ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,Iss 6, Sep 2022

Road Fatalities And Forensic Medicine

Dr. Shilpa Singh[1], Dr. Bhumija Siwach[2], Dr. Jyoti Rani[3]

1. Assistant Professor, Department of Forensic Medicine, Santosh Deemed to be University, Ghaziabad
2. Tutor, Department of Forensic Medicine, Santosh Deemed to be University, Ghaziabad
3. Senior Resident, Department of Forensic Medicine, Dr. Baba Saheb Ambedkar Hospital, Rohini, Delhi

A B S T R A C T

In the event of a fatal traffic accident, the death is recorded as a "unusual death," an inquest is held, and, if required, a forensic autopsy is carried out to establish any causative link between the accident and the death, identify the at-fault vehicle, and ascertain the accident's cause. A forensic autopsy of a fatal traffic accident victim must establish the cause of death as well as the mechanism of damage. To complete this analytical assignment, the corpse, the vehicles involved, and the accident scene must be observed. The procedure of examining whether the individuals involved in the accident had any diseases that would compromise their driving performance or were under the influence of alcohol or drugs is also essential to determining the cause of death. Promoting collaborative research between forensic medicine, clinical medicine, automotive engineering, and road engineering will be crucial. It will also be critical to take action to lessen the impact of drunk pedestrians and pedestrians with dementia, as well as to ensure that drivers are properly screened for alcohol and illegal drug use.

INTRODUCTION

Examinations into human deaths frequently involve forensic medicine, one of the medical sciences. Most accidental deaths worldwide are caused by traffic accidents. An essential aspect of the inquiry of traffic victims is determining the causes and modes of deaths. Identification of the causes of death and the reasons behind traffic accidents is made possible by forensic autopsies of the victims, driver drug and alcohol tests, and DNA testing of the specimens.[1-3]

In this analysis, we first examine the medico-legal treatment of traffic accident victims in Japan before putting forward suggestions for forensic medicine-based traffic accident fatality reduction.

The relationship between traffic accidents and forensic medicine

When working on legal issues that require medical explanation, professionals in the field of forensic medicine try to provide fair, scientific medical judgements, advocate for the individuals involved, and assist make society a better and more secure environment. This category includes

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,Iss 6, Sep 2022

fatalities from automobile accidents, making theman a key focus in the field of forensic medicine.

The two basic categories of deaths are "ordinary deaths" and "unusual deaths." The most typical instance of a death falling under the first category is when a patient has an illness (an endogenous disease) and passes away in a hospital as a result of the effects of their condition. [4-5]This is referred to as a "endogenous death" and happens while the patient is receiving medical care.

Article 21 of the Medical Practitioners Act, on the other hand, mandates that the doctor report a death to the relevant police department in the event that it qualifies as "exceptional." The Medical Practitioners Act does not define "unusual death" specifically, but it does include fatal car accidents and all other exogenous deaths. A traffic accident is an accident that involves any mode of transportation, be it a car, bicycle, ship, or airplane [13].

Physical damage caused by traffic accidents

The three main categories of victims in traffic accidents—pedestrians, drivers, and passengers—as well as the less common category of victims in collisions involving bicycles or other two-wheeled vehicles—typically suffer from different kinds of injuries (Table 3). Pedestrian injuries can be divided into three categories: those sustained when a pedestrian makes initial direct contact with a moving object (primary injuries), those sustained when a pedestrian is thrown into that object (secondary injuries), and those sustained when a pedestrian is thrown to the ground (tertiary injuries).[9-11] The configuration of the involved vehicles and the speed of the impact determine the type of pedestrian injury.

Injuries to the driver and passengers happen when the automobile falls over, when someone is thrown from the car, or when it collides with another car or a structure off the side of the road, bruising the persons inside. A seat belt helps stop the driver from hitting the steering wheel, crashing into the front windshield, and flying out of the car, which can prevent significant trauma and result in minor injuries or catastrophic injuries including a heart rupture if the driver's chest crashes with the steering wheel. Thus, an essential component of any inquiry is to ascertain if the individuals were using their seat belts at the time of the collision [2,7]. When airbags deploy, seat belts are especially essential since the airbag could explode quickly into the passenger's chest and cause significant injury.

In order to diagnose the cause of death and identify the mechanism of damage in a traffic fatality, investigators must carefully examine the body, the vehicles involved, and the accident scene—the three primary components in a traffic accident. In addition to playing a crucial role in defending the rights of the parties and maintaining law and order, forensic autopsies provide a favourable setting for identifying fundamental research subjects that could encourage the emergence of forensic medicine as an academic field.

Diseases and driving

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,Iss 6, Sep 2022

A person can develop one of two fundamental categories of illnesses and symptoms while operating a motor vehicle: illnesses and symptoms that may result in the driver's sudden, unexpected death; and illnesses and symptoms that may impair the driver's ability to operate the vehicle safely . A 'sudden, unexpected death' occurs when a healthy person unexpectedly acquires an endogenous disease and passes away within 24 hours of the disease's first symptoms. Heart disease, which causes the majority of sudden, unforeseen deaths, can manifest itself when a person is behind the wheel. The sudden onset of heart disease in a driver can result in fatalities for pedestrians and passengers, however most drivers who experience heart disease while operating a vehicle are still able to move their shoulders and park their vehicles when symptoms first arise.

