Sudden natural deaths in medicolegal autopsies in Imphal

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Abstract

Introduction: A suspicion of foul play is raised when a healthy person without any significant past history of illness is found dead. The present study was carried out to find out the incidence and causes of sudden natural deaths in cases brought for medicolegal autopsies.

Materials & Methods: A retrospective study on cases of natural deaths brought for medicolegal autopsies during the five year period of 2012 to 2016 to our centre was conducted to find out the incidence, demographic profile and causes of death in such cases. The detailed case history, police records, hospital records, if available, and post-mortem examination reports were studied. The findings were statistically analysed using descriptive statistics to find out the mean, percentage and frequencies.

Results: Out of the 1321 medicolegal autopsies brought during the period, 121 (9.2%) were cases of natural deaths, involving 110 males and 11 females with a M:F ratio of 10:1. The highest number of cases was observed in the age group of 31-50 years (57.85%). Interestingly, 66.9% of the cases had external injuries which were trivial in nature. The commonest cause of death was cardiovascular system diseases (41.32%), of which 90% were due to coronary insufficiency. Other causes include respiratory system diseases (21.62%), gastrointestinal /hepatic diseases (9.01%), central nervous system diseases (6.6%), genito-urinary system diseases (3.3%) respectively.

Conclusion: Cardiovascular system disease, especially coronary insufficiency, is a common cause of sudden natural deaths in this part of the country. Awareness of routine health check-up amongst the general public would help in reducing the incidence of such deaths. A meticulous post-mortem examination always helps in avoiding unnecessary litigations in such cases.

Keywords: Medicolegal Autopsies, Sudden Natural Deaths, Cardiovascular Diseases.

Introduction

Death is said to be natural when it occurs due to natural disease or pathological condition, old age, disability or devitalisation, in which death is not intended or attempted and also does not occur accidentally but one that is primarily attributed to an illness or an internal malfunction of the body not directly influenced by external forces.(1) Sudden natural deaths constitute a considerable portion of deaths, which undergo medicolegal autopsies. A suspicion of foul play is raised when a healthy person without any significant past history of illness is found dead. Further, the suspicion over the cause and manner of death grows if the terminal event occurs unnoticed or unobserved by anyone. In such cases, the exact cause of death may be established only after a post-mortem examination. Further, spreading awareness is necessary in clearing the mystery surrounding the abruptness of these deaths. The present study was carried out to find out the incidence and causes of natural deaths in cases brought for medicolegal autopsies in this part of the country.

Materials & Methods

A retrospective study on cases of natural deaths brought for medicolegal autopsies to the mortuary of a tertiary care teaching hospital at Imphal during the five year period of 2012 to 2016 was carried out. Circumstances surrounding the deaths were analyzed from the police report. Information regarding life style was collected from family members. In this study, poisoning and trauma cases have been excluded. The cases were analysed with regard to annual incidence, age and sex incidence of the victims, external injuries present on the body, the cause of death and type of diseases causing the deaths. The detailed case history, police records, hospital records, if available, and post-mortem examination reports were studied. The findings were statistically analysed using descriptive statistics to find out the mean, percentage and frequencies.

Results

Out of the 1321 medicolegal autopsies brought during the period, 121 (9.2%) cases were cases of natural deaths (Fig. 1). Age and sex wise incidence showed 110 males and 11 females with a male: female ratio of 10:1. The highest number of cases was observed in the age group of 31-50 years (57.85%) (Fig. 2). Interestingly, 66.9% of the cases had external injuries which were trivial in nature (Fig. 3). As shown in Table 1, the commonest cause of death was cardiovascular system diseases (41.32%), of which 90% were due to coronary insufficiency. Other causes include respiratory system diseases (21.62%), gastrointestinal/hepatic diseases (9.01%), central nervous system diseases (6.6%), genito-urinary system diseases (3.3%) respectively.

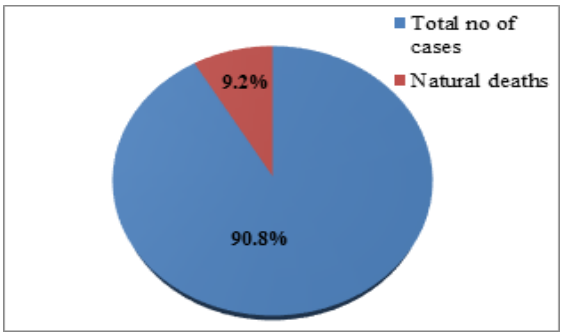

Fig.1: Showing total number of medicolegal autopsies and the number of natural deaths during the study period

