

Spontaneous subcutaneous orbital emphysema following nose blowing

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ABSTRACT

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CASE REPORT

A 29-year-old male presented to the emergency department with sudden swelling and pain in the left eye. Pain accompanied by swelling had developed immediately after blowing his nose two days previously. On examination there was left periorbital swelling with crackling sound (crepitus) on palpation suggestive of subcutaneous orbital emphysema. The eye was painful at palpitation. Swelling was not accompanied by redness or elevated temperature.

Bilateral ocular movements, pupillary reactions, funduscopic examination and visual acuity were normal. There was no diplopia or ptosis. The patient had no history of recent trauma to the head and penetrating the orbital area. Orbital computerized tomography revealed accumulations of air above the left lateral rectus muscle in the orbital ceiling and in the anterior palpebral area (Figures 1A–B). There was no bone fracture. The sinuses were normal. Retro-orbital fat planes had a normal appearance. The patient was started on prophylactic antibiotherapy and kept under observation about 24

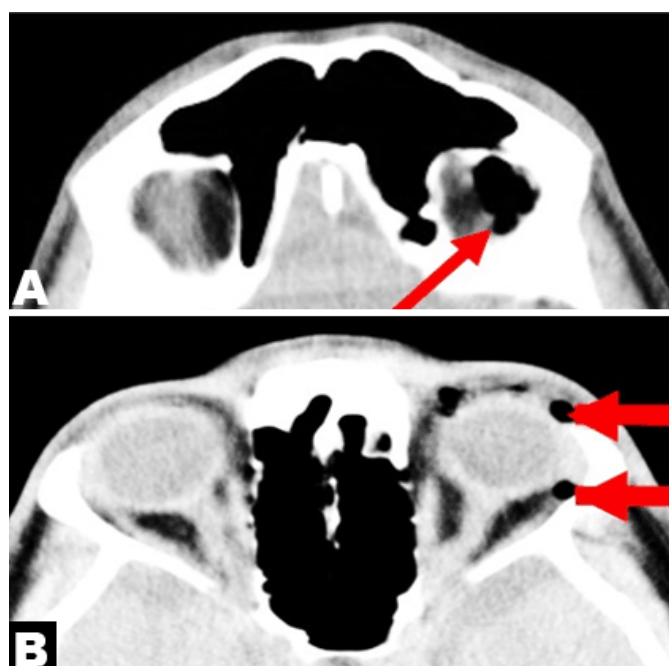


Figure 1(A, B): Axial orbital computed tomography scan. Red arrows showing accumulations of air (A) in the orbital ceiling, and (B) on the left lateral rectus muscle and in the anterior palpebral area.

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hours. As a prophylactic regimen cephalexin was started at a dosage of 500 mg every 12 hours for 5 days. The visual acuity in left eye was not dropped. Follow-up examinations showed no ophthalmological complications because of these normal findings, drainage and decompression were not performed. Swelling regressed entirely and clinical findings were normal by the 10th day of monitoring.

DISCUSSION

Orbital emphysema is a rare complication generally arising after trauma. Most cases involve an orbital bone

fracture causing air ingress. It is a benign and temporary condition that usually develops in the first 24 h after paranasal sinus fractures, and spontaneous absorption generally takes place within two weeks [1]. Orbital emphysema is evaluated by means of palpation and radiological examination, particularly in patients with a history of trauma. Orbital fractures most frequently occur in the thinnest parts of the medial and inferior walls of the orbital bone, the ethmoid, maxillary and frontal sinuses, respectively [2]. The orbital bones are more flexible in children, and thus fracture less [3]. With paranasal sinus mucosa destruction, the fracture line has a valve-like effect and air enters the orbita [4]. Clinical symptoms such as swelling in the eye, closing of the eyelids, extraorbital subcutaneous emphysema, subconjunctival hemorrhage, sensitivity and pain may appear [5]. Rarely, occlusion of the central retina may develop with orbital compartment syndrome resulting from orbital emphysema. Air entering the orbital space may lead to occlusion and sight loss by creating a mass effect on the central retinal artery. Proptosis and diplopia may also occur. There are various sub-classifications within orbital emphysema. In genuine orbital emphysema, the air is localized behind the orbital septum whose integrity is not compromised immediately after orbital fracture [6]. Air can enter the orbital soft tissue during coughing, sneezing or nose blowing. There is no internationally agreed treatment modality for orbital emphysema. However, Hunts et al. published a study on the treatment of the condition in 1994 [7]. Patients should be advised not to blow their noses. Nasal decongestants, antibiotics and steroids may also be given [8]. If findings such as restricted ocular movement, disk edema or loss of sight occur in orbital emphysema, surgical procedures such as drainage and/or direct decompression may be performed.

In diagnosis, the most important radiological imaging technique in determining fracture and the location of the air pockets is orbital tomography [9].

CONCLUSION

Diagnosis of orbital emphysema is generally made with accurate anamnesis, physical examination and orbital tomography. Orbital emphysema is a complication that may frequently arise following orbital traumas, though it should not be forgotten that it can also have non-traumatic causes. Orbital emphysema developing after nose blowing is one such rare condition.

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Ozgur Tatli – Substantial contributions to conception and design, Acquisition of data, Revising it critically for important intellectual content, Final approval of the version to be published

Faruk Ozsahin – Substantial contributions to conception and design, Acquisition of data, Revising it critically for important intellectual content, Final approval of the version to be published

Selim Yurtsever – Substantial contributions to conception and design, Acquisition of data, Revising it critically for important intellectual content, Final approval of the version to be published

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Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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