

**MUCOSAL CHANGES RESULTING FROM BETEL
QUID AND TOBACCO CHEWING****PRATISHTA JAIN*¹ AND ARVIND M²**¹*Final year BDS, Saveetha University, Chennai, India.*²*Department of Oral Medicine and Radiology, Saveetha University, Chennai, India.***ABSTRACT**

Oral cancer, a malignant neoplasm arising from dysplastic epithelium most commonly arises from pre-existing potentially malignant disorders (PMD). Tobacco in various forms is the commonest cause for the genesis of PMD. In the Indian subcontinent, use of smokeless tobacco is very high and contributes to the development of PMD and oral cancers. Betel quid and tobacco are used in various forms in different parts of India. Quid is a product obtained by mixing basic ingredients like tobacco, areca nut to which other constituents like slaked lime are added. These ingredients are then placed in a betel leaf and placed in the oral mouth in contact with the mucosa and chewed. This habit of betel quid usage and chewing tobacco leads to lot of oral mucosal changes. These changes should be identified by the dentist in the early stages and suitable treatment initiatives should be taken to prevent oral pre cancer and cancer.

KEYWORDS: Betel quid, betel leaf, potentially malignant disorders, mucosal changes**PRATISHTA JAIN**

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INTRODUCTION

Oral mucosal lesions due to smoking tobacco are well reported in the medical literature. Common changes due to smoking tobacco include stomatitis nicotina palati, leukoplakia, erythroleukoplakia. The same is not applicable when it comes to habits related to using tobacco in a chewable form. The various forms of chewable tobacco have variations amongst countries based on ethnicity, cultures and social practices. Recently, there is increased interest to study mucosal changes related to tobacco chewing, areca nut chewing and betel quid use. Quid is substance made by combining two or more ingredients. The basic content is tobacco and areca nut. In India quid is also called *Paan* in the local dialect. To increase flavor additives like slaked lime, sweetening agents clove spices are added. These constituents are then wrapped in a leaf called betel leaf, rolled folded and then placed in the mouth. This quid or paan is in contact with the oral mucosa. Quid users either both chew the paan and swallow the ingredients or after a prolonged contact with the oral mucosa they spit out the content. Each ingredient in the quid has its own deleterious effect on the mucosa and eventually they act synergistically leading to the development of oral pre cancer and cancer. The first initiative to bring about a consensus on the oral mucosal changes, to betel quid use and tobacco chewing was done in 1996 in Malaysia where a workshop was held in this regard. In this workshop, basic terminologies like, definition of quid, criteria for recording quid or tobacco chewing habits were made¹.

Definition of Quid

The workshop recommended that the term "quid" should be defined as "a substance, or mixture of substances, placed in the mouth or chewed and remaining in contact with the mucosa, usually containing one or both of the two basic ingredients, tobacco or areca nut, in raw or any manufactured or processed form". Thus, betel quid is to be considered as a specific variety of quid; it indicates any type of mixture or quid that includes betel leaf².

Categories of Quid

The workshop further gives categories of quid, which are as follows:

- a) Quid with areca nut but without tobacco products (areca nut quid);
- b) Quid with tobacco products but without areca nut (tobacco quid); and
- c) Quid with areca nut as well as tobacco products (tobacco and areca nut quid)².

These categories are further subdivided depending on the variations followed in the chewing habits.

- a) Category 1 maybe subdivided into habits in which only areca nut is chewed or a combination of betel leaf with areca nut excluding tobacco in Toto.
- b) Category 2 can be subdivided into those who chew tobacco either as raw tobacco or various processed forms of tobacco, tobacco with lime, snuff, etc.
- c) Category 3 is further divided where both tobacco and areca nut mixtures are used.

The workshop also recommended that henceforth the terms *smokeless tobacco*² should be avoided in defining or dealing with any quid habit. In most of these individuals who use this form of Quid the products are not chewed but are just allowed to remain in contact with the oral mucosa for a prolonged period of time. Whether this habit of prolonged contact of these tobacco products in the mucosa is responsible for the mucosal changes needs to be further investigated into.