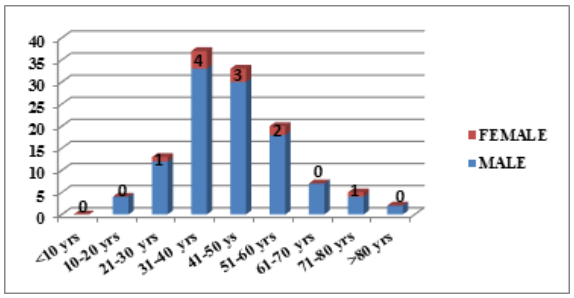

Fig 2: Age and sex wise incidence

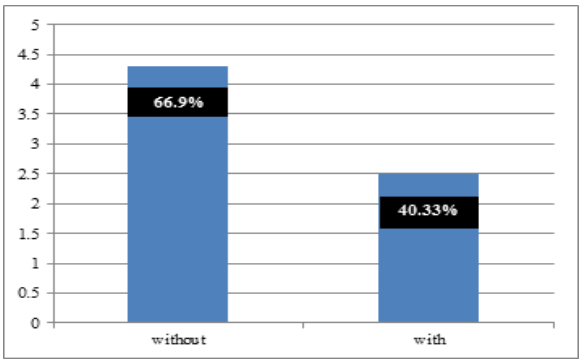

Fig. 3: Associated external injuries

Table-1: Causes of sudden natural deaths (System-wise)

System affected	Disease	No. of cases	Total
Cardiovascular system (CVS)	Coronary insufficiency	45	50 (41.3%)
	Cardiomyopathy	3	
	Myocarditis	1	
	LVF	1	
Respiratory system	Pneumonia /Bronchiolitis	18	31 (25.62%)
	Interstitial pneumonitis	10	
	Tuberculosis	2	
	Lung abscess	1	
Gastrointestinal tract (GIT)	Cirrhosis	16	23 (19.01%)
	Hepatitis	5	
	Fatty liver	1	
	Duodenal perforation	1	
	Acute haemorrhagic pancreatitis	1	
Genitor-urinary system	Glomerulosclerosis	1	4 (3.3%)
	Chronic pyelonephritis	3	
Central Nervous system (CNS)	Intraventricular haemorrhage	8	8 (6.61%)
Misc	Not ascertained	5	5 (4.13%)

Discussion

A natural death can be a cause of concern and raise a suspicion of foul play if it is presented in unexpected circumstances. Various parameters can be associated with the presentation of a natural death.

In a study by Escoffery and Shirley,[2] it was observed that 51.3% of the medicolegal autopsies were constituted by cases of sudden natural deaths with M:F ratio of 1.2:1 and a mean age of 53.7±21.8 years. The peak age group in their study was the seventh decade accounting for 21.9% of cases. In contrast to their findings, only 9.2% of the medicolegal autopsies were constituted by sudden natural deaths in our study, and males outnumbered females in the ratio of 10:1, and the age group mostly affected was 31-50 yrs. In another study by N wafor et al.[3], it was observed that out of the 4481 medicolegal deaths autopsied, 61.0% of the cases were sudden natural deaths with a M:F ratio of 1.4:1. The commonest age group was 25-44 years which accounted for 30.2% of the cases. However, Chaturvedi et al.[4] reported involvement of younger age group. The demographic variance could be attributed to the difference in diet and lifestyle.

In the present study, 40.33% of the cases had associated external injuries. However, the presence of external injuries in these cases had no role in the deaths as these were of trivial nature. The unexpectedness of the circumstances surrounding the deaths led to suspicion of foul play in the cases but these were quelled ultimately as autopsy revealed the deaths to be due to natural causes.

Majority of the sudden natural deaths were due to the diseases of cardiovascular system, as observed by Bhagora[5] (59.18%), Sapate et al[6] (55%) and Sreedevi and Sreelekshmi[7] (66%) with coronary artery disease in 46.82%, 41% and 81. 8% respectively. Similarly in our study, 41.32% of the cases of sudden natural deaths were due to cardiovascular diseases and coronary insufficiency constituted 90% of these cardiovascular diseases. This remarkable finding could be due to lack of regular check-ups and preventive measures in these cases.

Some of the other causes of sudden natural death in our study were diseases of respiratory system 21.62%, diseases of alimentary system 9.01%, diseases of genito-urinary system 3.3% respectively. This is in agreement with the findings of Sapate[6] and Zandad and Nanadkar.[8] However, in their study, diseases of the central nervous system (CNS) were observed in 12% of the cases unlike in our study where CNS involvement was seen in only 6.6%, which was

observed in the form of intraventricular haemorrhage. There are a number of CNS disorders, which are responsible for sudden death. The most well-known of these CNS disorders are epilepsy, stroke, subarachnoid bleeding, bacterial meningitis and head injury.[9] Bennani et al[10] reported sudden death in a case of epilepsy and a case of meningococcal meningitis. In the present study, none of the cases had epilepsy or meningitis.

In some places, infectious diseases were the major causes of natural deaths,[4] perhaps due to overcrowded dwelling areas. In the present study, only 4.1% cases had unknown causes unlike in other studies where in 32.9% cases exact cause of death could not be ascertained.[4]

Conclusion

Cardiovascular system disease, especially coronary insufficiency, is a common cause of sudden natural deaths in this part of the country. Awareness of routine health check-up amongst the general public would help to reduce the incidence of such deaths. Further, a meticulous post-mortem examination always helps in avoiding unnecessary litigations in such cases.

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