

Oral melanosis and severe periodontitis in toombak users: a case report

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ABSTRACT

Background: Toombak is a traditional type of smokeless tobacco used by people in Yemen, especially in Dawan Valley, Hadramout Province, Yemen. The use of smokeless tobacco may be considered as a predisposing risk factor for several oral diseases.

Case Presentation: This paper presents two cases. The first is that of a 27-year-old male toombak user with severe periodontitis and oral melanosis. The second case is that of a 44-year-old male toombak user with oral hypermelanosis. The patients were subjected to dental cleaning. Quit toombak counseling was conducted, and the patients were educated about the adverse effects of toombak usage.

Conclusion: Oral tissues are severely affected by toombak usage. Thus, comprehensive toombak prevention programs should be implemented to reduce toombak-associated diseases.

Keywords: Toombak, smokeless tobacco, melanosis, periodontitis, case report.

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Background

In Yemen, several varieties of smokeless tobacco are widely used, including shammah, tombol, and toombak. Toombak is commonly used in Dawan Valley, Yemen. It is composed of sun-dried powdered tobacco leaves mixed with ash [1] (Figure 1). Toombak is usually placed in the buccal lower or labial vestibules [2], as shown in Figure 2. The association between traditional types of smokeless tobacco in Yemen and the development of oral diseases has been rarely considered.

Al-Tayar et al. presented the periodontal status of 346 Yemenis in Dawan Valley, Yemen. In their study, multiple logistic regression analysis revealed that regular toombak users were 6.62 times more likely to develop periodontal pocket than those who had never used it [1].

As regards toombak-induced alterations in oral mucosal tissues, Al-Tayar et al. [3] found that the participants who were using toombak at the time were almost 13 times more likely to develop oral leukoplakia-like lesions than those who had never used it. In terms of oral mucosal melanosis, several studies have confirmed the association between smoking and such lesion [4] but not with smokeless tobacco. However, Naveen-Kumar et al. [5] observed tobacco-associated melanosis most frequently in conventional smokers, followed by reverse smokers and smokeless tobacco group. Current clinical reports describe various intraoral findings that suggest the oral mucosal changes and the degenerative and destructive magnitude of periodontal tissues in patients with toombak use history of more than 8 years.



Figure 1: Toombak.

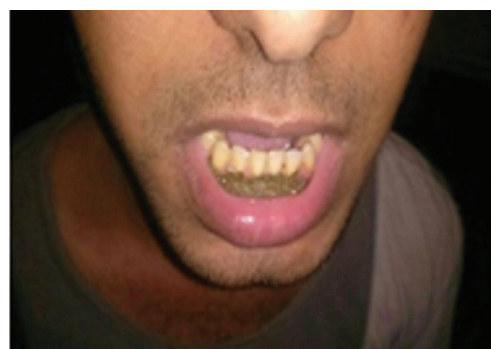


Figure 2: Toombak in the lower labial vestibule of the oral cavity.

Case Presentation

The first case is of a 27-year-old male who visited Al-Ebtessamah Dental Clinic in Dawan Valley, Yemen, with the chief complaint of pain in the lower gum from the

right to left canine region. The patient was a toombak user for more than 8 years. His habitual placement of toombak was on the lower right muco-buccal vestibule and sometimes on the lower labial vestibule. Clinical examinations showed severe deposition of dental calculus and grade III mobility of mandibular left central incisor and mandibular right canine. Periodontal probing revealed a pocket depth ranging from 6 to 10 mm in the mandibular anterior region. Oral mucosal pigmentation was found on the site of habitual toombak placement (Figure 3). The case was diagnosed as chronic periodontitis and oral mucosal melanosis induced by extraction was planned for the mandibular left central incisor and mandibular right canine. The patient was also subjected to planned sessions of scaling and root planning and was instructed to maintain good oral hygiene. Analgesic and chlorhexidine mouthwash were prescribed.

Quit toombak counseling was conducted, and the patient was educated about the adverse effects of toombak usage.

The second case is of a 44-year-old male who presented to the Al-Ebtessamah Dental Clinic in Dawan Valley, Yemen, with a complaint of mandibular anterior teeth discoloration with black pigmentation on the lower anterior muco-labial vestibule (Figure 4). Toombak use history was 8.5 years. The pigmentation was found on the lower anterior muco-labial vestibule where the patient typically placed the toombak. The changes were asymptomatic. This pigmentation was clinically diagnosed as oral melanosis aggravated by long-term toombak usage.



Figure 3: Chronic periodontal destruction and changes of oral melanosis at lower right muco-buccal vestibule.



Figure 4: Changes of oral melanosis at lower anterior muco-labial vestibule.

The patient was subjected to scaling and polishing. Quit toombak counseling was conducted, and the patient was educated about the adverse effects of toombak usage.

Discussion

The reported cases involved advanced loss of periodontal tissues obviously related to toombak usage of more than 8 years. A possible contributing mechanism in the development of severe periodontal disease is the cholinergic effect of toombak along with the calcium salt in the saliva produced during hypersalivation causing calculus deposition. The heavy calculus deposition can then destroy periodontal tissue in smokeless tobacco users [6]. This finding is confirmed by a case report presented by Giri et al. [7], which showed that smokeless tobacco in the form of betel nut chewing is associated with advanced periodontal tissue loss. The present case report is also supported by the study of Parmar et al. [8], which revealed the significantly higher development of periodontal pockets and gingival recession in smokeless tobacco users than in non-users.

The color change of the oral mucosa is due to the accumulation of one or more tissue pigments. The pigments associated with mucosal discoloration could be classified as endogenous, such as melanin pigments, and exogenous, such as drug-related pigments. Melanin-associated lesions are the most common pigmentations. Both the smoked and smokeless forms of tobacco induce oral mucosal changes, among which intraoral mucosal pigmentation is a clinical manifestation [9]. Tobacco use, especially smoking, may augment melanin production, which may provide a biological defense against the noxious agents present in tobacco smoke [10]. Our report stated that toombak may induce oral melanosis. This result is supported by the report of Kumar and Chaturvedi [11], which revealed brown pigmentation in the ventral aspect of the tongue of a patient who used smokeless tobacco, specifically, chewing tobacco, for 6 years.

Conclusion

Toombak affects the oral tissues of its users. Thus, comprehensive toombak prevention programs should be implemented to reduce toombak-associated diseases.

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List of Abbreviations

None

Consent for publication

Informed consent was obtained from the patients to publish this case.

Ethical approval

Ethical approval is not required at our institution for publishing a case report in a medical journal.

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Summary of the case

Patient (gender, age)	1	Males, 27 and 44 years old
Final Diagnosis	2	Oral melanosis and severe periodontitis for the first case and oral melanosis for the second case
Symptoms	3	Pain in the lower gum for the first case and symptomless <i>for the second case</i>
Medications	4	Analgesic and chlorhexidine mouthwash for the first case and no medications for the second case.
Clinical Procedure	5	Extraction was planned for the mandibular left central incisor and mandibular right canine, and scaling and root planning for the first case and scaling and polishing for the second case
Specialty	6	Dental Public Health