
SHORT COMMUNICATION

Case report

Large subconjunctival emphysema causing diplopia and lagophthalmos

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PURPOSE. *To describe a patient who developed diplopia, lagophthalmos and exposure keratopathy due to a large subconjunctival emphysema.*

METHODS. *A 24-year-old man sustained an injury in his left eye from a compressed air hose. The patient complained of pain and diplopia. He underwent slit-lamp examination, funduscopy and computed tomography.*

RESULTS. *Ophthalmic examination revealed a decrease in vision in the left eye to 0.5, a conjunctival laceration adjacent to the medial limbus, subconjunctival hemorrhage, a large subconjunctival emphysema, lagophthalmos, hypertropia and superficial punctate keratopathy. The posterior pole was intact as were the orbital bones. Two weeks after the injury the conjunctival emphysema, diplopia, lagophthalmos and superficial keratopathy resolved, and visual acuity improved to 1.*

CONCLUSIONS. *Large subconjunctival emphysema can result in diplopia, lagophthalmos and exposure keratopathy. (Eur J Ophthalmol 2003; 13: 86-7)*

KEY WORDS. *Subconjunctival emphysema, Diplopia, Lagophthalmos, Exposure keratopathy*

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INTRODUCTION

Subconjunctival emphysema has been previously described as a result of compressed air injury (1). In such cases, air usually enters the subconjunctival space through a laceration in the conjunctiva although subconjunctival emphysema without a port of entry has also been described (2). Although usually benign, some cases have had vision-threatening sequelae (3), usually due to optic neuropathy or central retinal artery occlusion. However, none of the reports have described large enough emphysemas to cause diplopia and lagophthalmos, sequelae more commonly seen after orbital fractures with or without orbital emphysema or in cases of tension pneumo-orbitus (4).

We report a case of traumatic subconjunctival emphysema causing diplopia, lagophthalmos and secondary exposure keratopathy.

Case report

A 24-year-old man was unintentionally hit in his left eye with a compressed air hose. His medical history was uneventful. The patient complained of pain and vertical diplopia. On examination, his best-corrected visual acuity was RE 1; LE 0.5. The left eye was hypertropic and eye movements were restricted in all fields of gaze. Intraocular pressure was RE 12 mmHg; LE 14 mmHg. Slit-lamp examination of the left eye showed a two-millimeter long conjunctival laceration (Fig. 1a) adjacent to the caruncle, a subconjunctival hemorrhage and a large subconjunctival emphysema (Fig. 1b), causing lagophthalmos. The cornea had diffuse superficial punctate keratitis that stained with fluorescein. A mild flare and cellular reaction was noted in the anterior chamber. Fundus examination was within normal limits as was the ophthalmic examina-

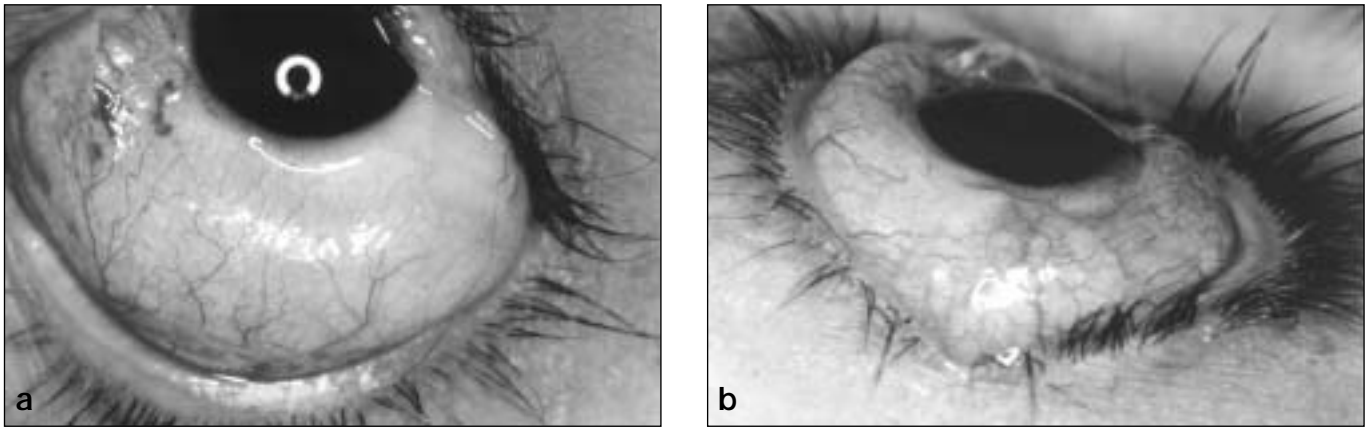


Fig. 1 - A large subconjunctival emphysema causing hypertropia (a) and lagophthalmos (b).

tion of the right eye. Computed tomography (CT) showed no fractures of the orbital bones or significant orbital emphysema.

The patient was treated intensively with lubricating drops and ointment. At examination two weeks after the injury LE visual acuity had improved to 1 and the diplopia, conjunctival emphysema, lagophthalmos, conjunctival laceration and subconjunctival hemorrhage had resolved.

DISCUSSION

Although in some cases traumatic subconjunctival emphysema is accompanied by ocular damage, loss of visual acuity and even optic atrophy (3), no previous report has described a large enough subconjunctival air collection to cause diplopia, lagophthalmos and subsequent exposure keratopathy. Such complications have been reported in more severe cases associated with orbital fractures or tension pneumo-orbitus (4). However, in this case no orbital fractures were seen on CT and the intraocular pressure was within normal limits.

The source of compressed air in previous reports of traumatic sub-conjunctival emphysema was either an air hose (1) or an exploding tire (2). One might assume that while an exploding tire might cause a large area of high pressure, an air hose causes a more localized high pressure point. This might explain why exploding tires are usually associated with more diffuse, bilateral, orbital emphysema (2) while the present case had more localized anterior sub-conjunctival emphysema. On the other hand, depending on the contact

time with the globe, an air hose might inject a larger amount of air into the sub-conjunctiva. In the present case this caused a large sub-conjunctival emphysema leading to lagophthalmos and diplopia.

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