

A Case Report of Traumatic Dislocation of Eyeball

Deepak Choudhury, Pramod Kumar Sharma

Department of Ophthalmology, VIMSAR, Burla, Sambalpur, Odisha, India

Abstract

Complete dislocation of an intact globe into the maxillary sinus after an extensive blowout fracture is a rare occurrence. We report a case of pure blowout fracture of the floor of the orbit with intact orbital margins due to trauma resulting in complete dislocation of the globe into the maxillary sinus in a 42-year-old male. On ocular examination, the right eyeball was found to be absent from the orbit. Computerized tomography scan with contrast showed: (1) pure orbital blowout fracture; (2) intact eyeball in the right maxillary sinus; and (3) optic nerve seemed to be intact. Surgical exploration of the right maxillary sinus through Caldwell-Luc approach revealed a circular fracture which was just the size of the globe in the middle of the inferior orbital wall. The orbital contents were also found to be dislocated completely into the right maxillary sinus. The dislocated globe was repositioned into the orbit and the orbital floor fracture repaired with bone graft taken from iliac crest. The visual acuity in the right eye after the repositioning was no light perception. We are reporting this case because it is a rare condition and the various operative challenges.

Keywords: Blowout fracture of orbit, dislocated eyeball, repair of orbital floor fracture

INTRODUCTION

The orbital floor is commonly affected in blow-out fracture because of its weak structures. Soft tissue in orbit, such as extraocular muscles, ligaments, and orbital fat, always herniate into the fracture hole, when the orbit has burst fracture.^[1-3] However, complete dislocation of an intact globe into the maxillary sinus after an extensive blowout fracture is a rare occurrence. In this case, a pure blowout fracture of the floor of the orbit occurred due to trauma with intact orbital margins resulting in complete dislocation of the globe into the maxillary sinus. We are reporting this rare case because of its operative challenges.

CASE REPORT

A 42-year-old Hindu male patient presented to the outpatient department of our hospital with pain, swelling of lids and sudden loss of vision in the right eye (RE) following trauma from the horn of a cow which occurred 2 days before the day of presentation. He was treated in a local hospital with some drops, ointments before referral to our hospital.

On general examination, the patient was conscious and oriented. Vital signs and all systems were within normal limits. On ocular examination, face was symmetrical. Visual acuity was no light perception (NPL) in RE and 6/6 in the left

eye (LE). Swelling of both upper and lower lids of RE were found, which were tender on touch. Interpalpebral fissure was narrow in RE [Figure 1]. Conjunctiva was congested and chemosed. On exploration, under topical anesthesia right eyeball was found to be absent from the orbit [Figure 2]. There was no active bleeding. There was no abnormality in the LE. Computerized tomography (CT) scan was advised. Findings on CT scan with contrast included: (1) pure orbital blowout fracture; (2) intact eyeball in the right maxillary sinus; and (3) optic nerve seemed to be intact [Figure 3a and b].

Surgical exploration of the right maxillary sinus using the Caldwell-Luc approach was done under general anesthesia in collaboration with the maxillofacial surgeon [Figure 4]. A lower eyelid incision was given 3 mm below the lower eyelid margin. Periosteum was exposed after separating the soft tissue of lower eyelid. Then, it was cut and separated to reveal a circular fracture which was just the size of the globe in the middle of the inferior orbital wall. The orbital contents were also found to be dislocated completely into the right maxillary sinus [Figure 5]. The hole in the inferior orbital wall was

Address for correspondence: Dr. Deepak Choudhury, 05, Resident Doctors' Hostel, VIMSAR, Burla, Sambalpur - 768 017, Odisha, India.
E-mail: deepakchoudhury1988@gmail.com

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work noncommercially, as long as the author is credited and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

How to cite this article: Choudhury D, Sharma PK. A case report of traumatic dislocation of eyeball. *Niger J Ophthalmol* 2016;24:89-91.

Access this article online

Quick Response Code:



Website:

www.nigerianjournalofophthalmology.com

DOI:

10.4103/0189-9171.195206



Figure 1: Swelling of both upper and lower lids of right eye, narrow interpalpebral fissure (IPF)



Figure 2: Absence of right eyeball from the orbit

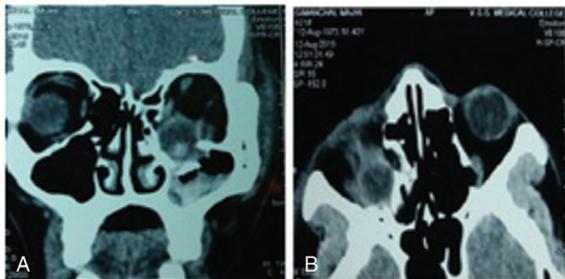


Figure 3: (a and b) Prolapse of right globe into the right maxillary sinus

enlarged. The eyeball was elevated from maxillary sinus by Caldwell-Luc approach. The dislocated globe was repositioned into the orbit [Figure 6].

