

Case Report

Two Is Company, Three Is Crowd: Report of Fatality from Ridding Triple (Seat)

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ABSTRACT

Road traffic accident deaths are preventive form of deaths. In India, about 30,624 (22.4%) deaths in year 2011 was reported due to two-wheeler accidents. In this case series, we are reporting fatalities while driving two-wheeler with triple seat and reports pattern and distribution of injuries in such incidents. All were male and the age of individuals ranged from 30 to 55 years with mean age was 42 years. Analysing the pattern of injuries, in all cases there was head injury. Two-wheelers are unstable vehicle and require skill and balance while driving the vehicle. Riding the two-wheelers with three or more persons may cause crowding and increases the risk of accident.

Keywords: Road traffic, Accident, Death, Two-wheeler, Vehicle, Postmortem

INTRODUCTION

As per National Crime Record Bureau report 2011, about 1,36,834 (35%) deaths in the year 2011 were reported due to road traffic accidents. Tamil Nadu, Maharashtra, Karnataka, Andhra Pradesh and Kerala have accounted for 15.0%, 10.7%, 10.2%, 9.3% and 8.0%, respectively, of total road accident deaths in the country. About 30,624 (22.4%) deaths in the year 2011 was reported due to two-wheeler accidents¹.

Road traffic accident deaths are preventive form of deaths and the alarming rise of fatality due to such mishaps is of great concern. These premature deaths are always loss for a family but it also affects society and country in terms of loss of manpower. Two-wheeler is an easy and economic form of transportation and therefore gained popularity across the country. Unfortunately, these vehicles contribute substantially while considering total fatality.

Considering the capacity and arrangement of two-wheeler, only two persons can travel on it. But erroneously

nowadays three or more people are riding on the vehicle (Figure 1). This increases the chance of vehicular accident and subsequent mortality. At present, there is no definite data regarding such fatality. In this case series, we are reporting fatalities while driving two-wheeler with triple seat and reports pattern and distribution of injuries in such incidents.

METHODS

The present case series is retrospective study conducted from year 2009 to 2010 at the Department of Forensic Medicine, Government Medical College, Nagpur. In this period, four victims were brought for postmortem examination with history of riding the bike triple seats, i.e., three persons were travelling on the bike.

RESULTS

All were male and the age of individuals ranged from 30 to 55 years with mean age was 42 years. Among them one was brought dead from spot, while three were admitted to the hospital. The mean hospital stay was 32h.



Figure 1: Riding the bike triple

The history of the incident is given in Table 1. Pattern and distribution of external and internal injuries are provided in Tables 2 and 3, respectively.

Table 1: Circumstances of two-wheeler accident

Case No.	History	Victim	Place of occurrence
1.	Collusion with truck	Front rider	State highway
2.	Skidding of motorcycle	Middle person	State highway
3.	Dash to pedestrian and subsequent skidding of bike	Middle person	Village street
4.	Collusion with truck	Front rider	State highway

The dimensions of seat of two-wheelers, including bikes and self-start scooters presently available in Indian market, were analysed. On an average, the seat length is 68 cm and breadth is 29.25 cm (Figure 2). The seat is meant for sitting two persons, i.e., one is rider and other is pillion.

DISCUSSION

Two-wheelers are easy, economic and popular mode of travelling in India. The Indian two-wheeler industry recorded sales of 13.4 million units in 2011-2012, a growth of 14% over the previous year. Overall, the International Credit Rating Agency expects the domestic two-wheeler industry to report a volume growth of 8-9% in 2012-2013 as base effect catches up with the industry that has demonstrated a strong volume expansion over the last 3 years at cumulative annual growth rate (CAGR) of 21.8%.

Table 2: Pattern and distribution of external injuries

Case No.	1	2	3	4
Head, neck and face	Multiple abrasions	Multiple abrasions and lacerated wounds	-	Multiple lacerated wound over left scalp
Chest and abdomen	Multiple abrasions	Multiple abrasions	-	-
Back	Multiple abrasions	-	-	-
Upper limbs	Multiple abrasions	-	Multiple abrasions	Multiple abrasions
Lower limbs	Multiple abrasions and avulsions	-	-	Multiple abrasions

