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## Case Report

# Barricades and death trap

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### ABSTRACT

Barricades are mainly meant to alert drivers to hazards created by construction or maintenance operations on highways. It will guide the driver across the hazard. Police uses barricades to control the traffic diversions, traffic from entering work areas, separate two-way traffic and police checking. Many times it becomes a way of revenue generator for the police and the unattended or unmanned barricades which left at its place becomes a death trap for the motorcyclist. Thus, the purpose of barricade in total changes from the saviour of a driver to Yamaraj (God of Death). In this article we discuss the post-mortem examination of two such cases which occurred in the same winter season.

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## 1. Introduction

Road traffic accidents are one of the major causes of death in India. According to the latest National Crime Bureau report the number of traffic accidents has increased from 474515 in 2017 to 474638 in 2018. The total number of road accident deaths in 2018 was 152780 and among that two-wheelers death were 54610.<sup>1</sup> The major five risk factors for road traffic accidents are failure to include seat belts, child restraints, speeding, failure to use helmets and alcohol intoxications.<sup>2</sup> There are many other reasons like careless driving, physical fatigueness, animal crossing, defect in vehicle, poor road infrastructure and poor visibility. Barricades are used on the road to alert the driver and also as a safety measure to limit the speed of driving. But when these barricades are not placed properly or is invisible to the driver due to structural defect in the barricade may lead to fatality. Here we are reporting two cases where barricade lead to the death of the motorcyclists. Fatal accidents with barricade is rarely reported in the literature and this literature will help to understand them

better.

## 2. Case Report

### 2.1. Case 1

On 13<sup>th</sup> January 2020 in Subash Nagar, a 28 year old police constable was travelling on motorcycle to Lalkuan for special duty during night and on the way motorbike hit a barricade. The deceased was taken to Government Medical College, Haldwani where he was declared brought dead. On examination the deceased was wearing good quality helmet, which had scratches over it. In accordance to history given the deceased travelled on foggy night with very little visibility and the barricade on which deceased hit was unmanned and mainly used for night patrolling.

On post-mortem examination bluish discoloration of fingernails were noted over the both hands. A superficial incised wound (Figure 1) was present over the front of middle one third of neck, 8 cm from the chin, transversely placed, measuring 5 x 2 cm x skin deep, both ends making acute angle. On dissection blood is extravasated diffusely over all of the front muscles of neck. Thyroid cartilage

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and underlying larynx and trachea is fractured into multiple pieces and displaced. Thyroid supplying blood vessels are crushed. The remaining part of trachea is filled with blood and to the bronchioles. Multiple small reddish blue contusions present below the above wound measuring 1.5 x 0.2 cm, 1.5 x 0.8 cm, 0.5 x 1.8 cm and 0.5 x 0.5 cm respectively.



**Fig. 1: A:** Showing the injury sustained over neck; **B:** Showing the fracture of laryngeal structure and blood infiltration

## 2.2. Case 2

A 30-year-old male was driving back to home on the night of 1<sup>st</sup> December 2019 and hit over an unmanned barricade. As per the history of police the person was over speeding and was not wearing helmet. Police person couldn't explain for what purpose barricade was kept there. The lighting was also poor in that area.

On post-mortem examination anteroposterior deformity of face with comminuted fracture of all the skull bone including maxilla and mandible. Open head injury was noted with dura lacerated, brain crushed and brain matter mixed with blood clots. A lacerated wound present over the left side of face extending to the left occipital area measuring 16 x 5 cm x skull cavity deep exposing the brain matter.

## 3. Discussion

According to the WHO report on road safety 2018, road traffic accidents is the eighth leading cause of death and first leading cause of death among the age group of 5-29 years. This is three times greater in low economic countries compared to high income countries.<sup>3</sup> The countries with rapidly growing economy will show higher mortality in terms of road traffic accidents as compared to high or low income countries due to Kuznets effect unless effects are made to invest in the road safety.<sup>2</sup> In Brasilia Declaration on road safety where India was also a signatory is committed to reduce the number of accident cases and fatality by 50% by 2020. But so far we haven't had able to reduce the cases. A small country like colombia has become successful in reducing to half from 1996 to 2006 by

an integrated approach to road safety.<sup>4</sup> A National Road Safety Policy has been approved by India and has evolved a multimodality strategy based on 4 E's, engineering, education, enforcement and emergency care. The other target as in Brasilia Declaration has to be achieved by the year 2030 like to achieve technical standards for all road users mainly based on the five risk factors which have discussed earlier.<sup>5</sup>