Ideas for reducing the number of traffic accident fatalities

Traffic accident fatality exams are legal processes in the realm of forensic medicine. However, the understanding of the reasons of death and other medical information that forensic autopsies can provide is helpful in clinical medicine for preventing unexpected deaths and treating injuries. Researchers in the domains of automotive and road engineering can use analyses of the mechanisms underlying physical injuries to better understand the interactions between people, cars, and roads, making them useful resources.[13] The number of traffic accident fatalities can be decreased by promoting joint research initiatives that bring together forensic medicine, clinical medicine, automotive engineering, and road engineering to study traffic accident fatalities.

Diseases and driving

A person can develop one of two fundamental categories of illnesses and symptoms while operating a motor vehicle: illnesses and symptoms that may result in the driver's sudden, unexpected death, and illnesses and symptoms that may impair the driver's ability to operate the vehicle safely. A "sudden, unexpected death" occurs when a healthy person unexpectedly acquires an endogenous disease and passes away within 24 hours of the disease's first symptoms.

Heart disease, which causes the majority of sudden, unforeseen deaths, can manifest itself when a person is behind the wheel. The sudden onset of heart disease in a driver can result in fatalities for pedestrians and passengers,however most drivers who experience heart disease while operating a vehicle are still able to move their shoulders and park their vehicles when symptoms first arise.

Medical facilities should assess the blood alcohol levels of trauma patients who were the drivers in recent car accidents. The medical response team must take the time to collect two blood samples in order to determine the driver's blood alcohol concentration at the time of the accident if there is a long period of time between the accident and the patient's arrival at the hospital. In order to check for stimulants, synthetic cannabis, and other illegal drugs that affect driving ability, investigators must also collect urine samples from drivers.[14] It will be able to discourage drunk and drugged driving—two behaviours that might result in catastrophic accidents—if these measures catch on and are adopted as standard operating procedure.

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,Iss 6, Sep 2022

The victim of a hit-and-run accident loses the chance to receive assistance, and the offender bears a serious criminal responsibility. We need to emphasise the high crime-arrest ratio for hit-and-runs and educate drivers about their responsibilities to assist victims if they are involved in an accident.

REFERENCES

[1] K. Kibayashi, P.M. Ng'walali, K. Hamada, K. Honjyo, S. Tsunenari, Discrepancy of clinical symptoms and prognosis of a patient — forensic significance of “talk and die” head injury, Leg. Med. (Tokyo) 2 (2000) 175–180.

[2] K. Kibayashi, K. Yonemitsu, S. Tsunenari, Sudden natural death while driving. A review of cases and procedures for its prevention, IATSS Rev. 25 (2000) 111–116 (in Japanese with English abstract).

[3] K. Kibayashi, P.M. Ng'walali, K. Hamada, K. Honjyo, S. Tsunenari, Forensic autopsy of traffic fatality with juvenile Parkinson's disease: identification of the driver and estimation of the ability to drive a vehicle, Jpn. J. Forensic Pathol. 7 (2001) 25–29 (in Japanese with English abstract).

[4] K. Kibayashi, H. Shojo, N. Ono, Traumatic basal ganglia hematoma in a fatal traffic accident victim, Leg. Med. (Tokyo) 4 (2002) 127–130.

[5] K. Kibayashi, H. Shojo, Incipient Alzheimer's disease as the underlying cause of a motor vehicle crash, Med. Sci. Law 42 (2002) 233–236.

[6] A.W. Jones, Acute and chronic use, postmortem findings, in: J. Payne-James, R.W. Byard, T.S. Corey, C. Henderson (Eds.), Encyclopedia of Forensic and LegalMedicine, Elsevier, 2005, pp. 39–58.

[7] K. Kibayashi, Injury of the trunk. Review series of practical forensic pathology, Jpn. J. Leg. Med. 60 (2006) 136–145 (in Japanese).

[8] K. Kibayashi, T. Sumida, H. Shojo, M. Hanada, Dementing diseases among elderly persons who suffered fatal accidents: a forensic autopsy study, Am. J. Forensic Med. Pathol. 28 (2007) 73–79.

[9] J. Payne-James, R. Jones, S.B. Karch, J. Manlove, Simpson's Forensic Medicine, 13th ed. Hodder Arnold, 2011.

[10] R. Furutani, K. Kibayashi, Morphological alteration and reduction of MAP2 - immunoreactivity in pyramidal neurons of cerebral cortex in a rat model of focal cortical compression, J. Neurotrauma 29 (2012) 1266–1276.

ISSN PRINT 2319 1775 Online 2320 7876

Research paper UGC CARE Listed (Group -I) Journal Volume 11,Iss 6, Sep 2022

[11] R. Shimada, K. Nakao, R. Furutani, K. Kibayashi, A rat model of changes in dural mast cells and brain histamine receptor H3 expression following traumatic brain injury, J. Clin. Neurosci. 19 (2012) 447–451.

[12] K. Kibayashi, R. Shimada, K. Nakao, A. Ro, Analysis of pituitary lesions in fatal closed head injury, Am. J. Forensic Med. Pathol. 33 (2012) 206–210.

[13] K. Kibayashi, R. Shimada, K. Nakao, Temporal and regional variations in accidental deaths of elderly people in Japan, Med. Sci. Law 53 (2013) 172–176.

[14] K. Nakao, R. Shimada, K. Hara, K. Kibayashi, Experimental study on age estimation of

bloodstains based on biological and toxicological analysis, Open Forensic Sci. J. 6 (2013) 6–11.