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Traumatic Luxation of the Ocular Globe: A Case Report

Luxación Traumática del Globo Ocular: Reporte de un Caso

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Abstract

Traumatic dislocation of the ocular globe is an infrequent ophthalmological emergency where a spasm of the orbicularis muscle occurs, preventing the eye from returning to its physiological position. We present a case of a 36-year-old woman with dislocation of the right ocular globe after an unusual trauma mechanism with initial visual acuity counting fingers at half a meter. The skull tomography showed an intact optic nerve without bone fractures, medical management was with intravenous doses of steroids and a improvised humid chamber to protect exposed cornea. Surgical approach in the first 24 hours consisted in a bimanual reduction under general anesthesia. Visual acuity of 20/50 was on postoperative day 5.

Keywords: ocular globe dislocation, trauma, ocular trauma, nail

Resumen

La luxación traumática del globo ocular es una urgencia oftalmológica infrecuente en la que se produce un espasmo del músculo orbicular que impide que el ojo vuelva a su posición fisiológica. Presentamos el caso de una mujer de 36 años con luxación del globo ocular derecho luego de un mecanismo traumático inusual con agudeza visual inicial contando dedos a medio metro. La tomografía de cráneo mostró un nervio óptico intacto sin fracturas óseas, su manejo fue médico con dosis intravenosas de esteroides y una cámara húmeda improvisada. El abordaje quirúrgico en las primeras 24 horas consistió en una reducción bimanual bajo anestesia general. La agudeza visual era de 20/50 en el día 5 del postoperatorio.

Palabras clave: dislocación del globo ocular, trauma, trauma ocular, clavo

INTRODUCTION

Luxation of the ocular globe includes eyelids posterior displacement to eyes equator, generally causing a spasm of the orbicularis muscle that prevents manual reduction to its anatomical position. The damage is determined by the degree of compromise of the optic nerve and the vascularization of the retina.[1]

Various mechanisms that cause dislocation of the ocular globe have been documented, including spontaneous causes[2] for example during the performance of a tonometry[3] even during an exophthalmometry[4] and there are traumatic causes that may vary according to the mechanism.[5,6]

Cases such as traffic accidents[7], eye trauma with door handles[5] even a 6-year-old girl playing with a tube of gift wrap[8] have been documented. In our case report, the patient suffered trauma with a nail in a wall while she was standing up; did not cause direct injuries to the eye but a retrobulbar hematoma did dislocated the right ocular globe.

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CASE REPORT

A 36-year-old female patient with no relevant history, who was admitted to the emergency room, reporting that 6 hours ago, she accidentally inserted a nail wall into her right eye, withdrawing abruptly and causing pain and decreased visual acuity. On general physical examination, the patient is alert, Glasgow 15 points, blood pressure of 119/79 mmHG, respiratory rate of 19 breaths per minute and heart rate of 83 beats per minute.

On ophthalmological examination, visual acuity was found to count a finger half a meter in the right eye with decreased reflex in the same eye, proptosis involving more than ¾ of the ocular globe, posterior displacement and spasm of the orbicularis muscle, superior subconjunctival hemorrhage, chemosis and approximately 90% of corneal abrasion with significant global limitation of ocular mobility (Figure 1).

Figure 1. Markable unilateral proptosis

Fundoscopy was performed with a direct ophthalmoscope, which reported no alterations. The initial management was with intravenous corticosteroids (dexamethasone, 8 mg every 12 hours), antibiotics (ceftriaxone, 1 gram every 12 hours) and the creation of an improvised humid chamber (polyacrylic acid) for protecting exposed cornea, while she was transferred to another unit to perform computerized axial tomography (CAT) due to the suspicion of a retrobulbar hematoma. The CT scan showed the dislocated ocular globe with rectification of the optic nerve and the presence of a liquid collection in the orbital cavity (Figure 2). We were concerned about the retrobulbar hematoma.

Figure 2. CT scan of the rectification of the right optic nerve

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An examination was performed under general anesthesia, finding chemosis, subconjunctival hemorrhage and corneal laceration with a positive fluoride test. The examination did not show any other damage.

The first therapeutic intervention included a globe digital pressure, which was unsuccessful. Subsequently, a lateral canthotomy was performed, draining approximately 15 ml of bloody material. Digital pressure was attempted, and the ocular globe was successfully reduced, performing a temporary blepharorrhaphy. The eye was covered for 24 hours (figure 3) and the temporary blepharorrhaphy was removed at 96 hours, obtaining a visual acuity of 20/40 in the Snell chart. (figure 4).

Figure 3. First postoperative day.

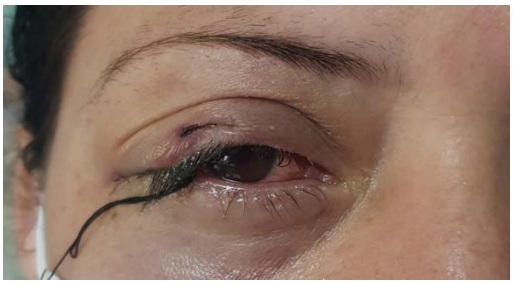

Figure 4. Fourth postoperative day.

This patient maintained the antibiotic and intravenous corticosteroid regimen for at least 5 days, obtaining a final visual acuity of 20/50 in the Snell chart. All the ocular movements are currently intact. This patient still with this visual acuity after 3 months of ocular globe reduction.

DISCUSSION

Traumatic displacements of the ocular globe can be grouped into 3 entities: dislocation where the ocular globe protrudes in front of the eyelids maintaining intimate contact, dislocation if the globe enters the paranasal sinus, and avulsion where the extraocular muscles and the optic nerve are partially or partially separated. entirely of the ocular globe.[1]

The mechanism of trauma in our patient has not been reported in previous studies and the visual prognosis depends largely on the damage to the optic nerve. It was reported clinical findings similar to those of our patient in a 56-year-old man who suffered an eye trauma with a door handle where, on initial physical examination, VA was hands movement with corneal abrasion.[5] Computerized tomography revealed a retrobulbar hematoma without evidence of optic nerve injury reaching VA of 20/80.[5] We fight trying to save time during the patient transfer from the ophthalmological center to a first level care center in

the capital, we avoid corneal exposure damage using a humid chamber with polyacrylic acid and hermetic plastic bag, it was a successful intervention in this case.

Using high doses of intravenous steroids is questionable for preventing or treating traumatic optic neuropathy (TON). An intervention review[9] demonstrated that there is a high rate of spontaneous visual recovery in TON and there is not convincing data that steroids provide additional visual benefit over observation. We decided to use it in this patient based on a discussion of the potential risk and benefits with she and her family members.

The lateral canthotomy and reduction was a simple but successful technique in this case. Other studies report use Desmarres lid retractors and manual reposition.[5]

CONCLUSION

Traumatic dislocation of the ocular globe is a very rare ophthalmological emergency in our environment, but it can cause severe damage. Timely management of these cases is the key to obtaining a better visual prognosis. This was a very unusual mechanism of dislocation.

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