

## Case Report

# Traumatic avulsion of the globe and optic nerve in a road traffic accident

Ritesh Verma\*, Manisha Rathi, Sumit Sachdeva, C. S. Dhull, Jitender Phogat

Regional Institute of Ophthalmology, PGIMS, Rohtak, India

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**\*Correspondence:**

Dr. Ritesh Verma,

E-mail: [ritesh.verma1992@gmail.com](mailto:ritesh.verma1992@gmail.com)

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### ABSTRACT

Road traffic accident is one of the important causes of ocular trauma. There is a need for strict traffic rules in third world countries where a majority of people travel on two wheelers and that too without a helmet. People generally tend to over speed or try to fit in their children on a two wheeler in our country. In this case report, we present a case of complete avulsion of eye ball and optic nerve in a patient of a road traffic accident. There are no documented cases of avulsion of the globe and optic nerve due to a road traffic accident in the available literature.

**Keywords:** Road traffic accident, Avulsion of optic nerve

### INTRODUCTION

Road traffic accident is one of the important causes of ocular trauma. The global annual incidence of ocular trauma is around 55 million, of which 7,50,000 require hospitalization each year.<sup>1</sup> Blunt trauma to the globe during a road traffic accident may cause rupture or avulsion of the globe with its attendant consequences.<sup>2</sup> Traumatic avulsion of the globe and optic nerve are rare because of the protection offered by the bony socket and the resistance of the globe due to its pressure and the thickness of the nerve tissues.<sup>3</sup> Nearly all the ocular injuries due to a road traffic accident can be prevented by wearing a helmet. According to a survey, of the 1453 two-wheeler riders who died in road accidents in the city of Chennai between January 1, 2013 and June 28, 2015, 1434 were not wearing a helmet. In the same period, just 19 two wheeler riders wearing a helmet were killed in road accidents. The above figures are clearly suggestive of importance of helmets.<sup>4</sup> However, there are no documented cases of avulsion of the globe and optic nerve due to a road traffic accident in the available literature. A case of road traffic accident in which patient

sustained multiple facial injuries and complete avulsion of the eye ball is reported here.

### CASE REPORT

A 27 year old male was brought to the emergency room of PGIMS, Rohtak after a motorbike collision with an auto rickshaw. He was not wearing a helmet. The patient was unconscious, he had suffered multiple facial injuries and the right eyeball was lying outside the orbital socket with complete avulsion of the optic nerve and extraocular muscles. The eyeball was attached to the orbit by a soft tissue tag. On examination, the eyeball pressure was maintained with hyphema in the anterior chamber. Patient sustained a large eyebrow and upper lid laceration on the right side with fracture of the superior orbital margin. Left eye had a mid-dilated, non-reacting pupil.

The soft tissue tag joining the eyeball to the socket was cut with scissors after taking consent from the relatives of the patient and the eyeball was sent to pathology department. Tarsorrhaphy in right eye was done and the patient was taken up for immediate neuro-surgical

management. The patient was eventually transferred to a higher centre for further surgical management.



**Figure 1: Showing multiple lacerated wounds and eyeball lying outside the orbit.**



**Figure 2: Showing the avulsed eyeball attached to orbit by a soft tissue tag.**

## CONCLUSION

Automobile collisions may lead to life-threatening injury to two-wheeler drivers and associated visual loss in them is either due to organic damage to the eye in the form of open globe injury, vitreous hemorrhage etc. or injury to the intracranial part of the visual system.<sup>1</sup> There is a need

for strict traffic rules in third world countries where majority of people travel on a two wheeler and that too without a helmet. People generally tend to over speed or try to fit in their children on a two wheeler in our country. Ocular morbidity and loss of lives could be prevented by promoting the habit of wearing helmet through behavior change communication. In the case discussed above, the patient had extreme ocular and facial injury from which the eye could not be salvaged and had to be removed.

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