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Case Report

Oral Staining and Malodor Secondary to Tobacco Abuse in Southwestern Saudi: A Case Report

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Abstract

Smokeless tobacco (ST) chewing has detrimental effects on oral tissues including hard and soft tissues; it is often associated with gingivitis/periodontitis, impaired healing, dental caries, and oral mucosal lesions. This case report describes a 25 year-old male patient, who presented to King Khalid University, College of Dentistry (KKUCOD) dental clinic, with a chief complaint of oral malodor and staining. The clinical examination revealed heavy brown stains of the lower lip vermilion border and the facial aspect of the mandibular anterior dentition and localized gingival recession and areas of fenestrations at the attached gingiva of the mandibular central incisors. The patient admitted to an eight year history of cigarette smoking and smokeless tobacco. The heavy staining was noted by the patient to be observable two years ago. The staining was a social embarrassment and the most important issue for the patient.

Keywords: Smokeless tobacco; Gingival recession; Gingival fenestration; Pigmentation

Introduction

Smokeless tobacco (ST) effects on the prevalence and severity of periodontal disease have been established with several systemic hazards. In the past 20 years, the use of smokeless tobacco has almost tripled. Considering the widespread use of ST products globally, the effects of such products on the periodontal tissues may be important [1]. Smokeless tobacco (ST) is an extremely addictive substance with a high rate of use in certain demographic groups, specially adolescents and young adults; it is available in two forms [2]. Snuff is a finely ground tobacco which is either dry (inhaled or sometimes placed in the mouth) or moist (placed in the mouth). Smokeless tobacco comes in three forms: loose, leaf, plug or twist. All forms of chewing tobacco are held or chewed in the mouth. There are 2,550 known compounds in processed tobacco in addition to nicotine [3]. Smokeless tobacco contains at least 30 metals including nickel and a radioactive compound called polonium-210. Formaldehyde and nitrosamines are also found in smokeless tobacco. All of these compounds have been known to cause cancer [4,5]. Snuff and chewing tobacco contain high concentrations of sodium (salt), swallowing tobacco juice containing sodium salt may contribute to the risk of high blood pressure. High blood pressure has been found to be a problem for a number of smokeless tobacco users [6,7]. This increase may give you a feeling of preparedness. However, the elevated blood pressure and heart rate actually decreases your heart's performance and thereby reduces your overall stamina [8]. Several kinds of sugar are found in unprocessed chewing tobacco and added during its processing which may cause dental cavities specially root caries frequently associated with gingival recession [7]. Cessation of smokeless tobacco use associated with withdrawal symptoms, including: irritability, impatience, anxiety, tension, poor concentration, sleep problems, changes in appetite, and craving [8]. The A seer region of southwestern Saudi Arabia is known for both a high rate of Khat chewing and tobacco use. The purpose of this paper was to report a case of 25 year old Saudi male who presented with oral malodor, gingival pigmentation and unaesthetic appearance due to unique intensifying pigmentation on lower lip mucosa and vermillion border (Figure 1&2).

Case Presentation

A 25 years old male was referred form the Division of Diagnostic specialty clinics to the Division of Periodontics specialty clinics at King Khalid University College of Dentistry, Abha, Saudi Arabia, presenting with oral malodor and unaesthetic appearance due to unique heavy dark brown stains on lower lip vermillion border and mucosa, labial surfaces of lower anterior teeth with localized gingival recession and areas of fenestrations at attached gingiva of lower central incisors (Figure3,Figure 4). The main complaint was related to general social handicap and embarrassment due to bad oral smell and unaesthetic appearance with psychological stress due to phobia of failure in future marriage plan. The patient has history of cigarette

Figure 1: Preoperative view showing pigmentation of labial mucosa & gingival and teeth staining.

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Figure 2: Preoperative view showing pigmentation of lower lip vermillion border.

Figure 3: Gingival fenestration.