Gross examination revealed an intact globe with corneal abrasion, dilated pupil, and normal anterior chamber depth. Optic nerve and extraocular muscles were found to be intact. Orbital floor fracture was repaired with bone graft



Figure 4: Caldwell-Luc approach



Figure 5: Lower eyelid incision and exposing the floor fracture



Figure 6: Dislocated globe repositioned manually into the orbit



Figure 7: Orbital floor fracture was repaired by bone graft

taken from iliac crest which was 1 mm larger than the fracture [Figure 7]. The incision was sutured [Figure 8]. Local and systemic steroids and antibiotics were administered. Postoperatively, the patient had a visual acuity of NPL with restricted motility of the eyeball in RE [Figure 9].



Figure 8: Incision in the lower fornix conjunctival was sutured



Figure 9: Postoperative

DISCUSSION

The complete traumatic dislocation of the globe into the maxillary sinus is a very rare event. Due to the intense force affecting the orbit, the impact on the globe and its accompanying structures is normally very severe.^[4] In this case, inferior orbital wall suffered from traumatic fracture, which resulted in the globe completely dislocated into the maxillary sinus. We suspected that inferior orbital wall was broken by an instant top-down force, which pushed the globe into the maxillary sinus.^[3,5] We believed that the globe should be contused following such injury. Contusion of the eyeball may lead to anterior and central vitreous hemorrhage, lens dislocation, secondary glaucoma, optic nerve damage, and other complications.^[6-9] Hence, urgent surgery was needed to reposition the globe and repair of the fracture of the orbit. Surgery could restore the normal globe position and repair of orbital floor fracture.^[10,11] It was necessary to expand the fracture hole so that dislocated globe could be successfully repositioned without further damaging the already damaged eye. Local and systemic administrations of steroids and antibiotics are also necessary to get a good recovery.^[12] Visual acuity in the intact eyes after reposition has ranged from 6/6 to NLP.^[11] In our case, the patient had NLP due to delay in presentation after trauma.

CONCLUSION

Traumatic dislocation of eyeball into the maxillary sinus is a rare event. Urgent surgery is required to reposition the globe into the orbit. In our case, the patient had NPL even after surgery due to delay in presentation after trauma.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/ their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Zhang-Nunes SX, Jarullazada I, Mancini R. Late central visual recovery after traumatic globe displacement into the maxillary sinus. *Ophthal Plast Reconstr Surg* 2012;28:e17-9.
2. Saleh T, Leatherbarrow B. Traumatic prolapse of the globe into the maxillary sinus diagnosed as traumatic enucleation of the globe. *Eye (Lond)* 1999;13(Pt 5):678-80.
3. Abrishami M, Aletaha M, Bagheri A, Salour SH, Yazdani S. Traumatic subluxation of the globe into the maxillary sinus. *Ophthal Plast Reconstr Surg* 2007;23:156-8.
4. Müller-Richter UD, Kohlhof JK, Driemel O, Wagener H, Reichert TE. Traumatic dislocation of the globe into the maxillary sinus. *Int J Oral Maxillofac Surg* 2007;36:1207-10.
5. Smit TJ, Koornneef L, Zonneveld FW. A total orbital floor fracture with prolapse of the globe into the maxillary sinus manifesting as postenucleation socket syndrome. *Am J Ophthalmol* 1990;110:569-70.
6. Akhaddar A, Elmostarchid B, Boucetta M. Images in emergency medicine. Traumatic intraorbital stone with globe displacement into the maxillary sinus. *Emerg Med J* 2010;27:828.
7. Jellab B, Baha AT, Moutaouakil A, Khoumiri R, Raji A, Ghannane H, et al. Management of a severe cranio-orbito-facial trauma with a dislocation of the globe into the maxillary sinus. *Bull Soc Belge Ophtalmol* 2008;309:37-41.
8. Pelton RW, Rainey AM, Lee AG. Traumatic subluxation of the globe into the maxillary sinus. *AJNR Am J Neuroradiol* 1998;19:1450-1.
9. Berkowitz RA, Putterman AM, Patel DB. Prolapse of the globe into the maxillary sinus after orbital floor fracture. *Am J Ophthalmol* 1981;91:253-7.
10. Damasceno NA, Damasceno EF. Traumatic orbital fracture with intact ocular globe displacement into the maxillary sinus. *Rev Bras Oftalmol* 2010;69:52-4.
11. Ramstead C, McCabe J, Alkahtani M, Leong-Sit J, Morhart M. Traumatic dislocation of the globe into the maxillary sinus. *Can J Ophthalmol* 2008;43:364-6.
12. Xu B, Xu XL, Yan J. Treatment of traumatic globe dislocated completely into the maxillary sinus. *Int J Ophthalmol* 2013;6:106-7.