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Medicine

A CROSS SECTIONAL STUDY OF DEATHS OCCURRED IN RAILWAY ACCIDENTS BROUGHT TO MORTUARY, GGH, GUNTUR

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ABSTRACT Railway accidents are one of the challenging cases during the post-mortem examination where there is always a suspicion about the manner of death whether it is homicidal or suicidal or accidental in nature. The role of medicolegal expert is vast to differentiate among them by correlating the findings, injuries and observation of scene of offence. Many of the railway deaths remain unknown because of various reasons. The present study emphasises the various medicolegal aspects regarding the nature of injuries the cause of death, manner of death and possibilities to overcome the hurdles regarding the identification and manner of death.

KEYWORDS : Railway deaths, Medicolegal aspects, Identification.

Introduction

Among the unnatural deaths in medicolegal cases, the railway deaths have a significant role in various medicolegal aspects. There are many instances where the victims fall prey for the railway injuries and that is a source also for masquerading the incidents. This is also one of the main reason for non-identity of the persons. The present study describes all the medicolegal aspects regarding the injuries, cause of death, manner of death, the various scientific advances regarding the identity and the possibilities to overcome the hurdles in solving the medicolegal puzzles.

Objectives of the study

a. To study the medico-legal profile of railway accidents.
b. To describe the various injuries leading to death in railway accidents.
c. To design a reconstructive model to determine the manner of death.
d. To describe the methods of identification in railway accidents with mutilated, disfigured and unknown bodies.

Review of Literature

According to Sheikh. M.I.1. studies it is seen that out of 262 cases received from railway police, in 208 cases (79.39%) the victims had died as a result of either multiple injuries, head injury, decapitation, crushing of body in parts, blunt injuries or transaction of body into two parts. Whatever is the cause of death but the manner of death is classified as un-natural either suicidal or accidental in nature. In these cases, the injuries were produced as a result of striking of the victim with the train. Harrington R.2, says the railway accident as an agent of traumatic experience occupies an important place in the history of mid- and late-nineteenth-century medical and medicolegal discourses over trauma and traumatic disorder. Erichsen J.E. 3, repeated claims that the disorder associated with railway accident victims do not represent a new type of injury, but a more serious and widespread manifestation of an old one is undermined by the emphasis.

In another study by RoyChowdhury UB 6, Sabal PR 5, Sheikh Ml et al 1, Wasnik NR11and Dipankar Thakuria 12, this can be explained by the fact that in the modern world males remain the major earning members of the family, so they are exposed to risks and accidents in every step of life. Also the rush to get to work has left to increased number of cases in the early hours of the day.

In another study, the proportion of males was more compared to females with a ratio of 4:1, which agrees with the study done by Sahoo and Kar in 1998 7. The male predominance over female was since most of the outstation activities are usually carried out by the males. The age group which showed a higher frequency was 6th decade of life and this disagrees with the study done in northern part of Kerala which showed the proponent age group of 4th decade. The age group of 3rd decade, most of the cases, could be due to dangerous travel and careless crossing and in 7th decade due to the physical incapacity of old age. Victims belong to the urban areas constituted 66.3% and rest were from rural areas which agrees with the study done by Central India. Basu R.4, the preponderance of this age group between 30 years – 50 years is due to requirement of more travelling for earning and lead a stable life.

The majority of cases may be accidents followed by suicide which agrees with Mohanty M K.8. out of 104 cases there was definite history of suicide in 26 (25%) cases and no exact history was there in 18 cases.

There were other contributing factors like vision and hearing impairment in 12.5% cases. most of them were elders. Hence in medicolegal autopsy all cases the body has to be examined for the signs of intoxication and natural disease which agrees with Umadathan 10. In 5 (6.7%) of victims there was history of psychiatric illness which is one of the pre-disposing factors in suicides. Among them, 5 cases (4.8%) presented with history of jumping in front of train and other two (1.9%) with lying across railway track. Both histories were suggestive of suicidal attempts. This agrees with the study done by Cheng ATA 9, most of the occurrences were on the weekends involving Saturdays (24%).

Valsala K, C.S. Sreedevi, Sreelekshmi J.15 in their study majority of victims were males to female ratio 4:1, The peak incidence was noted in the 6th decade. Majority of cases belonged to urban areas. Most of the victims were manual labourers. Travelling, moving and crossing near railway tracks in intoxicated conditions is very usual practice. In

the study by Agalar Et Al, 13, the mortality rate was very high as the human body is subjected to very high velocity hit. Vasnik RN. 11, Victims belong to the urban areas constituted 66.3% and rest were from rural areas which agrees with the study done in Central India. Electrocution or death by burns or drowning in lake or river (if train falls of a bridge) etc., can also occur in train accidents according to V.V. Pillai.14.

