



A MEDICOLEGAL STUDY OF DEATH DUE TO HANGING IN VARANASI REGION

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ABSTRACT The incidence of hanging cases differs as per the variation in the community, geographical location and socio-economic condition etc in all over the world. The present study is done here, in the view to gain further knowledge and insight in to epidemiological and medicolegal trend of asphyxia death due to hanging to help in the process of crime investigation and administration of court of justice. So my present study was done between the duration of 1st January 2016 to 30th June 2017. 137 Cases were selected for the present study from dead bodies brought to the department of forensic medicine, institute of medical sciences, BHU Varanasi for medico legal autopsy examination, from the various police stations of Varanasi district.

KEYWORDS : Asphyxia, Autopsy, Forensic Pathologists, Court of Justice.

Introduction: The incidence of hanging cases differs as per the variation in the community, geographical location and socio-economic condition etc in all over the world. In case where there are no objectives, history, witnesses, then forensic pathologist give his expertise on the basis of the autopsy findings alone. The present study is done here, in the view to gain further knowledge and insight in to epidemiological and medicolegal trend of asphyxia death due to hanging to help in the process of crime investigation and administration of court of justice.

Material and method: Incidence of violent asphyxia death due to hanging done between the duration of 1st January 2016 to 30th June 2017. 137 Cases were selected for the present study from dead bodies brought to the department of forensic medicine, institute of medical sciences, BHU Varanasi for medico legal autopsy examination, from the various police stations of Varanasi district.

Observation and Discussion: In our study, majority of victims of violent asphyxial deaths belonged to age group 21-30 years, 61 (44.52%) followed by age group 31-40 years, 32 (23.35%) and then by age group 11-20 years(16.04%). In case of female victims the maximum number of cases were found in the age group 21-30 years, 27 (19.70%) followed by 11-20 years, 11 (8.02%). The ratio of violent asphyxia deaths among male and female is 63.5% and 36.5% i.e. 1.74: 1 ratio respectively. There was no female victim in the age groups of below 11 years and above 70 years. Among male victims, no case was found below 11 years. **Mohan Kumar et al (2006)** in a study in Manipal (India) found that the most affected age group was 20-29 years in hanging¹. **Uzun et al (2007)** reported that no case was found in the age below 10 and the least number of the cases (0.4%) was found in the age above 80 years². **Sharma et al (2008)** the age group of 21-30 years, was most affected group in Northern India (Chandigarh)³.

It is observed that ligature materials used in hanging by victims, are mostly synthetic cloth (sari, dupatta) 40.15%, followed by ropes 37.22%. **Bastiya and Kar** reported that half (50.9%) of the attempts were made using dress materials like sarees, dupatta and dhotis; 47.2% used ropes and rest used other materials in hanging⁴. **Shrivastava(1984)**, **Singh et al (2006)** and **Uzun et al (2007)** who found rope is most common ligature material^{2,5,6}.

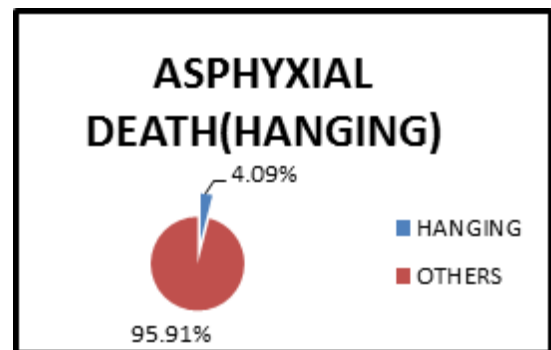
In our study, it is observed that cases of partial hanging is most common (52.24%) followed by complete hanging, 37.96% cases. We found atypical hanging cases are more common (74.45%) than typical hanging cases (24.32%). In the study by **Srivastava (1984)**, 50.0% cases were of partial hanging⁵, while **Rajesh Rai(2010)** found only 24.8% cases of partial hanging in his study⁷. Knot was observed most commonly on the left side of neck in i.e. atypical type cases as mentioned by (**Polson 1985, Rajesh Rai 2010, Nandy 2014**)^{7,8,9}.

It is observed that running noose are more common (68.61%) than

fixed knot (31.38%). It has also been observed that most of ligature mark were discontinuous 126 (91.97%), however continues ligature mark was present in remaining 11 (8.02%) cases. Marks were oblique in majority of cases, 129 (94.16%) and horizontal in rest 8 (5.83%). **Srivastava 1984** in his study found continuous ligature in 13.45% cases and non-continuous in 86.36% cases⁶. Similar pattern was observed by **Sengupta (1972)**¹⁰ and **Polson (1985)**³. The ligature was placed above the level of thyroid cartilage in 88% of cases (**Singh et al, 2006**)⁶.