MUCOSAL CHANGES WITH QUID CHEWING, TOBACCO CHEWING:

Chewers mucosa:

(Figure 1, Figure 2)

This occurs exactly in the site where the quid is placed or is in contact with the mucosa. The changes here are due to the direct action of the ingredients of the quid onto the oral mucosa. Initially there is a staining of the mucosa, a stain that corresponds to the quid ingredients either orange or brown. Then the mucosa assumes a wrinkled appearance. This wrinkled mucosa when stretched leads to a disappearance of the wrinkles and on release of the pressure the wrinkling reappears. In some cases, the ingredients of the quid or the tobacco could initiate a

chemical burn like reaction leading to the formation of a whitish or greyish slough like

membrane which can be peeled off leading to a raw bleeding surface beneath³.

Chewers mucosa



Figure 1
Wrinkled appearance in chewers mucosa

Chewers mucosa



Figure 2
Wrinkled appearance in chewers mucosa

Betel nut related lesions

(Figure 3, Figure 4) The buccal mucosa in areca nut chewers shows a blackish or greyish discoloration. The patients who give a history that the discoloration appeared only after the chewing habit was started, the

buccal mucosa loses its normal texture and consistency. It becomes rough. If the patient further continues the habit, changes like leukoplakic patch or ulceration from the patch or frank malignant transformation can also occur in prolonged areca nut chewers.

Betel nut related lesion



Figure 3
Hyperpigmentation along with keratosis in betel nut chewers.

Betel nut related lesion



Figure 4
Leukoplakia in tobacco chewing patients

Oral sub mucous fibrosis

(Figure 5, Figure 6) Oral sub mucous fibrosis is defined as a chronic insidious disease of the oral mucosa characterized by a pale blanching mucosa accompanied by palpable vertical fibrotic bands in the buccal mucosa, horizontal fibrotic bands in the lower labial mucosa associated with progressive inability to open the mouth, protrude the tongue, burning sensation and intolerance to hot spicy foods. Clinically, the buccal mucosa

appears pale, blanches on pressure, palpable fibrotic bands over the blanched mucosa, areas of vesicle formations and ulcerations occur. Histologically, in addition to the fibrotic changes the connective tissue the epithelium becomes thin and atrophic. This atrophied epithelium undergoes dysplastic changes from which carcinoma occurs. The rate of malignant transformation from oral sub mucous is about 5-7.5 %.⁴

Oral sub mucous fibrosis



Figure 5

Paleness of buccal mucosa with fibrosis seen in patients with oral sub mucous fibrosis

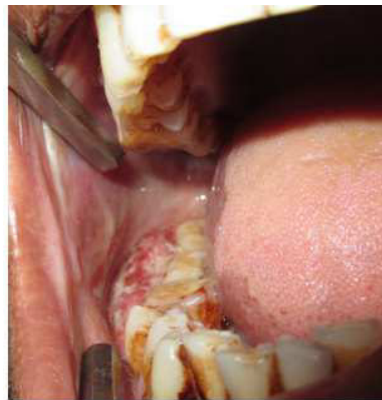


Figure 6

Carcinoma arising from oral sub mucous fibrosis

Lichenoid reactions

(Figure 7, Figure 8) These lesions occur unilaterally exactly at the site where the quid is in contact with the oral mucosa. Clinically, it mimics an erosive lichen planus in most instances where there is a central area of erythema or redness surrounded by radiating

white striae. Some cases also resemble a plaque like or a papular variety of lichen planus. The degree of burning sensation varies. The lesion totally regresses when the quid chewing habit is stopped. These lesions are now being termed as “betel quid induced lichenoid lesions”⁵

Lichenoid reaction



Figure 7 and 8

Lichenoid reaction associated with betel quid usage

CONCLUSION

The association between betel quid and tobacco chewing and oral mucosal changes are well established. The pattern and the intensity of the lesions, depends on the individual's chewing habit and contents of the quid. No definitive diagnostic tests are available to correlate a particular kind of lesion related to quid usage. A thorough history taking is beneficial to aid in the diagnosis. A biopsy is always mandatory to identify dysplastic changes in the epithelium so as to initiate an early treatment.

CONFLICTS OF INTEREST

No conflicts of interest were declared.

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Management of quid associated oral lesions always begins with educating the patient and persuading them to discontinue the habit. The treatment results are hardly beneficial if the patient continue the chewing habit even after initiation of any interventional treatment modality. Quid chewing habit has got a lot of social and cultural implications in India. Due to its widespread nature, dental practitioners should understand the possible changes in the oral cavity due to quid chewing and tobacco chewing. This would help them in patient education, diagnosing lesions early and preventing malignant changes.