Original Research

Asphyxial Deaths: An Autopsy Based Study in Dr. B.R. Ambedkar Medical College, Bengaluru

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Abstract

A one year prospective study was conducted at mortuary of department of Forensic medicine, Dr. B.R. Ambedkar medical college, Bengaluru from January 2015 to December 2015. A total of 255 cases due to mechanical asphyxia were evaluated. Asphyxial deaths were 38.28% of total autopsies and number of males (65.09%) was more than females (34.90%) in a ratio of 1.86:1. In this study we found that hanging (81.17%) was the most common type of asphyxial death followed by drowning (13.72%), traumatic asphyxia (2.74%), strangulation (1.56%) and smothering (0.78%). The most common age group involved was 21 - 30 years (40.78%) followed by 31 - 40 years (22.74%).

Key Words: Asphyxial deaths, Autopsy, Hanging, Drowning, Strangulation.

Introduction

Literally, the term asphyxia denotes absence of pulsation (Pulselessness), though its usage in Forensic medicine has generally come to mean a lack of oxygen. Actually, asphyxia is best described as an interference with respiration due to any cause-mechanical, environmental or toxic.[1] In forensic context, asphyxia is usually obstructive in nature, where some physical barrier prevents access of air to lung. This obstruction can occur at any point from the nose and mouth to the alveolar membranes, other conditions in which the body cannot gain sufficient oxygen may occur without any obstruction to the cells of the body. It is now surprising that clinical and pathological features of many different types of asphyxia vary. [2]

Asphyxial deaths are of common occurrence and classified as Hanging, Drowning, Strangulation, Suffocation and Traumatic asphyxia. The hanging and drowning are commonly seen in suicidal cases while strangulation including throttling is homicidal. In addition to these accidental compression or trauma to chest that prevent in respiratory movement, known as traumatic asphyxia or crush injury is also one of the cause of violent asphyxial death. [3]

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Materials and Methods

The present prospective study of asphyxial deaths is carried out at mortuary of department of Forensic medicine, Dr. B.R. Ambedkar medical college, Bengaluru from January 2015 to December 2015. The data collected was recorded on a predesigned proforma, tabulated and compared with similar studies by other authors. The cases were studied to know the incidence of asphyxial deaths with respect to age group, sex and type of deaths.

Results and Discussion:

In the present study, a total of 666 cases were subjected to autopsy. Among them 255

cases were related to asphyxial deaths which accounts for 38.28% of all cases autopsied. The percentage of asphyxial deaths vary from place to place depending on various socio-economical and geological factors. In our study asphyxial deaths accounts for 38.28% of all bodies autopsied. In a study conducted by Dr. Ashwini Narayan.K et al, the asphyxial deaths accounted for 20.5% of autopsies performed,[4] whereas it accounts for 19.14% in a study conducted by Srinivasa Reddy P et al.[5] In a study conducted by Abhinandana R et al at Raichur, asphxial deaths accounted for 6.9% of all cases autopsied.[6]

The incidence of asphyxial deaths among males were 166 (65.09%) deaths and in females were 89 (34.90%) deaths, with male to female ratio of 1.86:1. Similar finding were also observed in a study conducted in Kolhapur district of Maharashtra, in which incidence of deaths due to asphyxia was more in males (61.3%) than in females (38.7%).[7] Ours being a male dominated society and more exposure to competitive and stressful society, asphyxial deaths were commonly seen in males.[6]

Incidence of deaths due to asphyxia was maximum in age group of 21 - 30 years (40.78%) followed by 31 - 40 years (22.74%) and 11 - 20 years (13.72%) respectivelyas shown in Table 1. Incidence of deaths due to asphyxia was minimum in extremes of age. At age group of 1 - 10 years the incidence was 9 (3.52%) and at age group of 61 - 70 years the incidence was 7 (2.74%). No case of deaths due to asphyxia reported after 70 years.

21 - 30 years age group is most commonly affected in the present study (104 cases). In a study by Patel-Ankur P et al, 32.98% cases were seen in 21 - 30 years age group.[8] Whereas in a study conducted by Neha Chaurasia et al, 21 - 30 years group were more prone to violent asphyxial deaths (35.79%).[9] Since this age group was more active socially, physically, economically and emotionally, it's quite natural to have more asphyxial deaths among this age group.[6]

Table 1: Age and sex wise distribution of Asphyxial deaths.