Observation and Result:

Total no autopsies	cases	percentage
3344	137	4.09%

**Age and sex wise distribution of victim**

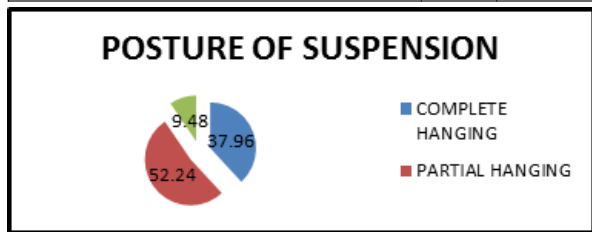
Age group(in years)	male		female		total	
	number	%	number	%	number	%
11-20	11	8.02	11	8.02	22	16.04
21-30	34	24.81	27	19.70	61	44.52
31-40	25	18.24	7	5.10	32	23.35
41-50	11	8.02	4	2.31	15	10.94
51-60	4	2.31	1	.72	5	3.64
61-70	1	.72	0		1	.72
>70	1	.72	0	0	1	.72
TOTAL(N=137)	87	63.50	50	36.49	137	100

Frequency of ligature material used

LIGATING MATERIAL	Number	%
ROPE(PLASTIC, NYLON, JUIT)	51	37.22
COTTON CLOTH(TOWEL, DHOTI)	17	12.41
SYNTHETIC CLOTH(SAREE,DUPATTA)	55	40.15
ANY OTHER(ELECTRIC WIRE, BELT ETC)	6	4.38
NOT KNOWN	8	5.84

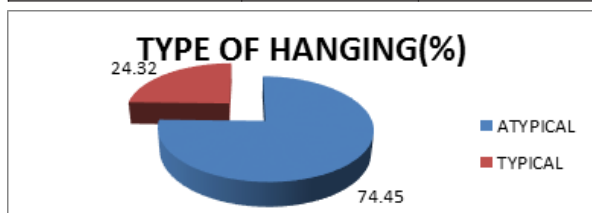
Type of hanging on the basis of position of feet

Posture of suspension	Number	Percentage
FEET NOT TOUCHING THE GROUND	52	37.96
FEET TOUCHING THE GROUND	72	52.24
NOT KNOWN	13	9.48



TYPE OF HANGING ON THE BASIS OF POSITION OF KNOT

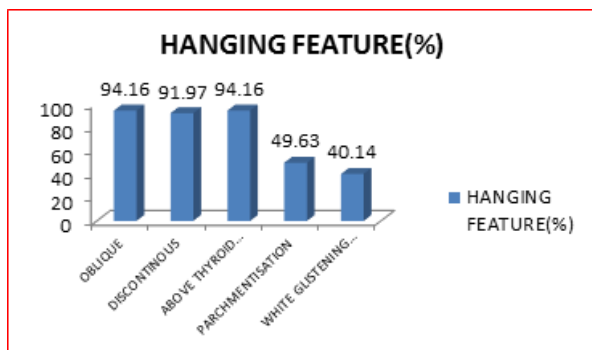
FEATURE OF KNOT	NUMBER	PERCENTAGE
ATYPICAL HANGING	102	74.45
TYPICAL HANGING	35	24.32



Type of knot

FIXED KNOT	43	31.38%
RUNNING NOOSE	94	68.61%

FEATURE OF LIGATURE MARK IN HANGING



Conclusion: In our study, total of 3344 cases were autopsied, out of those 137 cases were of violent asphyxial deaths due to hanging comprising 4.09% of the total studied cases. In our study, majority of cases were males with male: female ratio was 1.74:1 respectively. It is observed that ligature material was used in hanging by victims, It is observed that synthetic cloth (sari, dupatta) are used mostly 40.15% followed by ropes 37.22%. In our study, it is observed that partial hanging is most common (52.24%) cases followed by complete hanging (37.96%) cases. We found atypical hanging cases are more common (74.45%) than typical hanging (24.32%) cases. It is observed that running noose are more common (68.61%) followed by fixed knot (31.38%). It has been observed that most of ligature mark were discontinuous 126 (91.97%), however continues ligature mark was present in remaining 11 (8.02%) cases. Marks were oblique in majority 129 (94.16%) and horizontal in rest 8 (5.83%).

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