

# Changes in neck structure due to compression of neck in medicolegal autopsy – A retrospective study

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## Abstract

Deaths due to compression of neck constitutes a major portion of unnatural deaths in day to day medico legal practice. The cases of such death, if analyzed are found to be either due to suicidal compression or homicidal compression of the neck and very rarely accidental compression. In most of the cases of death due to compression of the neck irrespective of its suicidal, homicidal or accidental nature, death usually occurs due to violent asphyxia. A retrospective study of medicolegal autopsy conducted between 1<sup>st</sup> January 2011 to 31<sup>st</sup> December 2012 at Dept. of Forensic Medicine, Silchar Medical College, Silchar, Assam carried out in an attempt to know the incidence and other aspects of Asphyxial deaths. During this period there were 1326 deaths out of which 219 deaths were due to compression of neck. The most common form of death due compression of was suicidal compression of neck followed by homicidal. The incidences were more in males than females. These cases were studied to know age and sex distribution of the victims. In this study, we found that among deaths due to compression of neck suicidal compression were more (89.50%) followed by homicidal compression (10.50%).

**Key word:** Asphyxial deaths, suicide, homicide, autopsy.

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## INTRODUCTION

The word asphyxia is of Greek derivation and means “pulselessness”. The term asphyxia has been applied to condition in which the supply of oxygen to the blood and tissues has been reduced appreciably below the normal working level by some interference with respiration. But in forensic pathology setting, asphyxia means interference with the exchange of oxygen and carbon dioxide in the body. Hanging and strangulation make up a category of Asphyxial deaths characterized by external pressure on

the neck that compresses the airway and/ or blood vessels supplying and draining blood to the head. The carotid arteries are compressed between the force applied to the neck and the hard anterior surface of the cervical vertebrae. Hanging involves compression of the neck structure by a ligature placed around the neck that is constricted with the help of all or part of the body weight. Strangulation involves compression of the neck structures by a force other than the body’s own weight by manual squeezing or by application of a ligature. An additional asphyxiating factor found in case of hanging and strangulation is obstruction of the laryngeal inlet by upward displacement of tongue caused by constricting force around the neck. It is easy to diagnose hanging when one finds the classical features. However all features are seldom present together. Literatures insist on presence of throat skeleton fracture as a golden sign of fatal neck pressure like hanging, strangulation etc. Due to population explosion, poverty and increasing stress and strain in our daily life, we come across cases of suicides, homicides and accidents.

## AIMS AND OBJECTIVE

1. To evaluate the incidence of hanging and strangulation.
2. To evaluate the common victims of hanging and strangulation as regards to their age, sex, religion, locality, seasonal variation, position of the knot etc.

## MATERIAL AND METHODS

- The autopsies conducted at Forensic Medicine Dept. Silchar Medical College, Silchar between the 1<sup>st</sup> January 2011 to 31<sup>st</sup> December 2012 were considered for retrospective study.
- The study consisted of 1326 cases that came to this department for postmortem in the year 2011 and 2012 out of which 219 cases of death due to compression of neck
- The data were collected from police requisition form and postmortem report.
- On the basis of data analysis and observation, results were drawn and discussed

## RESULTS AND DISCUSSION

The total numbers of autopsies conducted during the study period were 1326, of which 219 cases were due to compression of neck. The incidence of suicidal compression 196 (89%) is more than homicidal compression 23 (11%) of the neck. In case homicidal compression of neck, ligature strangulation 19 (83%) is more common than manual strangulation 4 (17%). The incidences of death due to compression of neck among males were 140 (64%) and in female were 79 (36%). In case of homicide incidence of male were 17 (74%) and in female 6 (26%). In case of suicide incidence of male were 123 (63%) and in female were 73 (37%). Homicidal compressions of neck were more in age group of 20-30 years (35%) followed by 30-40 years (26%) and 40-50 years (18%) respectively. Suicidal compressions of neck were more in age group of 20-30 years (33%) followed by 10-20 years (23%) and 30-40 years (17%) respectively. Homicidal compression of neck were more in Hindu religion 9 (39%) followed by Muslim 6

(26%). Suicidal compression of neck were more in Hindu religion 157 (80%) followed by Muslim 34 (17%). Homicidal compression of neck were more in rural area 14 (61%) followed by urban area 1 (4%). Suicidal compression of neck were more in rural area 145 (74%) followed by urban area 46 (23%). Position of knot in case of suicidal compression of neck were found more in occipital 98 (50%) followed by left mastoid 56 (29%) and right mastoid 41 (21%). Among all these registered fatal compression of neck cases, suicidal compression was the most common one method which is found to be more prevalent among male in comparison to females, 20-30 years of age grouped. The disparity between males and females in suicide rates has been most apparent in this study. Study has shown that people belonging to 20-30 age groups were also common victim in other countries.