Material & Methods

The study is conducted by examining all the medico-legal cases brought by railway police for post-mortem examination to the mortuary, GGH, Guntur. The written informed consent is taken with the escort police and relatives of the deceased. The suitable precautions are taken to maintain the secrecy of the particulars of the deceased. All the details are noted in the prescribed proforma and detailed analysis is made correlating the injuries over the body with the scene of crime. Proper measures are suggested for identification of unknown deceased. All the data is subjected to the analysis with suitable statistical tools.

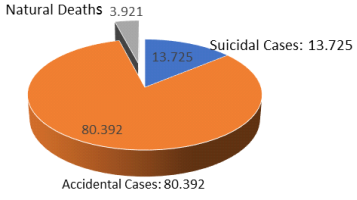
Observations

1. According to Manner of Death
2. According to identity
3. According to sex
4. According to Age Group
5. According to social status
6. According to literacy
7. Students group
8. According to Marital status
9. According to Type of Injuries

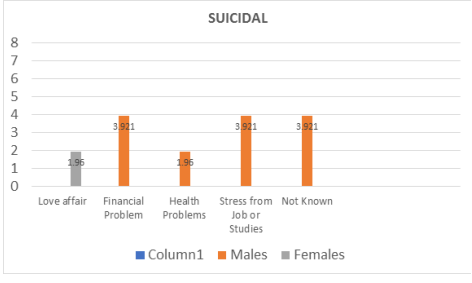
Table 1 According to Manner of Death (Total No: 51 Cases)

S.No.	Mode of Death			Number of Cases		
				Total	M	F
1	Suicide	Total Cases 8 (15.686%)	Love Failure	1(1.960%)		1(1.960%)
			Financial Problems	2(3.921%)	2 (3.921%)	
			Ill Health	1(1.960%)	1 (1.960%)	
			Stress from Job	2(3.921%)	2 (3.9215)	
			Not Known	2(3.921%)	2(3.921%)	
2	Accidental	Total Cases 41 Cases (80.392%)	Accidental Fall from train	29(56.862%)	27 (25.233%)	2 (3.9215)
			Occur During Crossing the Track	12(23.529%)	10 (9.345%)	2 (3.9215)
3	Homicidal	0	-	-	-	-
4	Natural	Total Cases 2 (3.921%)	-	-	2 (3.921%)	-

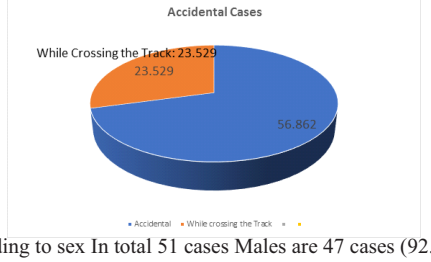
Pie Representation 1
Manner Of Death



Column 1
Suicidal



Pie Representation 2
Accidental Cases



2. According to sex In total 51 cases Males are 47 cases (92.156%) and Female are 4 cases (7.843%).
3. According to identity In total 51 cases Known cases are 25 cases (49.019%) and Un known cases are 26 cases (50.980%).
4. According to economic status Among the total number of 25 known cases, low income group are 5 cases (20%), Middle income group are 20 cases (80%). No recorded high-income group (0).
5. According to Literacy

Table 2
According to Literacy

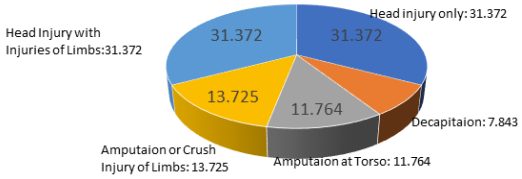
S.No.	Literacy	Number of Cases
1.	Illiterates	9 (17.647%)
2.	Educated	16 (31.372%)
5.	Not Known	26 (50.980%)

6. Students Group: 5 Cases (9.803%) (Other Cases are employees/Workers)
7. According to Marital Status In total 51 cases Married cases are 15 cases (29.417%), Un married cases are 10 cases (19.607%) and marital status not known cases are 26 cases (50.980%).
8. According to age group In total 51 cases, up to teenage group cases up to 19 Years are 4 (7.843%), Adult group 20 years to 50 Years are 33 cases (64.705%) and old age group are 14 cases (27.450%).
9. According to Type of Injuries

Table 3 ***According To Type Of Injuries***

S.No.	Type of Injuries	Number of Cases
1.	Head Injuries only	16 (31.372%)
2.	Decapitation	4 (7.843%)
3.	Transection of the body at Torso	6 (11.764%)
4.	Amputation or Crush Injury of Limbs	7 (13.725%)
5.	Head Injury with Injuries of limbs	16 (31.372%)

Pie Representation 3 Type of Injuries:



Discussion

After a detailed and exhaustive study of the cases and related medicolegal documents like inquest report, FIR, scene of offence report and the postmortem reports, the following points are highlighted.

