

Traumatic Orbital Emphysema Following Blunt Trauma and Nose Blowing

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Abstract

Orbital emphysema commonly resolves with no morbidity. However, sight-threatening complications, such as central retinal artery occlusion and ischemic optic neuropathy, may occur, which can result in poor visual outcomes. Plain skull X-ray, which is widely available, is a useful tool in identifying orbital emphysema. We report a case of a 29-year-old gentleman with underlying allergic rhinitis who presented with a painless, progressively increasing periorbital swelling of the right eye, which was aggravated by nose blowing. He had a history of blunt trauma one day prior to the presentation. Visual acuity was unaffected and optic nerve function tests were unremarkable. There was right upper lid swelling with crepitations, right hypoglobus with restricted upward gaze movement, and right conjunctival injection. Intraocular pressure was within normal limits. The posterior segment examination was unremarkable. A plain skull radiograph revealed a “black eyebrow sign” over the right orbit with no obvious orbital wall fracture. Computed tomography of the orbit showed focal indentation over the right lamina papyracea with superior orbito-palpebral emphysema. Systemic antibiotics, steroid nasal spray, and oral antihistamines were initiated with the prohibition of nose blowing. On post-trauma day five, he made an uneventful recovery. High clinical suspicion and thorough clinical examination with the aid of a plain skull radiograph can diagnose orbital emphysema in order for prompt referral to be undertaken to prevent morbidity. Clinicians should consider orbital emphysema as a differential diagnosis for periorbital swelling, especially if there was a preceding trauma.

Categories: Ophthalmology, Radiology, Trauma

Keywords: lamina papyracea dehiscence, case report, black eyebrow, nose blowing, blunt ocular trauma, orbital emphysema

Introduction

Orbital emphysema is benign and commonly resolves with no morbidity [1,2]. However, in certain cases where the optic nerve is involved or central retinal artery occlusion occurs due to high intraorbital pressure, ocular morbidity is significant and the visual outcome may be poor. Hence, it is important to treat orbital emphysema as a potential ophthalmic emergency where timely referral to the ophthalmology team is paramount. We report an unusual case of right orbital emphysema in the absence of orbital wall fracture with good resolution and visual outcome.

Case Presentation

A 29-year-old man presented with a one-day history of progressively worsening painless swelling over the right eye after forceful blowing of his nose. There was a history of blunt force trauma a day prior to the presentation where his right eye was accidentally hit by his wife's elbow. He had a history suggestive of allergic rhinitis since young but has yet to seek medical treatment. He denied any blurring of vision, floaters, or flashes of light. He went to a primary care facility early the next day but was discharged home with reassurance. However, the swelling progressively increased in size hence he went to another primary care facility where a plain skull radiograph was done but showed no evidence of fracture. He was then referred to the ophthalmology team in a tertiary care facility.

On examination, the patient was alert and oriented. Visual acuity was 6/6 OD (right eye) and 6/9 OS (left eye) using the near vision chart. There was no relative afferent pupillary defect. Upon further examination of the right eye, there was a periorbital swelling with erythematous eyelids, as depicted in Figure 1. On palpation, it was non-tender with subcutaneous crepitation around the swelling. Extraocular muscle movement examination revealed a limitation of elevation over the right eye with no binocular diplopia; the left eye was normal. Right hypoglobus was present. Conjunctiva was injected, the cornea was clear, and the pupil was round, 3 mm, and reactive to light. Intraocular pressure (IOP) was 13 mmHg and 12 mmHg over the right and left eye, respectively. Dilated fundus examination was normal. Anterior and posterior segment examination of the left eye was unremarkable. An otorhinolaryngology consult was made and the team performed a nasoendoscopy, which revealed bilateral inferior turbinate hypertrophy suggestive of allergic rhinitis, otherwise, no other abnormalities were detected.

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