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Original Research Article

A Retrospective Study of Autopsy Findings in Sudden Death Cases Subjected For Postmortem Examination in Tertiary Care Centre

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Conflict of interest: Nil

Abstract

Objective: The main aim of the study is to analyze epidemiological profile and the predominant system involved and its postmortem findings in sudden death cases subjected for postmortem.

Methods: We retrospectively reviewed data based on the history given by Investigating Officer, inquest reports, Postmortem findings in Postmortem Certificates, histopathological reports and chemical analysis reports between March 2022 to August 2022.

Results: In this study maximum number of cases died due to sudden death presented with complaints of chest pain (33.3%) followed by sudden unconsciousness (30%) as presenting complaints. In this study majority of the cases who died of sudden death was confined to the Cardio Vascular system (80%) and male predominance.

Conclusion: Sudden natural deaths due to coronary artery heart disease were most common cause with male preponderance in this region. In the study, majority of sudden death cases were observed in the age group of 51-60 years and laborer being predominant occupation among them which may be due to lack of awareness, not seeking timely health care services and poverty.

Keywords: Sudden Natural Death, Postmortem Examination, Cardiovascular System, Intracranial Hemorrhage.

Introduction

Death is said to be sudden or unexpected when a person not known to have been suffering from any dangerous disease, injury or poisoning is found dead or dies within 24 hours after the onset of terminal illness (WHO). Emphasis is placed more on the unexpected character, rather than suddenness of death. The incidence is approximately 10 percent of all deaths. [1].

No period in life is exempt. Majority of sudden death cases is of natural cause. Establishing a cause of death in Sudden death cases is a challenge for Autopsy surgeon. As per the textbook Medical Jurisprudence and toxicology by Modi, approximately 80% of sudden natural death are cardiac in origin and of this the greatest part is due to coronary atherosclerosis producing ischemic heart disease.[2].

When an apparently healthy person dies under circumstances, when his death is not expected and dies suddenly, it is called sudden death. Ordinarily the terminal event is < 24 hours before death or the person is not seriously ill during the 24 hours before death. Because the death occurs all of a sudden, there is a possibility of suspicion of foul play. If the last attending physician is satisfied with the terminal event he may issue the death certificate. If he has any doubt or suspicion, then it becomes necessary for him to get an inquest made and proceed in the direction of performing an autopsy.

Aims and Objectives: This study is to analyze epidemiological profile and the predominant system involved and its postmortem findings in sudden death cases subjected for postmortem in Tirunelveli Medical College.

Methodology

This is a retrospective study conducted in the Department of Forensic Medicine, Tirunelveli medical college, Tirunelveli, Tamil Nadu. Data collected is based on the history given by Investigating Officer, inquest reports, Postmortem

findings in Postmortem Certificates, histopathological reports and chemical analysis reports.

Study Design: Retrospective study

Study Area: Department of Forensic Medicine, TVMC.

Study Sample: Cases with suspected sudden death subjected for postmortem examination during March 2022 to August 2022.

Inclusion Criteria: Cases with suspected sudden death subjected for postmortem examination.

Exclusion Criteria: Cases other than sudden death.

Results

A total of 30 cases which was included in study. Among them 26 cases (86%) were male and 4cases (14%) were female.

Table 1: Sex distribution

SEX	Number of cases	Percentage
Male	26	86%
Female	4	14%

Predominant age group among 30 cases is 51 to 60 years which is 10 cases (33.3%) followed by 7 cases (23.3%) in 41 to 50 years and 7 cases (23.3%) in more than 60 years, 5cases (16.8%) in 31 to 40 years and 1 case (3.3%) in 20 to 30 years.

Table 2: Age distribution

Age	Number of cases	Percentage
20 to 30 years	1	3.3%
31 to 40 years	5	16.8%
41 to 50 years	7	23.3%
51 to 60 years	10	33.3%
More than 60 years	7	23.3%

Among 30 cases 12 cases (40%) were labourer as occupation, 5 cases (16.8%) were driver, 3 cases (10%) were housewife, 3 cases (10%) were unemployed, 2 cases (6.6%) were professional, 1 case (3.3%) was businessman and 4 cases (13.3%) details about occupation not available.

Table 3: Distribution by occupation

Occupation	Number of cases	Percentage
Labourer	12	40%
House wife	3	10%
Business	1	3.3%
Professional	2	6.6%
Unemployed	3	10%
Driver	5	16.8%
Not known	4	13.3%

Out of 30 cases, 10 cases (33.3%) present with complaints of chest pain, 9 cases (30%) with sudden unconsciousness, 2 cases (6.7%) with breathlessness, 2 cases (6.7%) with other complaints (fever, fatigue), 1 case (3.3%) with stomach pain and 6 cases (20%) were details not known.

Table 4: Presenting complaints

Presenting complaints	Number of cases	Percentage
Chest pain	10	33.3%
Sudden unconsciousness	9	30%
Breathlessness	2	6.7%
Stomach pain	1	3.3%
Others (fever, fatigue)	2	6.7%
Not known	6	20%

Majority of cases died due to coronary artery heart disease which is 23 cases (76.8%) followed by Intracranial hemorrhage which is 4 (13.3%) and Pneumonia, valvular heart disease each account for 1 case (3.3%).1 case were cause of death not known.

