Transiently relieving visual impairment due to subcutaneous emphysema: a simple, bedside intervention

Marcel Aries, Ruud Segers, Bas van Bussel, Walther van Mook

Intensive Care, Maastricht University Medical Center, Maastricht, The Netherlands

Correspondence to
Dr Marcel Aries;
mjharries@yahoo.com

MA and RS contributed equally.

MA and RS are joint first authors.

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DESCRIPTION

A 68-year-old patient with a medical history of hypertension and donor nephrectomy was admitted to the intensive care unit (ICU) after video-assisted thoracic surgery (VATS) bullectomy, partial pleurectomy and pleurodesis.

The patient initially presented at the emergency department with right-sided, spontaneous secondary pneumothorax with bullous apical emphysema on imaging. Treatment with chest tube drainage was unsuccessful and VATS was performed. Immediately after this procedure, the patient developed severe subcutaneous emphysema that involved his chest, face and both eyelids. Imaging revealed a partial left-sided pneumothorax, probably as a result of single lung ventilation during the VATS procedure. A chest tube was placed and over the next days, we observed a gradual radiological and clinical improvement. Seven days after ICU admission, he could be discharged to the general ward. On outpatient follow-up at 6 weeks there was a complete resolution of the subcutaneous emphysema and no visual impairment or complaints. Additional lung function tests confirmed the diagnosis of chronic obstructive pulmonary disease with decreased diffusion capacity, consistent with imaging and history of heavy smoking.

During the ICU admission, the severe palpebral subcutaneous emphysema caused inability to open his swollen eyelids resulting in impairment of vision lasting for 3 days. There were neither signs of focal or systemic infection, nor arguments for an allergic reaction.

We instructed the patient to put gentle, but firm pressure on his eyelids, due to which he regained his vision temporarily (see [video 1](#)). This simple intervention, which could be repeated at the patient's own will, enabled him to see his family and caregivers again and allowed him to regain autonomy over this aspect of his critical illness. The intervention also allowed us to check the patient's vision and ruled out the presence of corneal abrasions.

Although no effect on overall outcome or resolution of the subcutaneous emphysema can be expected, the simple intervention evidently and immediately increased the patient's comfort.

In cases where palpebral swelling is not clearly attributable to subcutaneous emphysema associated with pneumothorax, the differential diagnosis includes an allergic reaction and orbital emphysema. Orbital emphysema is most often caused by

Video 1 Patient showing the intervention himself, temporarily relieving his visual impairment.

Learning points

- ▶ Visual impairment due to subcutaneous palpebral emphysema causes severe impairment of the quality of life during hospital stay.
- ▶ Informing the patient of the cause and transient character of the visual impairment is essential.
- ▶ A simple, patient-controlled procedure, which displaces the subcutaneous air hereby transiently improving the visual impairment and the patient's comfort.

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blunt trauma and is seen as a medical eye emergency, warranting urgent consultation of an ophthalmologist.¹

In conclusion, this simple and safe manoeuvre can contribute to shedding some light in the dark days of ICU admission in patients with severe palpebral subcutaneous emphysema due to pneumothorax.

Twitter Marcel Aries @aries_marcel

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REFERENCE

- 1 Roelofs KA, Starks V, Yoon MK. Orbital emphysema: a case report and comprehensive review of the literature. *Ophthalmic Plast Reconstr Surg* 2019;35:1–6.

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