

Bilateral Post-Traumatic Orbital Encephalocele

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ABSTRACT

Acute traumatic orbital encephalocele is a rare entity. According to PubMed less than 26 cases have been reported. We reported the case of a patient of 30 years with bilateral post-traumatic encephalocele; so the rigid reconstruction of the orbit is necessary to treat ocular damage and visual deterioration.

Keywords: Acute traumatic orbital encephalocele, Bilateral post-traumatic encephalocele, Intra orbital encephalocele bilateral, Intra-orbital cerebral hernia

INTRODUCTION

Acute traumatic orbital encephalocele is a rare entity. According to PubMed less than 26 cases have been reported. We present the second case of bilateral post-traumatic encephalocele, caused by a depressed fracture of the roof of the orbit [1].

CASE REPORT

We reported the case of a patient of 30 years suffered a poly trauma following a motorcycle accident at high speed. He had a head injury and chest trauma. On admission the patient was conscious, GCS=15/15, bilateral bruising around the eyes, he showed no deficit in the visual field, ocular motility was normal intrinsic and extrinsic.

A body scanner performs at admission showed a right frontal contusion associated with fracture bilateral depression of the roof of the orbit. Thirty-six hours after admission, the patient developed progressive bilateral exophthalmia non pulsatile breathless. Completion of a brain MRI showed increased volume of frontal contusion and an intra-orbital encephalocele bilateral (**Figure 1**). The Degradation visual was pattern of orbital decompression.

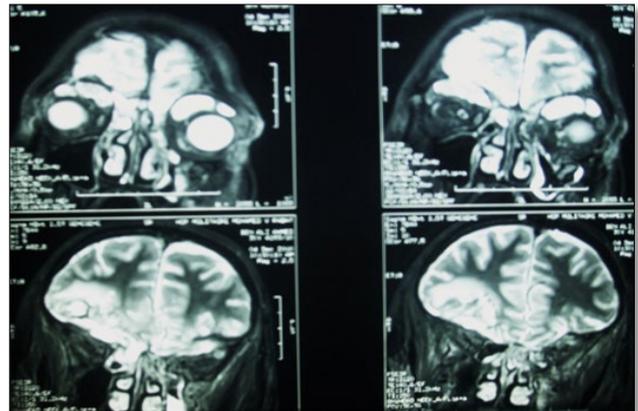


Figure 1. Brain MRI showed increased volume of frontal contusion and an intra-orbital encephalocele bilateral.

DISCUSSION

Messinger [2] classified orbital roof fractures into 3 types: 1) non-displaced, 2) single or multiple superiorly displaced

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fragments into the posterior cranial fossa with or without dural/brain disruption (blowout fractures), and 3) single or multiple inferiorly displaced fragments with or without periorbital penetration (blow-in fractures). Associated facial fractures were reported in about 30% of the cases [1]. The mechanism of roof fracture formation is a force applied to the orbital rim which is transmitted to the adjacent thin bony roof structures, causing them to fracture [2,3]. This can occur even before the rim yields [4].

Another possible mechanism is an explosive rise in intraorbital pressure after injury, forcing thin bone fragments into the brain (blown out) or into the sinuses (blown in) [5]. The incidence of orbital roof fractures is higher in children since an impact to the superior aspect of the orbital rim before age 7 (pneumatisation of the frontal sinuses) cannot be dissipated by the frontal sinus and it is transmitted to the orbital roof [6]. The causes of trauma are usually motor vehicle and motorcycle accidents (as in our cases) with only a few reported cases of direct assaults [7].

In most of the cases the defect allows only the formation of intraorbital leptomeningeal cysts [8] with subsequent rare oculorrhea [9]. The mechanism of herniation of brain tissue into the orbit is in our case an acute injury with formation of a gradient between the pressure in the subarachnoid space (post traumatic increase of intracranial pressure) and in the intra orbital compartment [9]. Frontal contusions were seen in 36% [7] to 43% of the cases [7]. In our cases these were invariably present and the herniated brain tissue was part of the hemorrhagic contusion.

CONCLUSION

The traumatic orbital encephalocele are entities rares. The rigid reconstruction of the orbit is necessary to treat ocular damage and visual deterioration, linked bound to the intra-orbital cerebral hernia.

CONFLICTS OF INTEREST STATEMENT

All authors certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership or other equity interest; and expert testimony or patent-licensing arrangements) and non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

The manuscript has been approved by all authors and has never been published or under the consideration for publication elsewhere.

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