Emergency Care Journal

Official Journal of the Academy of Emergency Medicine and Care (AcEMC)

eISSN 2282-2054

https://www.pagepressjournals.org/index.php/ecj/index

Emerg Care J 2026 [Online ahead of print]

To cite this Article:

Barakat M, Piva N, Salvatore V. **Please, blow your nose carefully!.** *Emerg Care J* doi: 10.4081/ecj.2026.14875

Submitted: 25 January 2026 Accepted: 30 January 2026 Early access: 12 February 2026

Please, blow your nose carefully!

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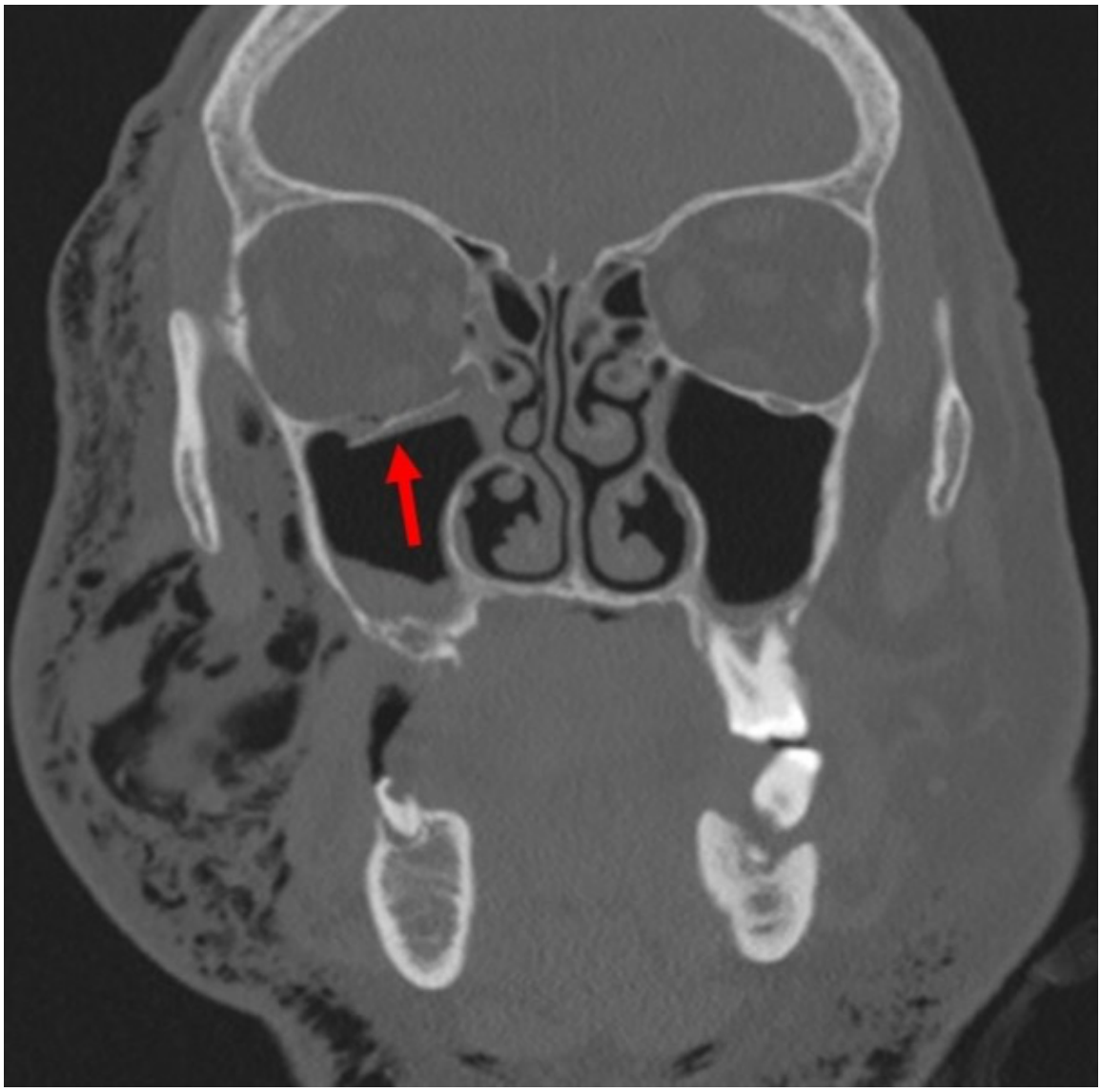
Key words: orbital blowout fracture, periorbital emphysema, nose blowing, computed tomography.



A 77-year-old man presented to the emergency department with sudden right periorbital swelling following nose blowing. His medical history was unremarkable. On clinical examination, his vital signs were normal, the right eyelid was closed due to swelling and there was crepitus of the upper and lower eyelids. The patient underwent a Computed Tomography (CT) scan of the maxillofacial region.

Question

Given the patient's history and CT scan image, which is the most likely diagnosis?

A. Orbital cellulitis
B. Allergic edema
C. Orbital pseudotumor
D. Orbital blowout fracture with periorbital emphysema

Answer

Orbital blowout fracture with periorbital emphysema is the correct answer.

Orbital emphysema has been reported after nose blowing or sneezing in only 43 previous case reports.[1] Nose blowing and sneezing can cause an increase in intranasal pressure, which is transmitted to the orbital walls through the paranasal cavities, causing fractures to them.[2,3] The most common affected sites are the lamina papyracea (the thinnest orbital wall; 64%) and the orbital floor (36%).[1] The risk of fracture is increased by age (sinus walls become thin during pneumatisation),[4] sinus surgery (sinuses act as a "crumple zone" to protect the orbit during trauma)[5] and sinus lesions (osteomas may weaken the orbital walls).[6,7] Clinical manifestations usually include swelling surrounding the orbit with palpable crepitations, proptosis and pain.[1] Orbital fractures can also entrap extraocular muscles leading to ophthalmoplegia.[1] More rarely periorbital emphysema can compress the central retinal artery causing optic nerve ischaemia (orbital compartment syndrome), which manifests as reduced visual acuity, eventually progressing to permanent blindness.[1] CT scan is the imaging modality of choice, while ophthalmological and maxillofacial examination are necessary to evaluate visual acuity and extrinsic ocular motility.[1] Orbital emphysema normally resolves spontaneously within 7-28 days,[1] so it can be managed conservatively with antibiotics (as a prophylaxis for infection) and lifestyle advice on avoid nose blowing.[1,8] Surgical intervention is indicated in the presence of orbital compartment syndrome, paranasal mass and/or ophthalmoplegia.[1]

Because his visual acuity and extrinsic ocular motility were normal, our patient was discharged from hospital with a prophylactic course of oral amoxicillin/clavulanic acid and prednisone and advised to avoid nose blowing for thirty days. The periorbital swelling resolved within seven days and the patient is still doing well.

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Contributions: MB drafted the report of the computed tomography scan of the maxillofacial region, conceptualized and wrote the manuscript. NP helped in drafting the report of the computed tomography scan of the maxillofacial region. VS visited the patient in the emergency department. All Authors approved the final version of the manuscript.

Conflicts of interest: Veronica Salvatore is member of the Editorial Board of Emergency Care Journal. The other Authors declare no conflict of interest.

Availability of data and materials: all data and materials are included in this published article.

Ethics approval and consent to participate: as this was a descriptive case report and data were collected without patient identifiers, ethics approval was not required under our hospital's Institutional Review Board guidelines.

Informed consent: the patient provided consent for the access to medical records at the time of admission.

Funding: none.