1. In our study, it is observed that the known and unknown cases of deaths in railway injuries are more or less the same. The ratio between known and unknown cases studied during the said period is 25:26, out of a total number of 51 cases. Among them 15 are

married and 10 are unmarried. The reason for a large number of unknown cases may be abandonment of the persons resulting in the care of platforms, sitting at the footsteps, overcrowding in the general compartments, less agonal period is a few.

2. Among the selected total number of 51 cases of deaths due to railway injuries, the Male to Female sex ratio is 47:04. which denotes that the male victims are more in number subjected to railway deaths. The reasons for this may be frequent journeys, easily accessibility by the males.
3. It is observed that the age group also is varying in significant number of in total 51 cases up to teenage group cases are up to 19 Years are 4 (7.843%), Adult group 20 years to 50 Years are 33 cases (64.705%) and old age group are 14 cases (27.450%). The both extremes of the age group are relatively lesser compared to the adult age group, the reason being frequent journeys, responsibilities and work tensions.
4. In all the railway deaths studied, 8 cases are suicidal, 41 cases are accidental in nature and 2 cases are of natural disease. There is no evidence of any homicidal cases or homicide like cases.

Among the 8 suicidal cases, one case of female is due to love failure, one case of male is due to ill health (1), 2 cases of males are due to financial problems, 2 cases of males are due to stress from studies and work and in the remaining cases, reasons are not known.

Among the 41 (80.392%) accidental cases, 29 cases (56.862%) are due to fall from train and 12 cases (23.529%) occurred during crossing over the railway track. The fall from train may be due to sitting at the footsteps, overcrowding in the general compartments. During the crossing the track, there shall be the element of negligence or carelessness or due to inability to respond quickly by old persons are few reasons to state.

Among the 2 deaths due to natural disease, the deceased suffered from Renal Failure and died during the journey.

After careful examination of the injuries present over the body, the manner of infliction of the injuries over the body, examination of clothing over the body and the history given by the police, it can be concluded that there is no evidence of any suspicion regarding homicidal nature in all the cases of our study.

5. Among the 25 known cases,

a. 16 (31.372%) cases are educated and 9 (17.647%) are illiterates. This shows that the educated are more interested in ending their life with minimal agonal period. The other studies show the illiterates opting for the other methods like poisoning, burns etc.,

b. 5 (9.803%) cases are students and 11 (21.568%) cases are employees / workers. All the student death cases, are due to failure in the exams and lover failure. All the employee death cases are due to financial loss and work tensions.

c. 5 cases (9.803%) are of low income group, 20 cases (39.215%) are of Middle income group. We did not find any high-income group cases in our study. The probable reasons maybe they don't want themselves to be exposed or mutilated.

6. During the postmortem examination, the pattern of injuries is observed to draw the conclusion of cause of death, the following are the various injury patterns over the body.

a. 16 (31.372%) cases are only head injuries
b. 4 (7.843%) cases are Decapitation.
c. 6 (11.764%) Amputation of the body at torso
d. 7 (13.725%) Amputation or crush injury of limbs
e. 16 (31.372%) Head injury with injuries of limbs

After careful and detailed observation of the injuries it can be analyzed that the 4 cases of decapitation and 6 cases of amputation of the body at torso shows clear cut cases of suicide, where the incidence is firmly determined. The 16 cases where there are only head injuries show that, the manner of infliction of injuries are accidental in slow moving train, so that the head is only affected without injury to the other parts. The 7 cases of amputation or crush injury of the limbs and 16 cases of head injury with injuries of limbs show that, the injuries are accidental in nature in fast moving trains, so that there are multiple injuries due to roll over on the track or on the ground for a distance with crushing effect of the limbs. There is no evidence of any stab injuries or nonaccidental injuries to suspect any homicidal nature.

Suggestions:

1. To prevent suicidal deaths the public should be educated to boost the self-confidence and to know the value of the life.
2. The railway track accidents during cross over can be prevented by strengthening the railway security system and alerts and suitable precautions should be taken while departure and arrival of the trains. Outside the station where there are railway crossings on road, suitable precautions should be taken while closing and opening the gate.
3. The railway station premises should be free of destitute / abandoned persons and the railway authorities should take precautions to have a valid ticket and identity of the persons, whoever entering into the railway station.
4. The railway authorities should take possible precautions to detrain all the ticketless passengers and overcrowding of the compartments

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