



BETEL QUID CONSUMPTION IN RESIDENT POPULATION IN MAKKAH: REPORT OF TWO CASES

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ABSTRACT

Betel quid consumption became prevalent mixed communities such as that in Makkah which is a multicultural society where many ethnic groups bring cultural diversity as well as practicing lifestyle habits that may have an unrecognized harmful health impact. Therefore the purpose of this paper is to increase the awareness of dental professionals in such communities about the habitual use of betel nut and its sequential possible serious health issues.

KEY WORDS: betel nut, betel quid, Betel chewer's mucosa, oral' squamous cell carcinoma.

INTRODUCTION

Betel nut (BN) is the most common abused substance after tobacco, alcohol, and caffeine worldwide ⁽¹⁾. Over 600 million people used to utilize it in South Asian countries, but due to increased population immigration to other countries, it extended to involve other geographic areas . Therefore, all health care providers have to be familiar with this habit and its risks and harmful impact on health ⁽²⁾.

Betel quid (BQ) is defined as a mixture of self-prepared or manufactured areca nut, slaked lime (calcium hydroxide), spice, catechu and various additives with or without tobacco wrapped in betel leaf. Different ingredients are used depending on local and individual preference ^(3,4).

BQ is placed inside the oral cavity and either chewed or held in contact with oral mucosa. The chronic use of betel quid is associated with many clinical manifestations such as teeth and mucosal staining as well as oral mucosal lesions with various clinical and histopathological aspects. In addition, epithelial dysplastic changes may develop, which might progress to oral malignancy ^(5,6).

CASE 1

A 32-year- old male patient, immigrant from Myanmar, living in Makkah, KSA. He attended the dental clinic in Umm Al-Qura University Dental Teaching Hospital, complaining of generalized teeth staining. Medical and dental history were taken that exhibited medically free, non-alcoholic, previous cigarette smoker who quitted smoking

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5 years ago. Moreover, he had a history of betel quid consumption since he was 14 years old. The extraoral examination showed unremarkable findings with normal mouth opening, while intraoral examination revealed diffuse dark brown staining of all teeth and generalized yellowish to reddish-brown discoloration of the wrinkled left buccal mucosa where the betel quid was being placed (Fig. 1). An incisional biopsy of the left buccal mucosa was taken, and showed thickened squamous epithelium with hyperkeratosis, parakeratosis and mild subepithelial chronic inflammatory cell infiltration with no evidence of dysplasia or malignancy. The patient was kept under regular follow up, and he was made aware regarding the harmful effects of the habit.



Fig. (1) clinical photograph showing dark brown staining of teeth and reddish-brown pigmentation of buccal mucosa.

CASE 2

A 25-year-old male from Myanmar living in Makkah, KSA, came to dental clinic for teeth whitening. All his teeth had a dark brown staining, and this problem started a long time ago and tended to be worse with time to include the tongue and the cheek from inside. Otherwise, he reported that he was in good health and addicted to betel nut consumption since he was 10 years old and used 10 quids per day. Upon history taking and clinical examination, he

had no known allergies, was nonsmoker and non-alcoholic. The extraoral examination was within normal limits, with normal mouth opening, while intraorally beside teeth staining there was brown to reddish discoloration of the right buccal mucosa extending to the retromolar area where he placed the betel nut (Fig. 2). Histological examination was made by taking an incisional biopsy of the right buccal mucosa and showed hyperplastic stratified squamous epithelium, hyperkeratosis, parakeratosis and mild subepithelial chronic inflammatory cell infiltration with no evidence of invasive carcinoma present, he underwent a course of treatment to resolve what he complained of and advice was provided to cease the betel nut chewing habit. In addition, the risk for possible malignant transformation was explained to him and he was placed on regular follow up appointments.



Fig. (2) clinical photograph showing dark brown staining of teeth and reddish-brown pigmentation of buccal mucosa.