## CONCLUSION

- The numbers of suicidal compression of neck cases were found increasing.
- Males and females are both exposed to such stresses, but in this study it seem that being a male dominated society and more exposure to external environment, such cases are commonly seen in males.
- Due to repeated physical and mental torture, they go beyond threshold level of self constrain and commit suicide by easily available ligature material. This tendency was found more in young generation of people.
- Poverty, lack of employment, family problems, defamation and alcoholism are the main reason of suicidal cases in this particular generation of people.
- A well designed and comprehensive programme is needed to identify the causative factors and preventive of suicidal behaviors.
- Appropriate education, influencing the media in their portrayal of suicidal news, reporting method, involvement of young generation in encouraging activities may reduce the suicidal death by hanging in future.

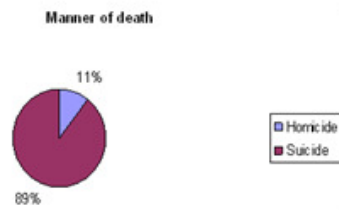


Figure 1: Manner of death

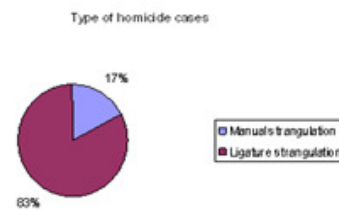


Figure 2: Type of homicide cases

Sex ratio of homicidal cases



Figure 3: Sex ratio of homicidal cases

Sex ratio of suicidal cases



Figure 4: Sex ratio of suicide cases

Age variation in homicidal cases

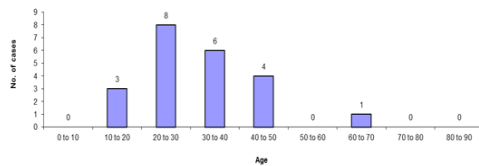


Figure 5: Age verification in homicidal cases

Age variation in suicidal cases

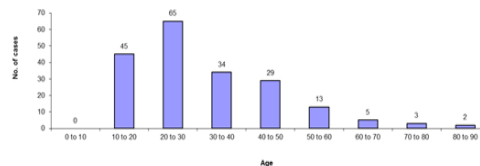


Figure 6: Age verification in suicide cases

Religion diversity of homicidal cases

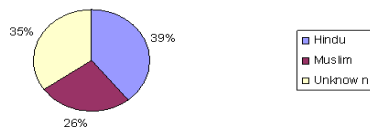


Figure 7: Religion diversity of homicidal cases

Religion diversity of suicidal cases

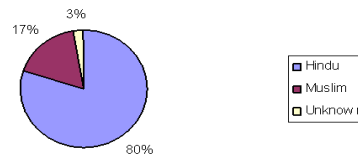


Figure 8: Religion diversity of suicidal cases

Locality of homicidal cases

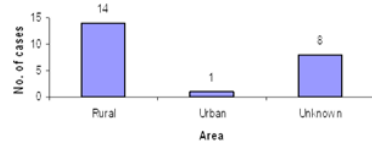


Figure 9: Locality of homicidal cases

Locality of suicidal cases

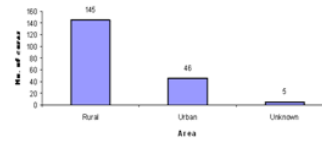


Figure 10: Locality of suicide cases

Position of knot in suicidal cases

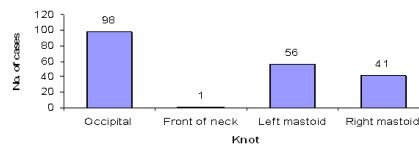


Figure 11: Position of knot in suicidal cases

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