

Ocular Injuries After Bungee Jumping

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ABSTRACT

We present a case of ocular injuries post bungee jumping in Nepal. A 26 year old female presented to our clinic with bilateral Sub Conjunctival Hemorrhage (SCH) after bungee jumping. Her best corrected visual acuity was 20/20 in both eyes. No other intraocular hemorrhage was revealed in her dilated ocular examination. Conservative treatments with artificial tears were given to her and follow up visit after one week was advised. The SCH was resolved after a treatment of one week. Her visual acuity remained stable and no other ocular complications were found. To conclude, bungee jumping can be the cause of several ocular injuries. Further studies are required to identify the causes and potential risk factors.

Keywords: Bungee jumping, ocular injury; sub conjunctival haemorrhage.

INTRODUCTION

Bungee jumping is an adventurous sport in which people jump from higher ground such as a bridge with an elastic rope which is tied to their ankles to stop them from hitting the ground. The actual thrill comes from the free-falling process and the immediate rebound.¹ Nepal is often the destination for many tourists all over the world in order to experience the thrill of bungee jumping.

This case report is intended to report the uncommon but possible ocular injuries after bungee jumping.

CASE REPORT

A 26/F without a history of any systemic illness reported to our clinic with a history of redness with mild pain in both of her eyes since 4 days. She gave a history of performing bungee jumping in Kushma bungee jump, Nepal which is the second highest bungee jumping in the world. She revealed that the redness occurred

soon after bungee jumping. She had not taken any oral contraceptives, anticoagulants or nutritional supplements. She had no previous history of SCH, soft bruising or easy bleeding. She didn't have any ocular trauma or surgeries before. Her complete blood count, haemoglobin, bleeding time and clotting time were within normal limits.

Her blood pressure was 120/80 mmHg. The intraocular pressure was 12.2 mmHg in the right eye and 14.6 mmHg in the left eye. Extra ocular motilities were full, free and painless and the pupil reaction was normal. Her visual acuity was 20/20 in both the eyes. However, the sectoral SCH was found in both of her eyes [Figure 1, 2]. Slit lamp examination showed clear deep anterior chamber and fundus examination revealed no signs of retinal or vitreous hemorrhages. She received a conservative treatment with artificial tears (Everest Parenterals, Birgunj, Nepal) in order to relieve mild pain along with cold compression to improve comfort. A week later, her SCH resolved. Her vision remained stable and no other ocular complications were noted.

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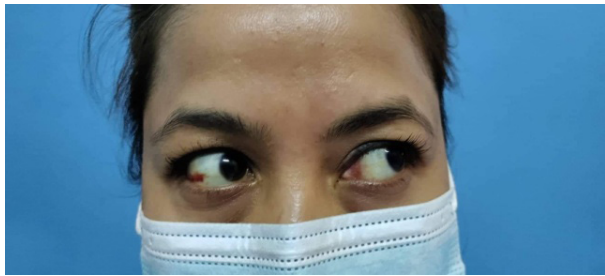


Figure 1. Sub Conjunctival Hemorrhage in right eye.

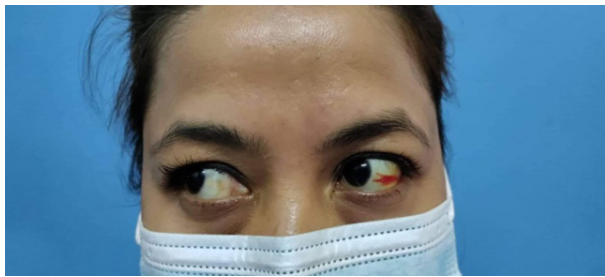


Figure 2. Sub Conjunctival Hemorrhage in left eye.

DISCUSSION

One of the main mechanisms behind ocular injuries following bungee jump would be due to increased intrathoracic pressure and increased hydrostatic pressure in the eye, similar to Purtscher's retinal traumatic angiopathy or Valsalva's retinopathy. It could also be explained by the sudden deceleration experienced by the jumper at the end of the fall due to rope tension, increasing intrathoracic pressure and blood flow to the head.⁸ Gravitational force is said to be the important cause of these hemorrhages.⁶

In a survey of 73 Ophthalmologists based in New Zealand by Clemett from 1989 to 1991, only a single case of ocular injury in bungee jumper, presented with subconjunctival hemorrhage was reported.² In recent years, many case reports have presented several ocular injuries following bungee jumping.³⁻⁵ The patients in most of the cases presented with blurred vision ranging from mild loss of 20/30 to dramatical deterioration of counting fingers.⁶⁻⁸ Most of which had good visual outcomes under conservative treatment.

Periorbital bruising, subconjunctival hemorrhage and intraocular bleeding are the reported complications following bungee jump. Intraocular bleeding can include single or multiple retinal hemorrhages that may involve the foveal or parafoveal area and may be accompanied by macular oedema.⁶ The hemorrhage can be preretinal, subhyaloid, or intravitreal.^{5,6}

A case of oculomotor paralysis and nystagmus and other ophthalmological injuries such as internal limiting membrane hemorrhages, subhyaloid hemorrhages and vitreous hemorrhages have also been described.³ Retinal micro-hemorrhages are possibly caused by micro-infarctions of the capillary vasculature of the retinal nerve fibre layer. The foveal involvement may be represented by macular oedema and cotton wool exudates.⁹ The visual acuity of patients with these lesions ranges from slightly diminished to severely affected. The recovery rate is usually high; however, it is a slow process in which cases of partial visual acuity recovery have been reported.¹⁰

CONCLUSIONS

Retinal hemorrhage is seen in most of the reported cases. However, in this case report only subconjunctival hemorrhage is seen with spontaneous recovery within a week time. In the context of increasing number of adventure activities such as bungee jumping, it is important for the clinicians to make public aware about the possible ocular injuries.

REFERENCES

1. Kockelman JW, Hubbard M. Bungee jumping cord design using a simple model. *Sports Engineering*. 2004 Jun; 7(2):89-96. [\[Article\]](#)
2. Clemett RS. Bungy jumping. *Australian and New Zealand Journal of Ophthalmology*. 1991 Feb; 19(1):88. [\[PubMed\]](#)
3. Curtis EB, Collin HB. Ocular injury due to bungee jumping. *Clinical and Experimental Optometry*. 1999 Sep 10; 82(5):193-5. [\[Article\]](#)
4. Hassan HM, Mariatos G, Papanikolaou T, Ranganath A, Hassan H. Ocular complications of bungee jumping. *Clinical ophthalmology*. 2012 Oct 4:1619-22. [\[Article\]](#)
5. Chan JO. Ophthalmic complications after bungee jumping. *The British Journal of ophthalmology*. 1994 Mar; 78(3):239. [\[Article\]](#)
6. David DB, Mears T, Quinlan MP. Ocular complications associated with bungee jumping. *The British journal of ophthalmology*. 1994 Mar; 78(3):234. [\[Article\]](#)
7. Habib NE, Malik TY. Visual loss from bungee jumping. *The Lancet*. 1994 Feb 19; 343(8895):487.

[\[Article\]](#)

8. Innocenti E, Bell TA. Ocular injury resulting from bungee-cord jumping. *Eye*. 1994 Nov;8(6):710-1.
[\[Article\]](#)
9. Van Rens E. Traumatic ocular hemorrhage related to bungee jumping. *Br J Ophthalmol* 1994; 78: 948.
[\[Download PDF\]](#)
10. Vanderford L, Meyers M. Injuries and bungee jumping. *Sports medicine*. 1995 Dec; 20: 369-74.
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