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Case Report

FOREIGN BODY INDUCED BLOW OUT FRACTURE

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ABSTRACT

Blow-out fractures of the orbital floor are typically produced by a blunt, intensive force localized to the orbital region that is usually caused by an object larger than the orbital rim. The aim of this case report is to demonstrate that blow-out fractures can occur not only by a classical trauma mechanism but also from the consequences of a penetrating injury.

An 8-year-old male child was referred to us as a case of restricted superior gaze in his right eye. As per the ophthalmology report, the patient had a fall 2 weeks back with ocular injury. A CT scan confirmed a foreign body within the inferior recti muscles with incomplete fracture of orbital floor of right eye. After few day, the foreign body got extruded out itself but there was restricted upward gaze. The case was successfully managed surgically. We conclude that a blow-out fracture is not only due to blunt injuries but may occur in patients with penetrating injuries also.

INTRODUCTION

Blow-out fractures of the orbital floor are typically produced by a blunt, intensive force localized to the orbitalregion that is usually caused by an object larger than the orbital rim. The lateral and superior orbital walls are more resistant to an increase in intraorbital pressure and sothe fracture usually occurs in the orbital floor along the thin bone that overlies the intraorbital canal. Notably, the orbitalrim is undamaged in pure orbital fractures. Intraorbital soft issue herniation is usually associated with blow-out fractures [1]. In the case presented herein, we report the case of a rare blow-out fracture due to a penetrating injury to the eye.

Case report

An 8yr old male child was refered to us from ophthalmology deptt. As a case of restricted upward gaze (fig.1).

fig.1

As per the ophthalmology report, the patient had a fall 2 weeks back with ocular injury. A CT scan (fig.2) was advised which confirmed a foreign body within the inferior recti muscles with incomplete fracture of orbital floor of right eye. After few days, the foreign body (fig.3) got extruded out itself but there was restricted upward gaze. There was no restriction in other gazes (fig.4).

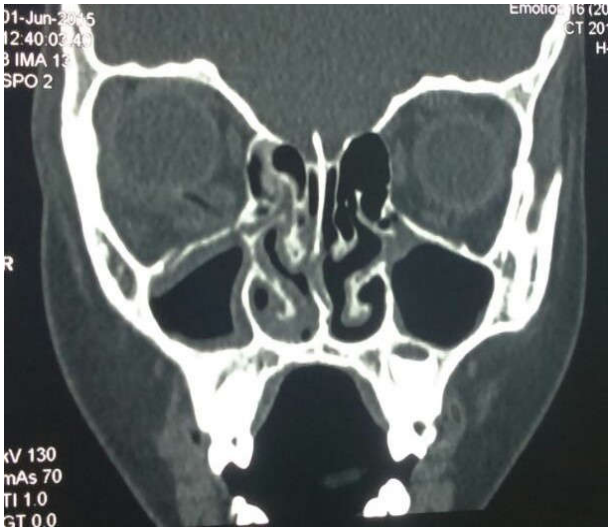

fig.2

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fig.3

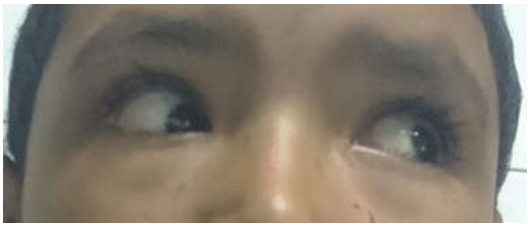

fig.4a

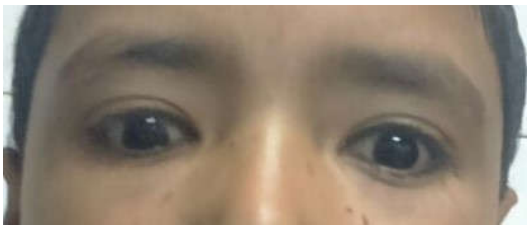

fig.4b

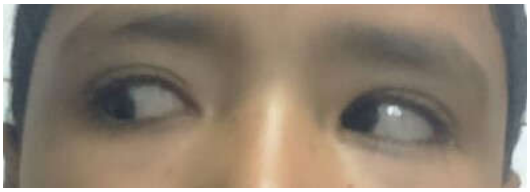

fig.4c

Fig 5

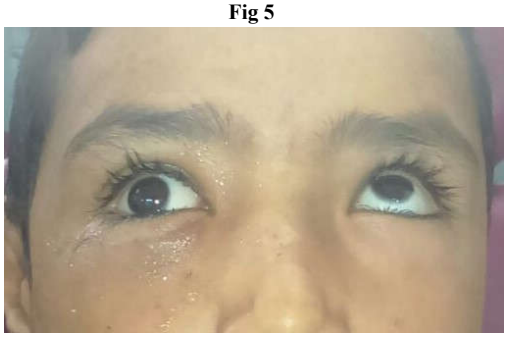

Fig 6

The patient was successfully managed surgically under general anaesthesia. An infraorbital incision was given and orbital floor explored to identify the entrapped tissues (fig 5). The entrapment was sharply dissected free from the floor. The patient was discharged after three days and there was a significant improvement in eye movement in superior gaze. (fig6).

DISCUSSION

The mechanisms of orbital blow-out fractures have been discussed by numerous investigators, but it is widely held that most fractures are due to more than one mechanism 1.One of these mechanisms is known as the hydrolytic theory, which suggests that increased intraorbital pressure causes the displacement of the posterior bulbus oculi such that the pressure conducted to the orbital walls generates the fracture. A previous study reported by Smith and Regan[1] supports this theory. They showed that classical trauma for blow-out fractures causes orbital floor fractures with undamaged rim in an intact orbit, whereas the same trauma cannot cause orbital floor or rim fractures in exenterated orbits. When the force of the trauma increases there is a greater probability that a fracture will occur. In addition, Jones and Evans[2] studied this theory using the quantitative analysis of orbital anatomy. Another theory is known as the buckling theory that suggests that direct trauma to the hard inferior orbital rim conducts the force to the posterior region producing a compression fracture on the orbital floor. McCoy *et al*.[3] and Dodick et al.[4]supported this theory by analyzing the clinical features of orbital fractures. Furthermore, Fujino *et al*. provided empirical support for this theory.[5,6,7]

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