

Tobacco Pouch Keratosis: A Case Report

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Abstract

Tobacco pouch keratosis is a condition associated with habitual smokeless tobacco chewing. It is characterized by hyperkeratosis and formation of non-scrapable white patches to form wrinkled pattern with common sites involved being are buccal mucosa, in between teeth and gums that is the vestibule. The appearance of wrinkled texture usually develops in between 1 and 5 years of tobacco use. Educating and motivating a patient are very important in the prevention as well as cure of tobacco pouch keratosis.

Keywords: Hyperkeratosis, Smokeless tobacco, Tobacco pouch.

INTRODUCTION

Habitual chewing tobacco leaves or snuff dipping results in the development of a hyperkeratotic well-recognized white mucosal lesion in the area of tobacco contact called smokeless tobacco keratosis or tobacco pouch keratosis. It is also known as snuff dippers' keratosis or snuff dipper's lesion. Tobacco pouch keratosis is a condition that causes thick white patches to form on mucosa in mouth which has come in chronic contact with smokeless form of tobacco. Mucosa appears pale wrinkled or folded in appearance. This may be interspersed with areas of patchy uneven tone. Common sites may include the buccal mucosa, vestibule.^[1]

CASE REPORT

A 32 year old male patient named Arun Kumar, resident of Purulia, salesman in a garment store by profession; reported to the department of oral medicine and radiology, Awadh Dental College and Hospital; with a chief complaint of whitish discoloration of lower lip region for 2 months.

The patient noticed the discolouration 2 months ago. The lesion has not increased or decreased in size since he noticed it. There is no history of associated pain or burning sensation.

This is the patient's first dental visit. There was no significant medical or drug history reported. The personal history of the patient revealed, the patient consumed mixed diet, with fair oral hygiene practices. The bowel, bladder, and sleep habits of the patient were found to be normal.

Habit history revealed that the patient is a tobacco chewer for 4 years. He consumes tobacco in nascent powdered form (1 packet per day). Has a habit of keeping the quid in the lower vestibule for around 10 min to 2 h before spitting it out (depending upon work schedule). Generally rinses his mouth with plain water after chewing and spitting out the tobacco quid.

Patient also has a history of alcohol consumption for 6 years (occasionally) consumes 500 mL a day whenever he consumes alcohol.

The general physical examination revealed; patient was moderately built, moderately nourished, well oriented to time space and cooperative. Gait and posture appeared to be normal. No signs of vital parameters such as pallor, icterus, cyanosis, clubbing or oedema present. The patient was afebrile, with blood pressure 120/80 mm of Hg, heart rate 68 beats/min and respiratory rate 15 breaths/min.

Intraoral examination; shows a white lesion appearing on the lower labial mucosa (Figure 1). Tongue appears normal; buccal mucosa, palate, and gingiva also appear normal.

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On inspection; there is a white lesion with irregular border, granular surface seen on lower labial vestibule. Measuring about 4 cm in greatest dimension mesio-distally (extending from region of 33 to 43) and 2.5 cm in superior-inferiorly (extending from vestibular sulcus to vermilion border of the lower lip). Surrounding vestibular mucosa and gingiva appears normal in color.

On palpation of the lesion, it was normal in temperature, surface rough, and non-tender non-scrapable. No blanching seen. No thickening or fibrotic bands felt no induration present. On manipulation of the oral mucosa, there is no sign of disappearance of lesion.

A provisional diagnosis of tobacco pouch keratosis of lower labial mucosa was given.

The differential diagnosis considered are: chemical burn, leukoplakia, and candidiasis.

A cyt smear, vital staining was carried out. There were no dysplastic features found. Therefore, a final diagnosis of tobacco pouch keratosis was given.

The patient was treated by behaviour modification program and counseling about the ill effects of tobacco use and patient educated about his lesion. Antioxidant therapy for 3 months, diet modification advised (food rich in antioxidants), the patient was re-called after 2 weeks for follow-up. Oral prophylaxis was carried out for the patient.