According to the National report the number of fatal cases of traffic accidents due to weather condition, road infrastructure, other causes and causes not known comes around 17978 deaths.<sup>6</sup> With efforts we can prevent most of these deaths. Both cases show the importance of wearing helmet. First person was wearing helmet and he was not having any kind of intracranial haemorrhages after the impact whereas in the second case the deceased was not wearing helmet and he sustained fatal head injury. According to the WHO 2018 report the number of Indian motorcycle rider wearing helmet accounts to 30%.<sup>7</sup>

The first case shows the importance of following strict restrictions in the usage of type of barricades. The barricade used by the police for patrolling was not at all adhering to any international guidelines. Any barricades or warning devices shouldn't be left unattended without any purpose. Though he was wearing a good quality helmet it couldn't save his life as the fatal injury was over his laryngeal structures which completely got fractured and blood aspirated which was due to hitting his neck over the unstructured and unscientific type of barricade.

Barricades or channelizing devices should always be constructed in a way that when inadvertently hit by the vehicle it shouldn't cause significant harm to the road users or workers. Drums, cones or tubular markers are normally used to channelize the pedestrians. All shall be of brilliant red/orange/yellow and shall be of such materials so that it won't cause any damage to the colliding vehicle. For night time use should be retro-reflectorized or equipped with lighting devices for maximum visibility. Barricades should be used to prevent traffic from entering work areas, safety to both traffic as well as construction worker, separate two-way traffic and to protect the road user from hazardous construction material. Height of barricade should be of 1 to 1.5 m and should be painted by alternate yellow and black stripes. The entire area of chevron stripes should be reflectorised with Class B sheeting as per IRC: 67-2012.<sup>8</sup> The barricade reported in the case was painted with a dull blue color (Figure 2) and neither there was any kind of reflector or lighting devices and in addition to it the thick fog came as Yamaraj to him.

A study from New Delhi shows that 22% of accidents occur at 9pm to 12 pm.<sup>9</sup> This shows the importance of usage of reflectors and lighting devices. Lighting devices are important especially in winter seasons as shown in studies, where highest number of accidents occurred in



**Fig. 2:** Showing the barricade involved in the accident of case 1

winter season.<sup>10–12</sup> The lighting devices can be floodlights, flashing warning beacons, warning lights and steady-burn electric lamps. We have to make our roads safe to protect each and every life. Unfortunately the bad infrastructure kills the motorcyclist first and or the young generation as seen in one of the study where majority (53%) of them injured in motorcycle collisions were in the age group of 15 to 29.<sup>13</sup> In both of these cases too deceased were of young age. In short while controlling the traffic flow appropriate barricade should be used that should be visible from a safe distance. Caution board to be displayed at the ends of barricade. Two persons with red/green flag and whistle should be kept to regulate traffic. Red light to be used after sunset. The other part of barricade should be visible. It shouldn't become an easy way of revenue income and blocking the view by advertisements. It should be removed by the authorized persons once the job is done. No material should be projecting from the barricade.

#### 4. Conclusion

Road safety is one of the important topics discussed as we are losing so many lives which would have otherwise protected. Everyone has the right of safe road. In this case scenario it shows the importance of following the guidelines while obstructing road by any way. It took the life one among them. After the death of 21 year old men in Delhi by getting his neck stuck in an iron wire tied between two barricade placed in west Delhi's Subash Place, the then commissioner revised the standing orders on usage of barricades which clearly says in any mishap due to unmanned barricade, the concerned SHO or traffic inspector will be held responsible.<sup>14</sup> The orders further explains that barricades kept during night patrolling have to be removed to safe place and it shouldn't be procured through sponsors and there shouldn't be any commercial or private advertisements. This order should be rolled out

throughout the country by the government so that we can save lives and move toward attaining the goals as mentioned in Brasilia Declaration.

#### 5. Conflict of Interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this article.

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