

SUBCUTANEOUS EMPHYSEMA AFTER BICHECTOMY: A CASE REPORT

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ABSTRACT

This case report aims to report a clinical case of subcutaneous emphysema after a surgical procedure of bichectomy, which occurred in the postoperative period after the patient reported a severe sneeze. In addition, it is intended to clarify how to reach a correct diagnosis, its treatment, and how we can avoid such complications in the dental clinic. A Caucasian 22-year-old female patient was referred and attended the Dentistry Clinic in Rio de Janeiro/RJ, Brazil, for a bichectomy, aiming to better harmonize her face. However, the patient returned around 4 hours after the surgical procedure, reporting increased volume after stuffing the nose and sneezing. On physical examination, the patient was diagnosed with subcutaneous emphysema and treated without further complications. The present case report used antibiotic therapy and daily follow-ups with the patient. She did not have pain complaints, infections, or involvement of adjacent fascial spaces. Her full recovery took place within 12 days. The professional must understand the risks involved in the surgery and, in case of a complication, know how to treat it to obtain the solution correctly.

KEYWORDS: *subcutaneous emphysema, dentistry, bichectomy, oral surgery, intraoperative complications*

INTRODUCTION

Subcutaneous emphysema is a rare complication that can occur after dental procedures. It is defined as a passage of air or other gases into soft tissues (1, 2). The most common causes are related to the use of high-speed pens and triple syringes; however, several factors such as facial trauma, vomiting in the trans or postoperative period, the fact of blowing your nose with force, playing a wind instrument and strong sneezing can also cause this complication(1, 2).

Clinically, it presents as a sudden increase in hemifacial volume, generally innocuous, associated with erythema, adenopathies, and its pathognomonic sign of crackling during palpation in the region. This sign differentiates subcutaneous emphysema from other complications, such as facial cellulitis, allergic reactions, angioedema, or hematoma

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(2-5). In most cases, it is self-limiting, resolving independently without any surgical intervention. In some specific cases, a secondary infection may happen, where site incision and drainage are indicated (4).

Thus, the objective of this case report was to present a subcutaneous emphysema case after a surgical procedure of bichectomy, which occurred in the postoperative period, after the patient reported a severe sneeze. In addition, it is intended to clarify how to arrive at a correct diagnosis, its treatment, and how we can avoid such complications in the dental clinic.

CASE DESCRIPTION

This case report had the informed consent signed by the patient. A female patient, leucoderma, 22 years old, was referred and attended the esthetic dentistry clinic Iolanda Roy (Rio de Janeiro/RJ, Brazil) for a bichectomy procedure. The aim was better harmonization of her face. Thus, the professional performed a clinical evaluation of the patient, where allergies to medicines and/or basic diseases were not found; in addition, the patient reported non-use of any continuous medication. The vital signs were: blood pressure 120x80 mm/Hg, respiratory rate 16 rpm, and heart rate 76 bpm. After her facial analysis, the professional indicated that her esthetic-surgical procedure should be performed under local anesthesia in an outpatient manner.

Preoperative prescription of a drug was performed with Dexamethasone 4 mg (2 tablets, one hour before the surgical procedure) to prevent edema in the postoperative period. The procedure began with the application of topical anesthetic to the alveolar mucosa with 20% benzocaine (Benzocaine, DFL, Rio de Janeiro/RJ, Brazil) in the region for 1 minute and followed by anesthetic blockage of the upper posterior alveolar nerve with 1.8 mL of anesthetic solution and blocking of the oral nerve with 0.3 mL, both bilaterally using 2% Lidocaine Hydrochloride with epinephrine 1:100,000 (Alphacaine 100, DFL, Rio de Janeiro/RJ Brazil), deposited through a short dental needle 30G (Unject, DFL, Rio de Janeiro/RJ, Brazil). After 10 minutes, the effectiveness of the anesthesia was confirmed. Then, the procedure was initiated using the Stuzin method, where a 2 cm vertical incision was made in the lower region of the upper vestibule near the second upper molar, followed by a delicate surgical detachment, with the use of a curved hemostatic clamp until the fat is directly visible. The professional apprehended the structure with a straight hemostatic clamp and removed the vestibular portion of the Bichat ball by slight traction in an anteroinferior direction (Fig. 1 A-D).

