Case Report:
Central Retinal Vein Occlusion Following Spontaneous Orbital Emphysema

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Abstract

Purpose: To document the development of central retinal vein occlusion secondary to orbital emphysema following nose blowing.

Methods: A 55-year-old male developed central retinal vein occlusion secondary to orbital emphysema following nose blowing in the absence of trauma.

Results: With conservative management his central retinal vein occlusion resolved over nine weeks period.

Conclusion: The physician needs to be aware of possible sequelae related to orbital emphysema following nose blowing. A review of the medical literature revealed this to be, to the best of our knowledge, the first reported case of this type.

Key Words: Central retinal vein occlusion – Orbital emphysema – Noseblowing.

Introduction

RETINAL vascular occlusion may occur due to orbital emphysema following vigorous nose blowing. With forceful nose blowing, a dehiscence or perforation can occur between one of the orbital walls and the adjacent sinuses allowing a communication between the orbit and the sinuses. Air then accumulates in the orbit, soft orbital tissue, such as fat, then falls back on this communication, blocking the exit of air and creating a one-way valve. The trapped air can raise the intraorbital pressure therefore the venous circulation pressure build up leading to retinal hemorrhages and macular edema. If severe it can lead to acute compartment syndrome and subsequent proptosis, elevated intraocular pressure and rarely central retinal artery occlusion [1].

Spontaneous orbital emphysema in the absence of any significant trauma can occur as a result of nose blowing, coughing, or sneezing [2-4]. In most cases, orbital emphysema is an incidental benign finding that resolves over with time. In the absence of any acute compartment syndrome, careful observation is the treatment of choice unless an orbital fracture exists involving an infected sinus, in which case prophylactic orally administered antibiotics are recommended [5-7].

To the best of our knowledge, central retinal vein occlusion in a healthy male following nose blowing in the absence of any history of trauma has not previously been reported in literature.

Case Report

A 55-year-old male presented to the researcher at Abha Private Hospital, in April 2012, with a one-day history of sudden onset of swelling of the left periorbital area following forceful nose blowing associated with blurred vision and mild ocular pain. Nose blowing was advised by the ENT specialist to treat his otitis media. The patient denied any history of sinusitis, trauma or any recent head and neck surgical procedure. There was no previous history of any allergies or medical problems.

On examination, his best corrected visual acuity was 20/40 in the left eye, and the intraocular pressure was 25mmHg. Left eye examination showed mild periorbital swelling and non-tender palpable crepitus. There was no ecchymosis, and extra ocular motility was within normal limits. There was no relative afferent pupillary defect.
Slit lamp biomicroscopic examination showed venous tortuosity, diffuse retinal hemorrhages and focal macular edema which was confirmed on fundus fluorescein angiography (Fig. 1).

Examination of the right eye was normal. The patient was advised not to blow his nose forcefully or perform activities that might elevate orbital pressure. He was followed-up closely without prophylactic antibiotics, and the emphysema resolved gradually over a 4-day period, while his retinal hemorrhages resolved over 9 weeks period.

The patient refused focal laser photo coagulation which was offered during his follow-up. One-year follow-up examination showed best-corrected visual acuity of 20/40 and persistent focal macular edema.

Discussion

Retinal vascular occlusion due to orbital emphysema can occur following vigorous nose blowing. However, trauma has been reported to be the most common cause of orbital emphysema. Orbital emphysema after nose blowing is usually associated with recent or past history of skull trauma and in very rare instances it can present spontaneously [1].

Spontaneous orbital emphysema following nose blowing has been reported, in addition to orbital floor fracture and subsequent orbital cellulitis in one case [3,4]. In another instance, bilateral subcutaneous orbital emphysema following nose blowing in the absence of any previous history of trauma in a 61-year-old male has been reported [3].

Our patient had no history of previous trauma and orbital emphysema that developed suddenly after an incident of nose blowing. In the absence of trauma, it has been proposed that increased intra nasal pressure by nose blowing can cause a tear in the thin lamina papyracea which may not be visible in radiological studies, resulting in orbital emphysema [3].

Orbital emphysema has been usually regarded as a benign self-limited phenomenon. In most instances, small amounts of trapped air in the enclosed orbit has no significant consequences. However, large pockets of orbital emphysema may cause elevated intraocular pressure, significant proptosis, ocular motility deficit and in very rare instances vascular compromise secondary to a compartment syndrome [1].

Because of the potential for severe visual loss, the rapid diagnosis and management of orbital emphysema is indicated. Fortunately, our patient had clinical evidence of resolving orbital emphysema. Simple close observation of this patient resulted in the disappearance of his clinical signs. No further radiological study was indicated, since there was no clinical evidence of motility disturbance, significantly elevated intraocular pressure or compressive optic neuropathy. The role of
antibiotics is not clear, but most reports indicate the use of antimicrobial therapy especially in the event of concomitant sinusitis for fear of orbital cellulitis [3,4].

In summary, to the best of our knowledge, this is the first reported case of central retinal vein occlusion following a forceful nose blowing in the absence of any history of trauma. The treating physician needs to be aware of possible sequelae related to orbital emphysema following nose blowing. Close observation is warranted to avoid serious complications.

References