DISCUSSION

Tobacco pouch keratosis is a white mucosal lesion in the area of tobacco contact and also called as smokeless tobacco keratosis or snuff dipper's keratosis.^[2]

Tobacco pouch keratosis is most commonly found in the lower anterior vestibule followed by posterior vestibule. The lesion initially appears thickened and corrugated, and at a later stage, it becomes more leathery.^[3]

Chemistry of smokeless tobacco

Smokeless tobacco contains several known carcinogens like (polonium 210, nitrosoamines, volatile aldehydes, polycyclic

aromatic hydrocarbons) including N-nitrosomnicotine proven to cause mucosal alteration.^[2,4]

Pathophysiology

Experimental studies have shown; smokeless tobacco has effects on:

Cell proliferation, apoptosis, activation of inflammatory mediators, and mutation may occur in tobacco chewing, leading to oral cancer.^[2]

Pure nicotine and smokeless tobacco extracts have been compared for their oxidative stress actions, by measuring their generation of reactive oxygen species. Pure nicotine has been found to be less toxic than smokeless tobacco extract with equivalent dose.

Snuff is finely powdered tobacco appears to be much more likely to cause such lesions. Duration of exposure is important in the production of mucosal damage.^[4]

Clinical features

Mucosal alteration in the area of contact. Most common area anterior mandibular vestibule followed by posterior vestibule. Surface mucosa appears whitish grey and is granular or wrinkled. In some areas folded character may be seen (tobacco pouch). Gingival recession or periodontal destruction may be seen in the immediate area of contact. Sometimes erythroplakic component may be present.^[2,5]

Histopathologically

Microscopically epithelium is hyperkeratotic and thickened. Characteristic vacuolar edema in the keratin layer^[2,5] (Figure 2).

Treatment plan

The National Cancer Institute (NCI) suggests using simple, brief, effective messages for education, prevention and cessation of tobacco addiction services, to reinforce the non-user and also to prevent a return to use for those who have stopped.^[6]

In conjunction with support program, such as group therapy or behavioral therapy; the following drug therapy can be done. Antioxidant therapy, nicotine replacement therapy such as nicotine transdermal patch, nicotine nasal spray, nicotine gums, bupropion (anti-depressant), varinecline (ach receptor partial agonist), follow-up in 1–2 weeks.^[3]



Figure 1: Intraoral examination; shows a white lesion appearing on the lower labial mucosa

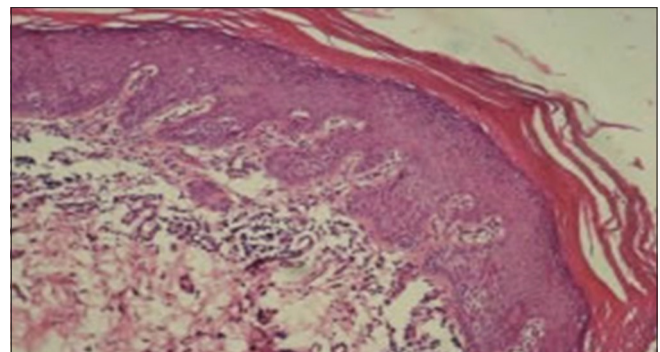


Figure 2: Histopathological picture

A case published in the journal of the American medical association was the 1st to document the efficacy of bupropion for the treatment of smokeless tobacco. Four-week behavior modification bupropion 1 week (150 mg bid) drug, after 1-week craving reduced, After 5 weeks, patient was tobacco free, 8-month follow-up, patient remained tobacco free.

1. Cessation of habit usually leads to normal mucosal appearance in 1–2 weeks
2. If lesion remains for more than 1 month after cessation of habit.

Then biopsy should be done. (Or in case clinical atypia present such as ulcer, erythroplakia, intense whiteness, verrucoid/papillary surface).^[3]

According to NCI recommendations; the clinicians may use 4 A's as follows:^[7]

1. Ask about the tobacco use
2. Advise patient to quit smoking
3. Assist patient in quitting
4. Arrange follow-up.

Non-tobacco snuff products (mint, cove flavored, etc.).

Literature reveals that tobacco associated keratosis has been established as a risk factor for developing oral carcinoma. However, they considered a lower risk for malignant transformation when compared to leukoplakia. Chronic use of smokeless form of tobacco can result in nicotinic dependence. Further, researchers have also proved that chronic use of tobacco during younger age especially adolescence can disrupt brain circuits and affects cognitive abilities, attention deficits, and psychiatric disorders.^[8]

CONCLUSION

Oral physicians play an important role in early detection of tobacco associated conditions. Such conditions are more prone to transform into malignancy. Therefore, timely counseling and by educating the patient about the harmful effects of tobacco use is very crucial supported by nicotine replacement therapy as needed.^[9]

Tobacco induced keratosis has four times greater chances of developing squamous cell carcinoma. Therefore, timely intervention is essential.

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