Age groups	Male	Female	Total	(%)
1 – 10 years	07	02	09	3.52
11 – 20 years	22	13	35	13.72
21 – 30 years	58	46	104	40.78
31 – 40 years	42	16	58	22.74
41 – 50 years	25	04	29	11.37
51 – 60 years	08	05	13	5.09
61 – 70 years	04	03	07	2.74
Total	166	89	255	100%

In our study, suicidal deaths accounted for 219 cases (85.88%), whereas accidental deaths accounted for 30 cases (11.76%) and 6 cases (2.35%) were of homicidal in nature.

In the present study, most common type of asphyxial death was hanging (81.17%) followed by drowning (13.72%). Traumatic asphyxia accounted for 7 deaths (2.74%), whereas strangulation and smothering accounted for 4 (1.56%) and 2 (0.78%) deaths respectively. Patel-Ankur P et al reported hanging in 82.48%, strangulation in 14.43% and drowning in 3.09% cases.[8] Abhinandana R et al reported hanging in 46.80%, drowning in 44.68%, strangulation in 2.12%, throttling in 4.25% and traumatic asphyxia in 2.12% cases.[6] Asphyxia is preferred by victims as it gives immediate painless death without any expenses. In western countries victims search information about suicide techniques on internet. This scenario is still not reported in India.[7]

In the present study, hanging was the predominant type of asphyxial death - 207/255 (81.17%) and was found in 100% of suicidal deaths. The majority of victims of suicidal hanging were male 130/219 (59.36%) and females were 77/219 (35.15%). Incidence of suicidal deaths due

to hanging were highest in the age group of 21 - 30 years - 93/219 (42.46%) followed by 31 - 40 years age group - 51/219 (23.28%).

Table 2: Type of Asphyxial deaths between Males and Females

Asphyxial death	Male	Female	Total (%)
Hanging	130	77	207 (81.17%)
Drowning	25	10	35 (13.72%)
Strangulation	03	01	04 (1.56%)
Smothering	02	00	02 (0.78%)
Traumatic asphyxia	06	01	07 (2.74%)
Total	166	89	255 (100%)

The two victims of ligature strangulation were victims of homicide and both were males, with one belonging to 11 - 20 years age group and other of 41 - 50 years age group. In our study, there were two victims of throttling, one male of 51 - 60 years age group and other a female of 21 - 30 years age group. Extravasation of blood in sub-cutaneous tissues of neck, laceration of strap muscles, thyroid fracture and cricoid fracture were noted in all these cases.

Table 3: Type of Asphyxial deaths

Type of Asphyxial deaths	Cases	Percentage (%)
Hanging	207	81.17
Strangulation	04	1.56
Drowning	35	13.72
Smothering	02	0.78
Traumatic asphyxia	07	2.74
Total	255	100%

In the present study, drowning accounted for 13.72% of total asphyxial deaths. Amongst these, 12 cases were of suicidal drowning and 23 cases were of accidental drowning. Male preponderance was noted (71.42%) when compared to females (28.57%). The high incidence of drowning among males may be due to their life style which causes them to confront dangers without thinking that death may result.[10] Similar findings were noted by other authors. [5,6,10]

Table 5: Manner of Asphyxial deaths

Manner of asphyxial deaths	Cases	Percentage (%)
Suicidal	219	85.88
Homicidal	06	2.35
Accidental	30	11.76
Total	255	100%

Conclusion

Prospective study of 255 cases of death due to asphyxia at mortuary of department of Forensic Medicine, Dr. B.R. Ambedkar medical college, Bengaluru during period January 2015 to December 2015 showed that hanging is the most common type of asphyxia death followed by drowning. Death due to asphyxia was most common in the age group of 21 - 30 years with male predominance. Manner of asphyxial deaths was suicidal, followed by accidental and homicidal. The number of suicidal hanging cases is increasing day by day. Appropriate education, influencing the media in their portrayal of suicidal news, reporting method, involvement of youngsters in healthy activities may reduce the rate of suicidal death by hanging. Accidental drowning can be prevented by using protective covering on well, protective fences around lake and using danger signs at deep water in rivers.[5,7]

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