hyoid bone remains intact in 90-95% cases of hanging. In our study most of the victims had chosen wooden bar attached to roof as point of suspension i.e. use of long ligature material, which can be corroborated with the findings of Umadethan (2016) [5].

Conclusion

It has been observed from the different partial hanging cases that the relative/ (s) of the deceased used to point out towards suspected homicide. Even in *Babu & Ors. v State of Orissa* [20], while acquitting the appellants on benefit of doubt Orissa High Court division bench comprising B. Panigrahi, P. Misra JJ had mentioned- "5.... In case of Partial hanging the deceased might have committed suicidal hanging in a standing position....". Therefore it can safely be concluded that all partial hanging cases always cannot be suicidal one. Therefore a medico-legal expert who had conducted autopsy should not opine the matter as suicidal one unless and until going through the circumstantial evidences and chemical examiner report. Sometimes non preservation of viscera coupled with perfunctory P.M. report may bring judicial stricture for the autopsy surgeon. Long ago Madhya Pradesh High Court at Jabalpur in *Ashok Dubey (Dr.) V. State of M.P.* [21] had criticized the concerned autopsy surgeon for perfunctory autopsy coupled with non preservation of viscera. Recently in *Dev Kanya Tiwari V. State of U.P.* [22], while acquitting the appellant from the charge of murder of her Son-in-Law, apex court division bench comprising N.V. Ramana and S Abdul Nazeer JJ. had observed that non-preservation of viscera by the doctor remains fatal to the prosecution case.

References

1. I. Gordon, H. A. Shapiro, S. D. Berson, *Forensic Medicine A Guide to Principles*, 3rd Edn, London, Charchil Livingstone, 1988.p.110.
2. Sachil Kumar et al.; Trends in rates and methods of suicide in India, *Egyptian Journal of Forensic Sciences*. 2013;3:75–80.
3. Anil Aggrawal; *Forensic Medicine & Toxicology for MBBS*, 1st Edn, New Delhi, Avichal Publishing Company, 2016.p.272.
4. Putul Mahanta; *Modern Text Book of Forensic Medicine & Toxicology*, 1st Edn, New Delhi, Jaypee Brothers Medical Publishers (P) Ltd, 2014.p.343.
5. B. Umadethan; *Principles and Practice of Forensic Medicine*, 2nd Edn, New Delhi, CBS Publishers & Distributers Pvt. Ltd, 2016.p.254.
6. Ravi Rautjat et al., An Unusual Partial Hanging Using Cycle Rickshaw: A case report *Indian Journal of Forensic Medicine and Pathology*. 2008;1(2):53-55.
7. Kuchewar S.V. et al. A Rareposition in Partial Hanging - A Case Report, *IOSR Journal of Dental and Medical Sciences*. 2014;13(5):84-87.
8. Mappalakayil T. Importance of Low Point of Suspension in Suicidal Hanging *J. Evid. Based Med. Healthc*. 2017;4(15):874- 76.
9. Nath S, Pratihari HK, Can One Hang on Kneeling with Tied-Leg and Mouth? *J Forensic Crime Stu*. 2017;2:201.
10. Chaudhary Gopal Kumar. A Rare Case of Hanging with a Loop of Shawl and Partial Suspension of the Body - An Autopsy Case Report, *Int. Jr. of Sci. Res*; 2018;7(1):685-86.
11. Nataraja Moorthy T, Footprint Evidence Solved the Mystery in a Suspicious Death: A Rare Case Report. *Peer Re J Foren & Gen Sci*, 2019;3(2):183-85.
12. C.K. Parikh; *Parikh's Textbook of Medical Jurisprudence, Forensic Medicine and Toxicology for Classrooms and Courtrooms*, 6th Edn, Reprint 2014, New Delhi, CBS Publishers and Distributers Pvt. Ltd, p.3.43.
13. K. Kannan & Dr. K. Mathiharan (Eds); *Modi- A Text Book of Medical Jurisprudence and Toxicology*, 24th Edn, 2nd Reprint, Gurgaon, Haryana, 2013, Lexis Nexis, p.445.
14. Nityanand Kumar et al. Demographic Profile of Hanging Cases Autopsied in Rims, Ranchi, *Global Journal for Research Analysis*; 2016;5(3):119-21.
15. Dinesh Rao, An autopsy study of death due to Suicidal Hanging - 264 cases, *Egyptian Journal of Forensic Sciences*. 2016;6:248–54.
16. Nattapong Tulapunt et al. Hanging Fatalities in Central Bangkok, Thailand: A 13-Year Retrospective Study, *Clinical Medicine Insights: Pathology*, 2017 <https://doi.org/10.1177/1179555717692545>.
17. Rahman ZM et al. Suicide By Hanging: An Analysis of 312 Cases, *KYAMC Journal*. 2013;4(1):331-36.
18. Gupta SC, Singh H. Psychiartric illness in Suicidal attempters. *Ind J Psychiatry*. 1981;23(1):69-74.
19. N. G. Rao; *Textbook of Forensic Medicine and Toxicology*. 2nd Ed., New Delhi, Jaypee Brother's Medical Publisher's Pvt Ltd; 2010.p.203.
20. II (2002) DMC 659: <http://indiankanoon.org/doc/1238858/>.
21. 1980 Jab LJ 250: 1980 M.P.L.J. 300.
22. Criminal Appeal No 716 of 2016, decided on 12th March 2018.

