ASPHYXIAL DEATHS: A FOUR YEAR RETROSPECTIVE STUDY IN PESHAWAR

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ABSTRACT

Objective: The study provides epidemiological analysis of autopsy record on asphyxial deaths and different methods used to carry it out.

Methodology: It was a retrospective (descriptive) study done at the Department of Forensic Medicine and Toxicology, Khyber Medical College Peshawar. Analysis of autopsy record was done and cases of asphyxial deaths and the cause of asphyxia was noted. The data covers a period from January 2009 to June 2012.

Results: A total of 3,265 (males n=2839, Females n= 426) cases were presented for autopsy to Forensic Medicine and Toxicology Department of Khyber medical college Peshawar and 130 deaths were due to asphyxia compared with 2370 deaths due to firearm. Homicide was the most common manner of death. 89 cases were males and 41 were females. Approximate ages of the autopsies conducted were 0-19 years n= (18.2%), 20-40 years n= (64.5%), 41-60 years n= (13%) and 61 or above n=4 (3.0%). Strangulation was found to be the most common method used.

Conclusion: Asphyxial deaths are not as common as firearm deaths in Peshawar. Homicide is the most common method of death. The findings may be helpful for the security agencies in investigation of asphyxial deaths.

Keywords: Asphyxia, Autopsy, Homicide

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INTRODUCTION

The word asphyxia is defined as suffocation as a result of physical blockage of the airway or inhalation of toxic gases, resulting in lack of oxygen and unconsciousness. The origin of the word asphyxia is early 18th century. Many case reports are available in literature about asphyxial deaths as they can be sometimes very challenging and reveal stunning results to the forensic experts[1-3]. In the past, the Department of Forensic Medicine and Toxicology usually presented reports on homicidal cases and various other topics like firearm deaths but a separate analysis of only asphyxial deaths was not done till now. In this article, an epidemiological report of methods used in asphyxial deaths during four years are reported. This study would help us to compare the statistics of Peshawar with other cities and would be used in future reports to monitor the progress of security conditions in Peshawar. Asphyxial deaths are not as common as deaths due to firearm in Khyber Pukhtunkhwa but we have obtained some useful results in the study which can even help security agencies in investigating cases like these.

METHODOLOGY

This was a retrospective descriptive study conducted in Department of Forensic Medicine and Toxicology, Khyber Medical College, Peshawar. It was based on analysis of the autopsy record of cases reported to the department form January 2009 to June 2012. The study includes autopsy data related to asphyxial deaths only. The Forensic Medicine and Toxicology Department performs autopsies of police stations of Peshawar district. Cases are referred by both urban and rural police stations of Peshawar. Diagnoses i.e., cause and manner of death was confirmed by performing autopsy and wherever necessary, a radiologist was consulted especially in cases involving firearms injuries also. Tools used by radiologists were X-rays to look for prevertebral

soft tissue thickness, misalignment of cervical vertebrae and CT scan/MRI to look for ligamentous injuries and hemorrhages.

The data was grouped according to region, gender, age, manner of death (homicidal, accidental or suicidal)

and types of material used or the causation agent for asphyxia in each accidental, suicidal and homicidal case.

Data entry and analysis was done by SPSS 16.0

RESULTS

In study period (January 2009 to April 2012), a total of 3,265 (males n=2,839, Females n= 426) cases were presented for autopsy to forensic and toxicology department Khyber medical college Peshawar. Among them asphyxia deaths autopsies were selected for further study. A total of 130 cases were due to asphyxia. Among them, the majority were males n=89 and 41 were females. Approximate ages of the autopsies conducted were 0-19 years n= (18.2%), 20-40 years n= (64.5%), 41-60 years n= (13%) and 61 or above n=4 (3.0%). Most cases were reported from Badha Bair n=28, followed by Chamkani n=27, Khazana n=23, Daudzai n=15, Tatara=10, Pahari Pura n=7, Matani n=4, Matra n=6 , Hayatabad n=5, Tehkal n=5.

The most common manner of death was homicide (Table 1). Cross tabulation of methods used for asphyxial deaths and manner of death are shown in Table 2.

Table 1: Cross tabulation: Sex and Manner of death

		Manner			
	Sex	Accidental	Homicidal	Suicide	Total
1.	Male	3	82	4	89
2.	Female	0	40	1	41
3.	Total	3	122	5	130

Table 2: Method vs Manner

	Method		Manner			
	Weapon/method	No (%)	Accidental	Homicidal	Suicide	Total
1	Strangulation by Ligature	90 (69.2%)	0	90	0	90
2	Hanging	5 (3.8%)	0	2	3	5
3	Drowning	3 (2.3%)	1	2	0	3
4	Throttling	3(2.3%)	0	3	0	3
5	Poisoning	4 (3.1%)	0	2	2	4
6	Miscellaneous	7 (5.4)	0	7	0	7
7	Compressive asphyxia	2 (1.5%)	2	0	0	2
8	Smothering	14 (10.8%)	0	14	0	14
9	Undetermined	2 (1.5%)	0	2	0	2
10	Total	130 (100%)	3	122	5	130

DISCUSSION

Asphyxial deaths make a considerable portion of our autopsies but are not reported in detail from various forensic institutes. From July 2002 to June 2003, the department reported that 2.55% of all homicides in Peshawar were due to strangulation[4]. In this four year study, the rate of asphyxial deaths is 3.98% i-e 130 cases out of 3265. Homicide was the most common manner of death. Highest number of cases were reported from Badhabair. Studies to highlight the specific areas/towns of Peshawar with high rates of homicide are not available in literature and this reporting is being done for the first time. Apart from Badhabair, considerable portion of asphyxial death cases were received from Chamkani and Khazana area.

Strangulation by ligature was the most common method used. The higher rate is prevalent in other areas also and can be concluded from the results of a seven year study in Karachi where 15.8% cases of strangulation were subjected for exhumation[5]. In a three year study conducted in Faisalabad, Pakistan, there were 34 cases (19.2%) of asphyxial deaths out of 177 total homicidal cases. Most of these deaths were due to strangulation[6]. Strangulation cases were also found higher (9%) in honour killing victims in a four year study done by Human Rights Commission[7]. A five year retrospective study, done in India, reported higher incidence of strangulation for homicidal purposes in females[8].

Study like these have limitations because autopsies are not performed on every case and reporting death

to police is also not common in many areas of Peshawar district. The authors assume that the actual figures would be higher than reported keeping in view the security status of the district. Law enforcement agencies should also be made aware of these statistics to help in investigation and to increase surveillance of dangerous areas.

Suicide by asphyxia is extremely rare and has been proven in multiple studies worldwide as well as ours. In a study done in Brazil, high alcohol levels were associated with suicide by hanging[9]. Substance abuse in suicide was also reported in the United States[10]. Another study in the United States associated suicide with depression and also found that self strangulation by ligature was very uncommon. This study used a sample of 33,300 (all were cases of suicide), out of which 7,491 were due to asphyxia[11]. Foul play must be suspected in all cases of asphyxia assumed/reported to be suicidal due to hanging.

CONCLUSION

Asphyxial deaths are mostly homicidal and females are common victims. Suicide by asphyxia is extremely rare and security agencies should be made aware of these facts to help in investigation.

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CONTRIBUTORS

ZHK supervised the whole project, helped in the data analysis and final review of the manuscript. MN helped in data analysis, study design and interpretation of results. MA, MZIK, SHA and NA helped in data collection, data entry, writing and reviewing the manuscript. All the authors contributed significantly to the research that resulted in the submitted manuscript.