Table 3: Pattern and distribution of internal injuries

Case No.	1	2	3	4
Head	Under scalp haematoma frontal region, subarachnoid haemorrhage	Under scalp haematoma bifrontal and right parieto-occipital, comminuted (fracture) right frontal bone and anterior cranial fossa, EDH – bifrontal, SDH right parieto-temporal, contusion bifrontal lobe with SAH	Under scalp haematoma left parieto-temporal, craniotomy right side done, SAH with contusions at right temporal lobe	Under scalp haematoma left fronto-parietal, Burr hole right side done, SDH, contusion right temporal lobe with SAH
Chest	Rib fracture, haemothorax	-	-	-
Abdomen	Haemoperitoneum, multiple lacerations over liver and spleen, kidney contused	-	-	-

EDH:-epidural haematoma; SDH: - subdural haematoma; SAH: - subarachnoid haemorrhage

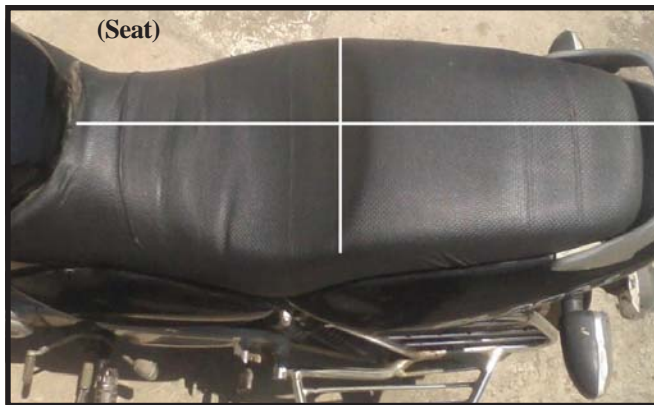


Figure 2: Two-wheeler seat dimensions

Over the medium term, the two-wheeler industry is expected to report a volume CAGR of 9-11% to reach a size of 24-26 million units (domestic and exports) by 2016-2017. Therefore, considering this, it is expected that in future more number of vehicles will be on the road².

Two-wheeler riders are a vulnerable group and are more prone for road accidents. The designing of two-wheeler is made in such a fashion that the vehicle rests and moves on two points and are thus relatively unstable on the road³. The driving requires skill and balance. Two-wheeler accidents are a leading cause of death in India. Pathak *et al*⁴ while studying the fatal road traffic accident reported that about 49.37% of deaths were due to two-wheeler accidents. Similarly, Govekar *et al*⁵ reported 39.50% fatality. In a study conducted by Oberoi *et al*⁶ at Patiala, Punjab, on fatal two-wheeler accidents, it was observed that about 74% of victims were drivers of the two-wheelers and 26% were pillion riders. About 94% of victims were male and in 32% of cases the age group was 31-40 years.

Analysing the pattern of injuries in present case series showed that head injury was present in all cases. Studies on road traffic accidents reveal that head is the most common injured organ of the body among two-wheeler occupants³. Pathak *et al* noted head injury in 65.84% of cases, while Govekar *et al* had noted the same in 81.25% of cases^{4,5}. Evaluating the pattern of accident, we have noted that in two cases, the vehicles collide with another

vehicle while in another two cases, the vehicles had fallen subsequent to skidding of two-wheeler. Two-wheeler vehicles are totally unprotected unlike cars and buses leaving the rider directly exposed to environment and objects. In the event of a crash, the head of the rider or the pillion directly hits a mobile or immobile object causing injury³. It was noted that non-helmet wearers were at higher risk of sustaining brain injuries compared to helmeted riders. National Institute of Mental Health and Neuro Sciences (NIMHANS) studies have shown that mortality among non-helmeted riders and pillioners was 2.2 times higher compared with helmeted riders³.

Much other unsafe behaviour of two-wheeler riders like usage of cell phones, talking with pillion, squeezing through the traffic, driving the vehicle with one hand, hearing music with earpiece speakers, etc. are noticed, thus adding to the already existing risk³. Nowadays people are riding the two-wheeler with sitting three or more people. Such riding adds another risk factor. On an average, in India, the length of seat is about 68 cm. The seat accommodates only two persons. If more than two persons are sitting then it causes crowding and driver is unable to drive the vehicle in precise manner and thus endangers his life or other lives. Under these circumstances the rider and middle persons are mostly affected as they are sandwiched, whereas third person may sustain secondary injuries while throwing off from the vehicle.

In conclusion, two-wheelers are an unstable vehicle and require skill and balance while driving the vehicle. Riding the two-wheelers with three or more persons may cause crowding and increase the risk of accident. At times, such accident may prove fatal. There is an urgent need to curb such hazard else in near future this becomes routine practice and may cause many premature deaths.

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