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CASE REPORT

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Fisher's story: orbital floor fracture

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Abstract

Most face traumas affect young adults in the male population. Orbital fractures can have important consequences and are called blow-out, when there is a collapse of the floor or medial wall of the orbit, causing loss of ocular content. They are classified into two types: pure and impure. The diagnosis is made through a detailed physical examination associated with computed tomography.

The forms of treatment, surgical or conservative, as well as the most opportune moment to approach surgically the blow-out orbital fractures, immediate or late, are controversial subjects in the literature.

The objective of this work is to report an unusual case of pure blow-out orbital floor fracture with functional repercussions to the patient, treated surgically with success.

Keywords: *blow-out fracture, orbital floor fracture, face trauma*

Introduction

Most face traumas affect young male adults and nasal fractures are the most common. Among the fractures, the orbital can have important consequences regarding the functional and aesthetic aspects of the damaged structures.

Orbital fractures are called blow-out, when there is collapse of the floor or medial wall of the orbit, generating loss of ocular content, resulting from the herniation of the infraorbital fat to the maxillary or ethmoidal sinus. They are usually the result of direct trauma to the eyeball or the orbital rim, causing distortion and increase in the intra-orbital pressure.

Currently, they are classified into two types. The pure Orbital fractures are isolated fractures of the floor, without affecting the orbital edge. On the other hand, the impure ones, which are associated with fractures of the orbital arch along with the floor explosion, involving other facial bones [1].

The main signs and symptoms of blowout orbital fractures are: enophthalmos, diplopia, visual loss and ophthalmoplegia. To assess the extent of the trauma and the possible clamping of the orbital structures, a detailed physical examination associated with tomographic analysis [2] is necessary. Significant bone defects require, in most cases, surgical repair.

This study aims to present an unusual case of pure blowout orbital floor fracture with functional repercussions to the patient, treated surgically with success [3,4].

Case report

CA 45-year-old male patient was fishing on the banks of a river when a fish jumped out of the water and hit his right eye. After a few minutes, it evolved with an important edema in the right periorbital region that worsened after blowing the nose. He sought the local emergency room, and was later sent to HC-Unesp.

Initially assessed by Ophthalmology, on physical examination, there was limitation of ocular opening, palpebral ptosis, and per orbital subcutaneous emphysema. There was no restriction of extrinsic ocular mobility, diplopia, unevenness, or bone crepitus. Computed tomography of the face bones revealed a fracture of the right orbital floor, with tissue herniation to the interior of the maxillary sinus characterizing a pure blow-out type fracture (Figure 1).

In an otorhinolaryngological evaluation, the patient was medicated with amoxicillin + clavulanate and scheduled elective surgical correction 10 days after the trauma. Patient was submitted to exploration of the orbital floor, through a subciliar access, locating a fracture trait and herniated orbital contents to the interior of the right maxillary sinus. The tissue was discharged and then a titanium mesh was adapted by reconstructing the bone defect in the right orbital floor (Figure 2). Subsequently, the orbital content was uphlodedon the titanium mesh [5].

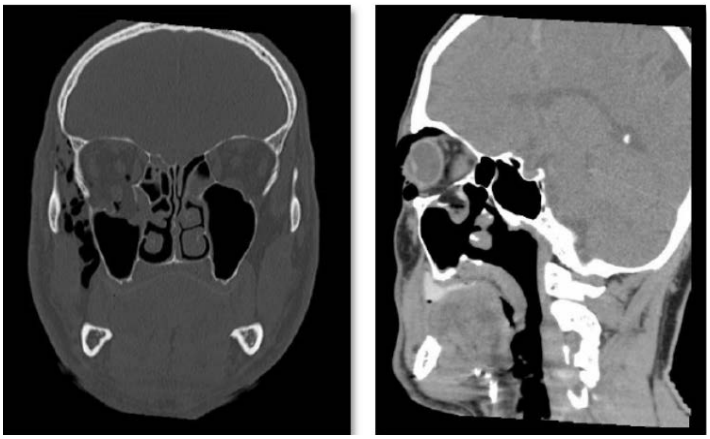

Figure 1. *CT shows orbital floor fracture, with maxillary sinus tissue herniation.*

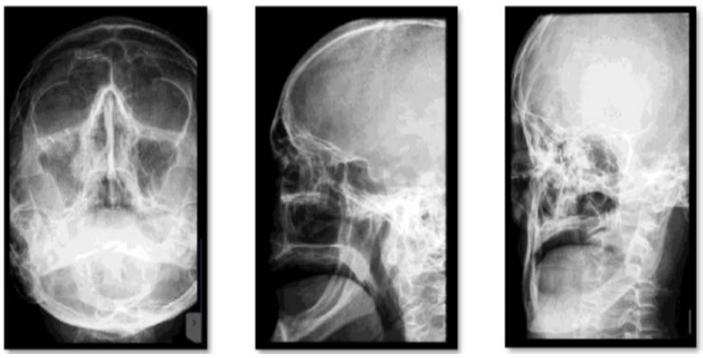

Figure 2. *Rx shows titanium mesh reconstructing the bone defect in the right orbital floor.*

Discussion

The surgical treatment of blowout orbital fractures is considered a procedure of low technical complexity; however, the results can be discouraging. In the literature, the ideal time to approach these fractures remains controversial. Many surgeons advocate the early repair of these fractures in up to two weeks 3-5. Others believe that the signs/symptoms may improve spontaneously and prefer to wait for 4-6 months before the intervention [6].

Amid great divergence, Poeschl et al. [7], in a retrospective study concluded that patients undergoing surgery more than seven days after the traumatic event showed better results regarding diplopia and changes in ocular mobility than patients operated on immediately. According to the author, the surgeries of blow out fractures present excellent results after the anatomical restoration and the functional properties of the orbit [6].

Currently, the decision to operate is recommended for selected patients. Included in this list are patients with: evidence of incarceration of orbital tissue, diplopia, limitation of motility, enophthalmus of more than 2 mm in the first two weeks after trauma and extensive fractures of one or more walls of the orbital cavity, involving more than half of its extent, particularly when associated with a medial wall fracture [8-11]. On the other hand, patients with minimal diplopia or with rapid improvement, good ocular motility, minimal enophthalmos, and a small extension blow-out fracture, without the obvious incarceration of orbital tissues, do not require surgery [8,9].

The choice of access route is variable, depends on the experience of the surgeon and the area to be repaired. The most used are the subciliar, the infraorbital and the transconjugal. However, in some cases, the orbit is accessed by traumatic wounds with continuity solution [12].

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As well as the access route, it is up to the surgeon to use the material to be used in the reconstruction of the orbit according to his experience. The bone defect can be reconstructed by several alternatives, among them: autogenous bone, muscle fascias and alloplastic materials, such as titanium meshes or poly-p-dyoxanon (PDS) slides. The objective is the reconstruction of the orbital floor, restoring volume, function and original esthetics [13].

It is important to note that, regardless of the choice of surgical time, the initial clinical treatment should include local ice packs, bed head elevation, nose blowing and antibiotic introduction [7,14].

Conclusion

There are innumerable mechanisms of face trauma and, among their aesthetic-functional repercussions, those of orbits can evolve with irreversible complications. Thus, in view of an orbital fracture, joint ophthalmologic assessment and, if necessary, surgical intervention to guarantee the integrity of orbital structures, restoring original shape and function is essential.

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