DISCUSSION

430 before Christ was the earliest use of BN as a masticatory product by humans that has been reported by Theophrastus, furthermore in the late of 19th century Rudolf Virchow proved that BQ chewing predominated in Siam through a study involving collected skulls that showed betel staining on the remaining maxillary teeth ⁽⁷⁾.

Since that time BQ chewing became a popular habit and involved many countries other than Siam and India and their neighboring geographic areas⁽⁸⁾. However, its widespread use was associated with several sociocultural factors including: religious thoughts, good health impact, social acceptance and addiction, many Indians consider the BN as divinely origin fruit and have been used in their religious ceremonies⁽⁹⁾. Beside its support by religious beliefs, BN has many health benefits such as mouth refreshing, improving the taste, intoxication and prevention of morning sickness in pregnant women⁽¹⁰⁾. Both patients came from Burma to Makkah where there are lots of people from different nationalities with their sociocultural traditional habits. In the above two patients, betel nut chewing is considered as cultural identity habit and socially accepted at any age, for that they have been practicing it since they were children, as well their belief that the BQ gave them great sensation of well-being, keeping them highly alert and increasing their ability to work as reported by *Auluck et al*⁽¹⁾. On the other hand, they are unaware of the possible health hazards that have been revealed by numerous studies^(3,7).

Furthermore, both of them have been suffering from betel nut staining. *Anand et al*⁽¹¹⁾ explained that : placing the BQ inside the oral cavity produces red saliva that results in red to black staining of oral tissues, depending on the component and the duration of use.

Other oral manifestations observed with chronic use of BQ is Betel chewer's mucosa (BCM) which is a desquamation of oral mucosa due to direct contact with BQ or/and indirectly through traumatic action from chewing. Clinically the mucosa showed wrinkled appearance with or without brown-reddish encrustation where the quid particles are retained⁽³⁾. Histologically, it often showed hyperplastic epithelium with cell ballooning and entrapment of BQ pigments within the epithelial surface, inter and intra- cellular⁽¹²⁾.

According to the subjective and objective findings of both cases, oral submucous fibrosis was excluded as they had normal mouth opening, with absence of clinical and histological diagnostic criteria, So betel chewer's mucosa was the final diagnosis, confirmed by histological examination. Regarding the absence of any epithelial dysplasia at the time of biopsy in both of them, recent case study report by *Sukumar et al*⁽²⁾ has shown the same result, despite that a study conducted by *Waris & Nagi*⁽¹³⁾ has shown that 171 out of 300 BN chewers had epithelial dysplastic changes ranging from mild to severe grade. In the current case this may be explained by that both patients used a self-prepared betel quid that had less carcinogenic potential in comparison with the manufactured type as stated by *Nair et al*⁽¹⁴⁾.

Only case two showed hyperplastic changes that could be attributed to the higher daily consumption of BQ compared to the other case, while in case one cigarette smoking with BQ use were combined risk factors for developing OSCC, which has been eliminated by stopping cigarette smoking^(7,15).

Several studies showed that BCM could not be considered as premalignant lesion unless it presented with other precursor lesions such as leukoplakia, erythroplakia and oral submucous fibrosis^(6,16).

Although there is a potential risk for malignant transformation as the betel chewing produces reactive oxygen species (ROS) that have a role in tumor initiation by inducing genetic mutation, or by making the oral mucosa more susceptible to toxicants and BQ components^(4,11).

Certainly, the chronic and excessive use of BQ is related to an increase in the risk of premalignant lesions and malignant transformation such as OSCC⁽¹⁷⁾. *Sharan et al*⁽⁷⁾ demonstrated that the betel nut is a carcinogenic agent for humans, therefore both patients were placed on regular follow up with possible frequent biopsy for early detection of any epithelium dysplasia that may occur, and great

effort should be exerted for discontinuation of this habit as it is deeply rooted in their community, and increasing the awareness of the population about its general and oral health implication.

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