

Orbital Emphysema as a Rare Complication of Septorhinoplasty: A Case Report

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Abstract: Orbital emphysema following rhinoplasty is an extremely rare complication. Only one case of sub-dermal emphysema was reported in the English literature following rhinoplasty directly in post-operative period and one reported case of sudden orbital emphysema during septorhinoplasty operation. A 29 year old male underwent open septorhinoplasty. Surgery was uneventful and no nasal packs were placed after surgery. Hours after surgery he developed right orbital swelling following forceful nose blowing and sneezing. CT scan showed extensive right orbital and peri-orbital emphysema extending to the right infra-temporal fossa. Emphysema was gradually resolving without any complications and disappeared completely on the 10th day post-operatively.

Keywords: Orbital emphysema, complication, septorhinoplasty, osteotomy.

INTRODUCTION

Orbital emphysema is a relatively uncommon occurrence. It is a well recognized complication that usually develops when there is a defect in the orbital wall from direct or indirect trauma. Air can enter the soft tissue of the orbit following sneezing, coughing, valsalva maneuver or nose blowing [1, 2].

Orbital emphysema following rhinoplasty is an extremely rare complication, only one case of sub-dermal emphysema was reported in the English literature following rhinoplasty directly in post-operative period [3] and one reported case of sudden orbital emphysema during septorhinoplasty operation [4].

CASE HISTORY

A 29 year old male presented to our clinic complaining of nasal obstruction and nasal deformity, with no history of previous nasal trauma or nasal surgeries.

He underwent open septorhinoplasty, with double lateral osteotomies on left side (high-high & low-low) and one lateral osteotomy on the right side (low-low). No nasal packs were placed following surgery. Four hours after surgery he developed right orbital swelling following forceful nose blowing and sneezing (Figures 1-4).

An ophthalmology consultation was obtained. Ophthalmologist assessment showed no visual loss;



Figure 1:



Figure 2:

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Figure 3:



Figure 4:

and apart from orbital emphysema and ptosis, a normal examination. CT scan was also done; which showed extensive right orbital and peri-orbital emphysema extending to the right infra-temporal fossa through the osteotomy tract (shown by arrow) (See CT. 1, 2, 3, 4)

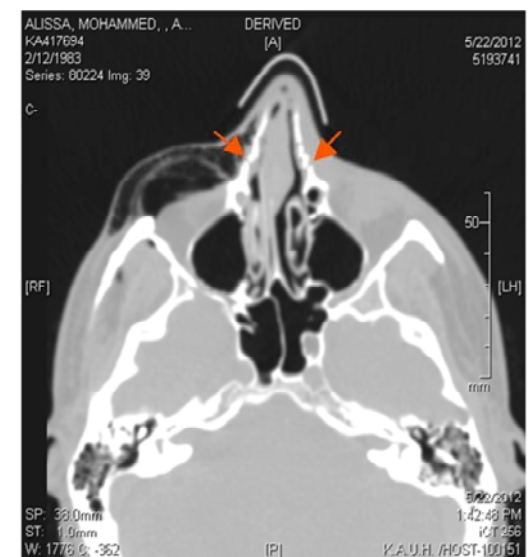
He was on Cefuroxime orally, saline nasal wash and analgesia following the surgery. Patient was advised to avoid nasal blowing and started on oral antihistamine to control his allergic symptoms. Emphysema was gradually resolving without any complications and disappeared completely on the 10th day post-operatively.



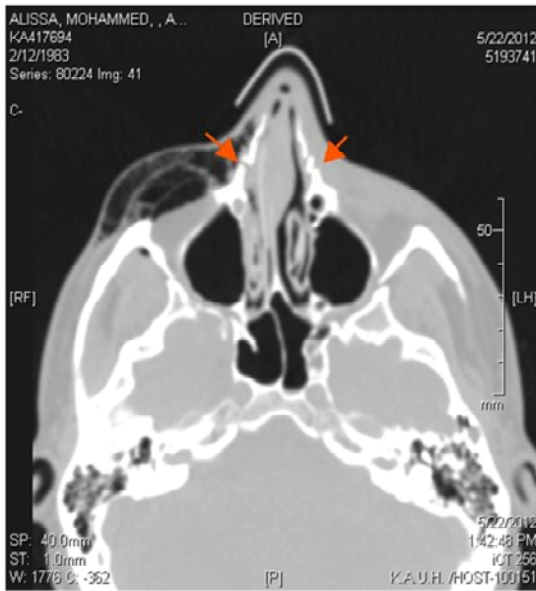
CT. 1:



CT. 2:



CT. 3:



CT. 4:

DISCUSSION

Facial subcutaneous emphysema is usually a result of direct facial, oral or nasal mucosa trauma, including iatrogenic trauma secondary to adenotonsillectomy, dental or sinus surgeries. It can happen rarely following endotracheal intubation. In most cases, cervicofacial emphysema occurs from pneumomediastinum where air ascends to facial planes [5, 6].

Orbital emphysema is a rare condition in the absence of trauma, but few reported cases had spontaneous orbital emphysema after sneezing or nose blowing. Some of these cases reported previous history of nasal surgery or nasal trauma [7]. It is our recommendation that to prevent this complication, it is necessary to treat sneezing or cough using anti-histaminics and other medications.

Our case is the second reported case of orbital emphysema as a complication of rhinoplasty in the post-operative period in the English literature. Findikcioglu reported a case of intraoperative orbital emphysema during septorhinoplasty which was managed by lateral canthotomy and cantholysis [4]. Another case of subdermal emphysema after rhinoplasty was reported by Celebioglu and was managed conservatively [3].

The reason for this complication is the passage of air from the intra-nasal osteotomy tract into the subcutaneous tissue. Also low-low osteotomies go close to the orbital margin from where the air can pass to the orbital tissue. Hence a proper technique for

osteotomy is to be followed and use of sharp osteotomes cannot be over-emphasized. It is also observed that supporting the lateral wall of the nose during osteotomy will prevent free movement of the bones and not give rise to potential space in the osteotomy area for air to collect. Also the use of cold compression during and after the osteotomy plays a role in controlling the ecchymosis and emphysema. In case of early suspicion of this complication, we suggest to pack the nasal cavity post-operatively to prevent further air leak into the subcutaneous tissue.

Orbital emphysema sequelae is generally self-limiting and resolve spontaneously but the potential of serious various complications associated with this condition like loss of vision due to pressure effect and orbital infection resulting from infected nasal secretions entering the orbit gives it great importance.

CT scan is considered the diagnostic standard, plain x-ray is still the most common mean of diagnosing subcutaneous emphysema. CT scan is indicated if complications of facial subcutaneous emphysema are suspected [8].

Management is usually conservative. The role of antibiotic treatment is not clear but it is indicated in cases of sinusitis and common cold. Antibiotic prophylaxis may reduce the incidence of orbital infection, neck abscess and mediastinitis. The usual course is spontaneous resolution over 1-2 weeks in uncomplicated cases [8]. In case of visual problems, needle aspiration or lateral canthotomy and cantholysis are the reasonable treatment options.

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