Subcutaneous emphysema, an uncommon complication of dental procedures: clinical aspects and management

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BACKGROUND: *Subcutaneous emphysema (SE)* is the result of air or gas introduction into the fascial planes of the subcutaneous connective tissue. It represents an uncommon complication during dental procedures, but dentists should be able to diagnose it and know its potential life-threatening consequences. SE may result from the use of: an high-speed air-driven handpiece for endodontic, surgical and prosthetic procedures, compressed air syringes, sodium hypochlorite and hydrogen peroxide as root canal irrigants and lasers with air projection systems, such as the Er:YAG. Its usual clinical presentation is characterized by a sudden onset of hemifacial swelling with crepitation detected on palpation.
METHODS: This work, according to modern literature, wants to highlight the right management of SE when it occurs during or after dental treatments.
DISCUSSION: Unilateral facial and neck swelling is the first clinical sign of SE, so it is necessary to make a differential diagnosis with hematoma, allergic reactions and angioedema, that produce similarly a volume increase. SE pathognomonic sign is crepitation on palpation, odynophagia and dysphagia are uncommon. Air can seldom spread through the fascial planes of the neck, resulting in para and retropharyngeal emphysema, with the risk of further extension to chest and mediastinum, causing pneumothorax, pnemopericardium and pneumomediastinum. Rarely air emboli may enter blood vessels because of a pressure gradient, with the risk of patient's death for pulmonary embolism or ischemic lesions. If a subcutaneous emphysema is suspected, it is necessary to stop immediately the procedure to determine its extent and location. This can be achieved by palpation of the skin over the affected area, which may indicate the spread and extent of trapped air. Conventional radiographs (intraoral radiographs and ortopantomographies) are not helpful to diagnose SE, while cone beam computerize tomography (CBCT) can detect the extension of air diffusion more easily. Treatment of SE is based on observation and reassurance of the patient; in fact it is usually self-limited and solves in 3 to 10 days, being the gas reabsorbed into the bloodstream and eliminated through lungs. Administration of antibiotics may be recommended to prevent bacterial superinfections and corticosteroids are indicated to reduce swelling. Incision, drainage and aggressive supportive treatment, such as a chest tube, are sometimes necessary in severe cases.
CONCLUSIONS: In conclusion dentists and oral surgeons should be aware of the possibility of generating iatrogenic subcutaneous emphysema using compressed air, sodium hypoclorite or hydrogen peroxide and dental lasers and they should be able to diagnose and manage it quickly and properly.

Oral ulcer induced by Paan: a case report

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BACKGROUND: The Smokeless Tobacco (ST) is the use of tabacco without combustion alone or in combination with other substances. ST practice include: chewing, sniffing, dipping or application to the skin. Nicotine and other components are so absorbed through the oral mucosa. ST is worldwide diffuse in many countries as India, Pakistan, several Asian regions and North and Centre America, where different associations of tabacco and other substances are used by people of all ages and both genders. For example Paan, also called betel quid, is an indian kind of ST and it is made up by areca nut, slaked lime, catechu, spices and tobacco, folded in a betel leaf. People mostly use paan due to a lack of information and education, being not aware about the harmful effects associated with these products. Paan is chewed because of its stimulant and psychogenic effects and for some perceived beneficial effects, such as mouth freshening, digestion aid, astringency, mood enhancement, tension relief, and oral clearing. However, about 28 chemical constituents present in it are true carcinogens. In particular, areca nut and tobacco cause fibroblasts and DNA damages and increase collagen synthesis and reactive oxygen species (ROS) production; slaked lime has genotoxic effects and increases cells turnover and ROS production too. Oral lesions due to the use of ST include gengival bleeding, lichenoid lesions, leukoplakia, frictional keratosis, ulcers and oral submucosal fibrosis (OSF). Among these conditions, OSF is the most severe, with a potential of degeneration in oral cancer ranging between 1. 9 and 10%. This report presents a case of an oral ulcer secondary to the use of Paan.
CASE REPORTS: A 31-years- old male from Pakistan was referred to the Department of Oral and Maxillo Facial Sciences, Sapienza University of Rome, for a painless ulcer. The medical history was negative and he denied any alchool consuption. A long history of Paan chewing habit was established since he was 17. Intraoral examination showed an ulcer with thick and reddish irregular margins surrounding a white-yellowish surface; the lesion was localized on retromolar mucosa in the left mandible. The patient noticed the lesion since two months. Laboratory tests including complete blood cell count, erihtrocyte sedimentation rate, and liver function were normal. A picture of the lesion was taken in order to evaluate its evolution. The Paan use was forbidden for at least two weeks and during the intense counselling, the carcinogenic potential effects of chewing tobacco was explained. The patient came back for follow-up control after 15 days and the lesion regressed, for this reason no scalpel biopsy was performed. A follow-up program was started to observe any oral mucosal alteration and to motivate the patient to pursue more healthy life habits.
CONCLUSIONS: The greater and greater presence in our country of people coming from areas in which there are different religious and cultural habits creates the neccesitiy for our dental clinicians to enlarge their knowledge about *potential local and systemic risk factors and their impact on oral health*; we also emphasize the importance of a detailed anamesis and of careful intra-oral soft tissue examination in these patients to preserve or re-establish oral healty conditions.

Clinical management of oral proliferative verrucous leukoplakia

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BACKGROUND: The aim of this study is to emphasize the correct and early diagnosis of oral proliferative verrucous leukoplakia (OPVL).