

Facial Emphysema Caused by a Dental Extraction

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Abstract

Facial subcutaneous emphysema is often reported as a result of dental treatment. It can be defined as the presence of air in facial subcutaneous tissues purpose. In this short communication, we report a case of a 56 years-old female patient who developed a genial emphysema right after the extraction of the lower left second molar. The diagnosis is discussed as well as the other possible origins of this complication. The aim of this report was to bring attention to the importance of an accurate diagnosis and an adequate management in time in order to prevent serious life threatening complications.

Keywords: Facial Emphysema; Facial Swelling; Oral Surgery; Periodontal Pockets

Abbreviations

Mm: Millimeters; FSE: Facial Subcutaneous Emphysema; 37: Lower Left Second Molar; 24: Upper Left First Premolar; 25: Upper Left Second Premolar; 27: Upper Left Second Molar; g: Gram

Introduction

Facial subcutaneous emphysema is defined as the presence of air in facial subcutaneous tissues. It can be arised during dental care [1], especially endodontic treatment favored by the use of air turbine , the air spray or during root canal irrigation [2]. This complication is not frequent during dental extraction , and when it occurred, the presence of a periodontal pockets is often noticed [3].

Case Report

A 56-year-old female patient consulted a dentist for the extraction of the 37 (lower left second molar). The 37 presented a gum recession of 5 mm, furcation damage and a mobility. As the Tooth was dilapidated, the extraction required the separation of the roots. The procedure went smoothly and the patient did not notice any discomfort until she developed a high genial swelling on the left side slightly reaching the upper eyelid (Figure 1). The swelling was noticed by the dentist immediately after the extraction. It erased the genial nasal groove and gave the patient a sensation of tingling.

The patient was urgently admitted to our dental department.

The extra oral examination revealed that the swelling didn't increase in size (based on the description of the swelling in the reference letter and the patient's interrogatory). By palpating the area, a cracking sound and sensation (crepitus) were elucidated. The patient did not have pain, tenderness to palpation, a trismus or a breathing difficulty.



Figure 1: High genial swelling on the left side slight reaching the upper eye lid right after the extraction of the lower left second molar.

The intraoral examination revealed deep periodontal pockets in the maxillary molars. These periodontal pockets were up to 10 mm and were revealed around the maxillary molars just above the extraction site (24, 25, and 27).

Radiographic examination showed horizontal bone lysis around the 25 and the 27 and angular dental lysis in relation to the distal side of the 27 which are the bridge supports.

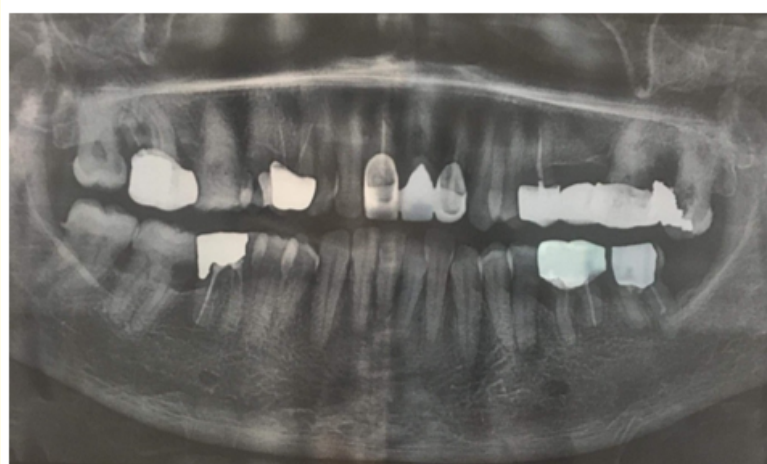


Figure 2: Dental panoramic tomogram.

The diagnosis was subcutaneous emphysema caused by the air released by the dental drill which has been blown by pressure into the periodontal pockets of maxillary molars going up to the upper genial region (place of the swelling).

The prescription was a prophylactic antibiotic therapy with Augmentin 2g per day for 7 days, an anti-inflammatory therapy with Unidex (Dexamethasone) 8mg per day for 5 days, an analgesic therapy with Adol (Paracetamol) 3g per day for 5 days. Given the absence of any signs of gravity (breathing difficulty, truisms) and the evidence of the clinical situation, additional examinations were not required.

Close monitoring sessions have been set. The situation improved within 3 days and almost full resolution occurred within 7 days (Figure 3).



Figure 3: Day 7, almost full resolution of the swelling occurred.

Discussion

Facial Subcutaneous emphysema (FSE) can be defined as the presence of air in facial subcutaneous tissues. This complication can be arised during dental care [1]. The Diagnosis of subcutaneous emphysema depends on the precise history, clinical examination and radiological examination [2].

FSE is generally favored by the use of an air turbine, a high speed hand piece, an air spray [3,4], a syringe for root canal irrigation [5], a laser equipped with an air projection system [6] or rarely due to the intraoral pressure created by the patient [7]. The released air travers through the canals during endodontic treatment or through the deep periodontal pockets to reach nearby regions [1].

If a subcutaneous emphysema is suspected, the first step is to stop immediately the procedure to determine its location and extent.

Although it may look alarming, space emphysema is fortunately usually self-limited and resolves in three to ten days, as the gas is re-sorbed into the bloodstream then eliminated via the lungs [8]. The patient should be monitored until the path of the air has been tracked and is no longer advancing [8]. Urgent surgical decompression may be needed if cardiovascular collapse or large airway obstruction takes place [9].

Serial imaging may be needed to monitor progression and extent of the emphysema, especially if the condition do not to improve or worsens clinically. Computed tomography scans may be required in addition to plain films for further anatomical definition [9].

The administration of antibiotics for potential infections and/or corticosteroids to reduce swelling have been reported in the literature; however, there is no consensus on their use [10].

Conclusion

Subcutaneous emphysema is not a common occurrence during dental procedures. This complication can take place while surgical extractions with hand piece, blowing air directly into the canals during root canal treatment, restorative therapy, crown preparations or the use of air abrasion due to the air blown by pressure into periodontal pockets or the roots. When it arises, it has to be quickly diagnosed and well managed in order to reduce further complications. With appropriate treatment patients show improvement within few days. However, Hospitalization and monitoring are needed for patients with subcutaneous emphysema who present with widespread diffusion over the neck, difficulty in swallowing, or dyspnea.

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