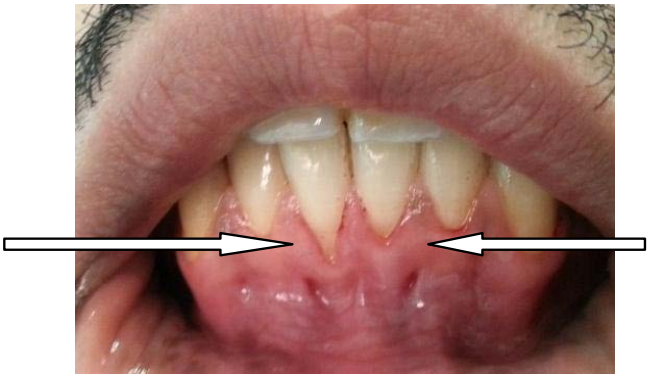

Figure 4: Gingival recession.

smoking accompanied with smokeless tobacco chewing since 8 years ago. Clinical examination of this individual revealed that: there is oral malodor exceeding socially accepted level (360 ppb) was measured by using Halimeter devicez [9] (following manufacturer instructions). Average gingival recession was 3.5 mm measured using calibrated periodontal probe graduated in millimeters (University of Michigan '0' probe with William's markings; Hu Friedy, Chicago, USA, under a standard dental light with patient seated in a semi-supine position in a standard dental chair) in the lower central incisors, besides two areas of gingival fenestration (window like defect at attached gingival) at attached gingiva of lower central incisors. Heavy dark brown/black pigmentation score 3 on labial mucosa and vermillion border of lower lip and gingival of lower central incisors Figure 5 (according to Dummetts oral pigmentation: Score 0 (Pink tissue-no clinical pigmentation) suited the clinical assessment of non-pigmented and the score 3 (Deep brown or blue/black tissue -heavy clinical pigmentation) [10,11]. After thorough discussion with the individual a treatment plan was scheduled as following: 1.The patient requires a tobacco cessation program resulting in the elimination of tobacco utilization. 2. Patient oral hygiene education and instruction. 3. Hygiene appointment for prophylaxis and the removal of tooth enamel stains. 4. Consideration for gingival surgery to correct gingival recession. 5. Consideration for de-pigmentation laser therapy (Figure 6).

Discussion

Nowadays, ST chewing habit spread among youth in both developed and undeveloped countries with almost same percentage. In Sri Lanka various forms of smokeless tobacco products, 15.8% used smokeless tobacco products and its use is three-fold higher among men compared to women. Some 8.6% of the youth and adolescents are current users of smokeless tobacco [12]. Notably,

Figure 5: Labial mucosa & gingival pigmentation score 3.

Figure 6: After first visit of scaling & polishing.

in Saudi Arabia 35.4% of these oral cancers were referred from one province – Jizan in south western of Saudi Arabia when compared to the whole of the KSA population. These data suggest that there is a relationship between the factors smokeless tobacco product (shamma), where shamma is common [13]. Several cross-sectional studies showed a higher prevalence rate of leukoplakia among smokers, with a dose-response relationship between tobacco use and oral leukoplakia, and intervention studies show a regression of the lesion after stopping the smoking habit [14]. In a Swedish study [15] stated positive correlation between tobacco use and leukoplakia, frictional white lesion, coated tongue, hairy tongue and excessive melanin pigmentation, while a negative correlation was observed for geographic tongue and aphthous ulcers. Approximately 70% of the lesions were associated with local irritants as dentures, tobacco [16,17]. The excessive use of tobacco products has been associated with various lesions in the oral cavity. Tobacco-associated lesions include tooth/ restorative materials stains, gingival/ tooth abrasions, smoker's melanosis, acute necrotizing ulcerative gingivitis and other periodontal conditions, burns and keratotic patches, black hairy tongue, nicotinic stomatitis, palatal erosions, soft tissue erythema, leukoplakia, epithelial dysplasia and squamous-cell carcinoma [18,19]. Tobacco use affects the surface epithelium, resulting in changes in the appearance of the tissues. The changes may range from an increase in pigmentation to thickening of the epithelium (white lesion). Tobacco use can also irritate the minor salivary glands on the hard palate decreasing ability to taste and smell [21,22]. Nearly three-quarters of the patients with the tobacco habit had oral mucosal lesions, ST users tend to have more severe gingival recession (REC) and clinical attachment loss (CAL) and a greater proportion of sites with higher values of REC and CAL compared with never-users. The greatest increase in severity of CAL was found to be localized to sites on mandibular teeth, buccal surfaces, anterior and molars, which may be a result of the retention of the ST product in the oral cavity [22]. This description is supported by the findings in the reported case of this work in which the patient has gingival recession & clinical attachment loss in lower centrals besides the unique finding in this case which is the unique heavy pigmentation in labial mucosa and vermillion border of lower lip and attached gingival along with bad smell. Here it is worth to mention that the gingival fenestration is also a unique characteristic finding in this case.

Conclusion

Public health programs towards smokeless tobacco use habit are needed and to be intensified and targeted to vulnerable younger age groups in the community.

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