Table 5: Cause of death

Cause of death	Number of cases	Percentage
Coronary artery heart disease	23	76.8%
Intracranial hemorrhage	4	13.3%
Pneumonia	1	3.3%
Valvular Heart disease	1	3.3%
Not known	1	3.3%

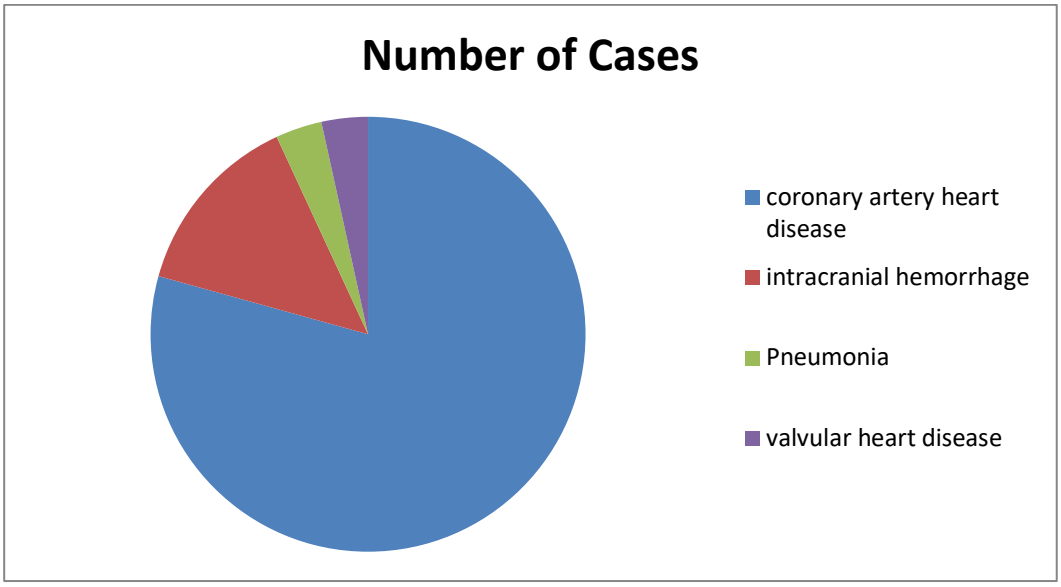

Chart 1: System involvement

Among 30 cases the predominant system involved is Cardiovascular system which was 24 cases (80%) followed by 4 cases (13.3%) were Central nervous system involved, 1 case (3.3%) were Respiratory system involved and 1 case (3.3%) were predominant system cannot be fixed.

Table 6: System involvement

Predominant system	Number of cases	Percentage
Cardio vascular system	24	80%
Respiratory system	1	3.35%
Central nervous system	4	13.3%
Not known	1	3.35%

Discussion

In this study 30 cases were analyzed based on inclusion and exclusion criteria. In our study majority of the sudden death cases were seen among male (86%), while only 14% of sudden death cases were of female. This finding is consistent with Kumar U et al [3], Mukhopadhyay S et al [4], Chaudhary V A et al and Zanjad et al [5]. Males are more susceptible to stress because they are the primary breadwinners and family head, and they also tend to indulge in unhealthy behaviors like smoking and alcoholism, which can occasionally result in sudden death. In the study, majority of sudden death cases (33.3%) were observed in the age group of 51-60 years. which was also similar with various studies, like Azmak et al (50-59 years) [6], Chaudhary V A et al (51-60 years) [4]. In my study majority of the victims who succumbed to sudden death were Laborer's by occupation not similar to the Study by R.D. Bagnall, R.G. Weintraub, et al. Jobless and sedentary work style people were the victims of sudden death.

The increased incidence of Laborers may be attributed to the type of work (Stressful) as well as increased dependence to alcohol and tobacco consumed to reduce body pain / to relieve tension for the type of work in which they are employed. In this study maximum number of cases died due to sudden death presented with complaints of chest pain (33.3%) followed by sudden unconsciousness (30%) as presenting complaints. In this study majority of the cases who died of sudden death was confined to the Cardio Vascular system (80%) which is similar to all previous studies. This indicates that Cardio Vascular system is the most involved system in sudden death cases. In my study majority of the deceased died due to Coronary Artery Heart Disease (76.8%) followed by Intracranial Hemorrhage (13.3%). This may be

attributed to a sedentary lifestyle, inactivity, and a high intake of fats, which may cause atheromatous plaques to form in the vessels and cause hypertension, myocardial infarction, etc. This may be attributed to sedentary lifestyle, lack of exercise, and high intake of fatty foods, which may cause atheromatous plaques to form in the vessels and cause hypertension, myocardial infarction, and other conditions.

Conclusion

Sudden natural deaths due to coronary artery heart disease were most common cause with male preponderance in this region. In the study, majority of sudden death cases were observed in the age group of 51-60 years and laborer being predominant occupation among them which may be due to lack of awareness, not seeking timely health care services and poverty. The study highlights the critical need for targeted preventive healthcare initiatives by providing significant insights into the patterns and causes of sudden natural deaths (SNDs). This emphasizes the significant effects of lifestyle decisions, prior medical issues, and ignorance of early warning indicators.

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