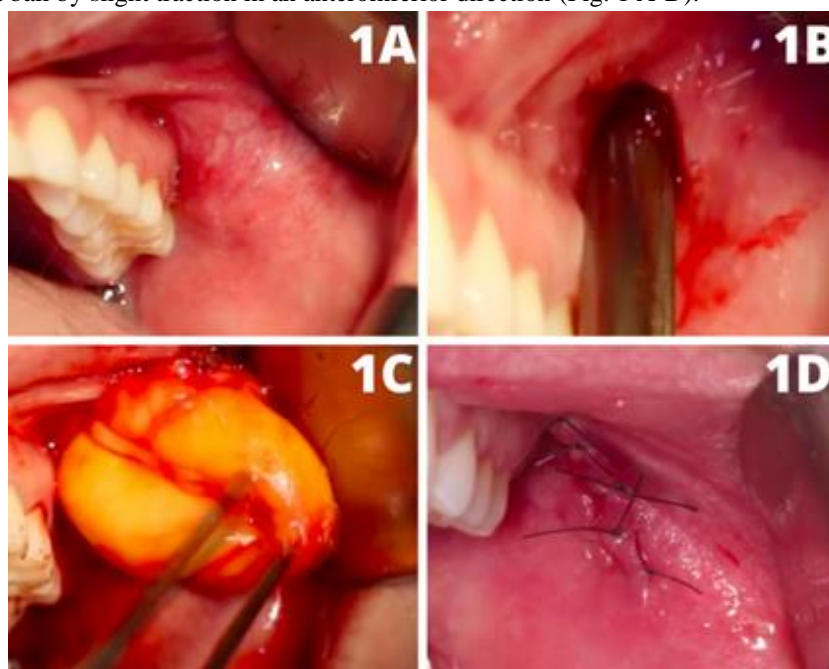


Fig. 1. A): Visualization of the region before the incision; **B):** Penetration of curved hemostatic tweezers to initiate surgical disclosure to expose the Bichat ball; **C):** Bichat ball exhibition; **D):** Surgical synthesis performed with simple stitches.

The surgical warehouse was watered with 20 mL of 0.9% saline (Eurofarma, Rio de Janeiro/RJ, Brazil), followed by a review of hemostasis and synthesis of the region with nylon thread 4-0 (Ethicon Somerville, New Jersey USA). There was no intercurrent in the transoperative period.

In the postoperative period, Amoxicillin with Potassium Clavulanate 875 mg was prescribed every 12 hours for seven days to avoid secondary infection; Ibuprofen 600 mg every 6 hours for three days; and Dipirona Monohydrate 1g

every 06 hours for two days. For the maintenance of oral hygiene, chlorhexidine at 0.12% every 12 hours for ten days was prescribed. In addition, the patient was instructed on specific post-operative care for this type of procedure, such as avoiding sneezing by filling the nostrils, sleeping with a head higher than the body, and applying ice to the face after applying petroleum jelly four times a day.

After approximately 4 hours of the surgical procedure, the patient returned, reporting an increased volume after stuffing her nose and sneezing. On physical examination, the patient presented an increase in volume in the parotid regions, and during local palpation, it was seen to be subcutaneous emphysema since the region had the appearance of a "dry leaf" (Fig. 2). The patient did not report complaints of pain or distress.



Fig 2. The frontal view of the patient returning to the dental clinic shows an enlarged volume in the parotid and orbital region on the right side.

Therefore, medication and postoperative care were maintained with uncomplicated regression over the 12-day period (Fig. 3). The patient was followed for about 14 months, with no recurrence of the complication.



Fig. 3. Frontal view 12 days after the surgery.

DISCUSSION

The manifestation of subcutaneous emphysema followed by dental procedures is often associated with the use of high-speed turbines during extraction procedures or even with the use of an air jet with a triple syringe. However, its appearance may come from oroantral communications, associated with the Valsalva maneuver, prolonged procedures, or even through the intraoral pressure exerted by the patient in the postoperative, the latter being related to the clinical case of this article (2, 5, 6).

Surgery for resection of the adipose body of the cheek, often indicated for esthetic-functional purposes, promotes a reduction of the volume of the middle third of the face and is likely to be performed with local anesthesia in an outpatient setting. The surgical technique involves tissue diffusion and traction of the Bichat ball, located externally to the buccinator muscle and facing the anterior margin of the masseter muscle. The procedure is considered simple and of short duration; however, the potential risks must be weighed beforehand (7, 8).

Although rare, complications can occur, such as bruising, infections, involvement of the parotid gland duct, and facial paralysis (7). Subcutaneous emphysema, although extremely rare, is not ruled out due to anatomical plane dissection during bichectomy. Thus, the patient should be guided in postoperative care, such as sneezing with the open mouth and avoiding musical instruments that require blowing, in addition to the usual care in oral surgeries (2). Moreover, careful surgical management, without lacerations, suturing with well-matched edges can provide an uneventful postoperative.

Early diagnosis decreases the risk of secondary complications and favors intervention, which is palliative (5). The onset of resorption of emphysema occurs in 2 or 3 days, with complete remission between 7 and 14 days (1-3, 5). In

the reported case, there was a significant improvement only after the seventh day and total remission on the twelfth day. The treatment was symptomatic, with analgesics, in case of pain (3).

The authors recommend antibiotic therapy to avoid secondary infections, such as necrotizing fasciitis (1, 2, 5). In this reported case, we started the antibiotic therapy with amoxicillin for seven days due to a possible infection, as there is the presence of a dead space due to the extraction of the Bichat ball.

CONCLUSIONS

The present case was performed as in the antibiotic therapy presented, and the patient was monitored, without complaints about pain, infections, or involvement of adjacent fascial spaces, with complete recovery in 12 days.

The professional must understand the risks involved in the surgery and, in case of a complication, know how to treat it to obtain the solution correctly.

Declaration of conflict of interest

The authors declare that they have no conflict of interest in relation to this scientific article.

Informed consent

All patients involved in this study provided written informed consent, authorizing the use of their before-and-after photographs for scientific publication, conference presentations, and educational materials. Privacy protection was ensured, guaranteeing that no personal data allowing direct identification would be disclosed.

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