

ORAL SUBMUCOUS FIBROSIS WITH AND WITHOUT ASSOCIATED ORAL SQUAMOUS CELL CARCINOMA; A COMPARISON AND PRESENTATION

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ABSTRACT

Oral submucous fibrosis (OSF) has always been recognized as a chronic, progressive and disabling disease of the oral mucosa. It is a well-recognized pre malignant condition which in most cases leads to oral squamous cell carcinoma (OSCC). The objective of this study was to compare the presentation of OSF alone and in patients who have developed OSCC.

This cross sectional study was conducted in the Department of Oral Medicine and Oral & Maxillofacial Surgery, Dr Ishrat-ul-Ibad Institute of Oral Health Sciences, Karachi. Out of 106 patients who were diagnosed with OSF, 17 had OSCC as well. The most common presenting complaints amongst patients presenting with OSF along and OSF with OSCC were limited mouth opening and mouth ulcers respectively ($p=0.001$). When compared with patient having OSF alone, patients presenting with OSF and associated OSCC were significantly older and gave history of prolonged use of areca nut and betel quid.

Key Words: Areca nut, betel quid, habits, oral submucous fibrosis.

INTRODUCTION

Oral submucous fibrosis (OSF) is known as a chronic disease which leads to limited mouth opening and it being a pre malignant lesion is another particularly important fact.¹ It is frequently seen in the region of South and Southeast Asia where most of the people chew areca nut in its crude form or with betel quid and tobacco. Areca nut has been indicted as strongest threat for causing OSF² and according to WHO specification, it has been named as a cancer causing substance to the humans.³ By causing changes at cellular levels areca nut extracts have a fundamental role in the development of OSF.⁴ Therefore people who use areca nut or its products over a longer period of time are more probable to develop OSCC.^{5,6} Thus we need to identify the hazards associated with the use of areca nut and its products. Moreover early diagnosis of OSF followed by areca nut withdrawal may stop the progression of this disease into

the more serious consequence of oral cancer. The chief objective of this study was to compare the presenting features of patients with OSF alone with those who have developed oral squamous cell carcinoma.

METHODOLOGY

We piloted this cross sectional study at the Departments of Oral Medicine and, Oral and Maxillofacial Surgery (OMFS) of Dr Ishrat ul Ibad Khan Institute of Oral Health Sciences (DIKIOHS) allied with Dow University of Health Sciences.

Purposive sampling was used for categorizing patient for this study. The patients detected with OSF on the basis of history and clinical examinations were included in the study. The Patients excluded from the study were recurring OSCC and previously treated cancer. A provisional diagnosis was made and all demographic particulars, presenting complaints, habits and duration of habits of patients were documented on a proforma.

All OSF patients presenting with an ulcer were biopsied under local anesthesia by the researchers. Surgical blade number 15 was used for incisional biopsy and the sample was sent to the pathology department of Dow University of Health Sciences for histopathological examination, to confirm the diagnosis of OSCC.

Statistical analysis of the data was done on SPSS Statistics version 17.0. The tests of significance used were Chi square test and Fischer exact Test used as tests of significance in this study.

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RESULTS

In this study 106 patients (59.5%) out of the examined 178 patients, were diagnosed with OSF on clinical inspection and relevant history. Out of these 106 patients with OSF, 16.03% (n=17) had associated OSCC which was established by doing a biopsy. Although more males that is 62.9% (n=56) than females presented with OSF, the difference seen in both genders was statistically insignificant when OSF with and without associated OSCC was evaluated. The details are shown in (Table 1)

Limited mouth opening was the chief complaint of the patients with OSF alone, whereas (p value 0.001) in patients with OSF associated with OSCC the complaint of a non-healing lesion in the mouth was more common (p value 0.001). Although both groups of patient were habitually using areca nut and betel quid, patients with OSF associated with OSCC reported more use of areca nut and betel quid. (p value=0.05) The results of the study further revealed that patients reporting with OSF and associated OSCC belonged to older age group and had been using areca nut and betel quid over a longer period of time. The detailed results are shown in Tables 1 and 2.

DISCUSSION

Southeast Asian countries like Pakistan, India, Sri Lanka and Bangladesh report the highest incidence

of pre malignant disorders like OSF.^{8,9} Owing to the misuse of areca nut, betel quid and its products oral cancer is on unceasing upsurge in this region, especially the South Karachi district.¹⁰⁻¹² In present study, most of the patients of OSF with concomitant OSCC (76.4%) chewed areca nut alone or in combination with betel quid. Quite a few of these patients (11.7%) used gutka as well. Gutka which is gaining popularity among young and adult is another marketable form of areca nut which is regrettably causing an increase in cases of OSF and OSCC.¹³

In our study the average age of patients presenting with OSF only was 32.02 years whereas the average age was 45.82 years in patients of OSF with associated OSCC. This is due to the fact that the persistence in chewing of areca nut and its product over a longer period of time leads to overexposure to carcinogenic effect of areca nut, which leads to the grave outcome of OSCC. In a recent study it was established that OSF was the main contributor to an increase in the age standardized incidence of oral premalignant lesions over a 14 years period.⁸ Another study has also reported that OSF patients were younger and had shorter duration of chewing habits.¹⁴ Shah et al also confirmed that a higher proportion of young children regularly used areca nut and its products.¹⁵ Yet another study reports that OSF is more common in second decade of life, and with increasing age more patients proceeded to OSCC.¹⁶

TABLE 1: COMPARISON OF GENDER DISTRIBUTION, PRESENTING COMPLAINTS AND CHEWING HABITS IN PATIENT OF OSF WITH AND WITHOUT ASSOCIATED SCC (N=106)

Variable	OSF (n=89)	OSF with SCC (n=17)	P value
Gender			
Males	56 (62.9%)	12 (70.5%)	0.59**
Females	33 (37.1%)	5 (29.5%)	
Presenting complaints			
Routine check up	19 (21.3%)	0 (0%)	0.001***
Burning mouth	15 (16.8%)	0 (0%)	
Limited mouth opening	50 (56.17%)	1 (5.8%)	
Ulcer in mouth	0 (0%)	16 (94.2%)	
Cancer Phobia	5 (5.6%)	0 (0%)	
Chewing Habits			
Areca nut with betel quid	47 (52.8%)	13 (76.4%)	0.054***
Gutka	4 (4.4%)	2 (11.7%)	
Areca nut only	16 (17.9%)	0 (0%)	
Using a combination of the above mentioned	22 (24.7%)	2 (11.7%)	

** Chi square test *** Fisher Exact test

TABLE 2: COMPARISON BETWEEN PATIENTS OF OSF WITH AND WITHOUT ASSOCIATED SCC (N=106)

Variable	OSF (n=89)	OSF with SCC (n=17)
Age (Mean S.D)	32.02± 12.36 years	45.85±6.97 years
Length of habits (Mean ± S.D)	12.43± 5.16 years	17.63±3.82 years
Mouth opening (Mean ± S.D)	17.30±06.850 mm	12.41±6.02 years

No statistical difference was noted in gender distribution of OSF with and without associated OSCC in our study. Ray et al reported that males who showed a mixed chewing habit had more chances of developing OSCC than females who chewed areca nut alone.¹⁶ Limited mouth opening was the major issue of the patients with OSF and this was further complicated in cases that developed OSCC, as is apparent in the study. In another study burning mouth sensation and difficulty in mouth opening was the major complaint in patients with OSF and the mouth opening decreased with progression of OSF.¹⁷

In the present study the patients who had OSF with associated OSCC gave prolonged history of areca nut consumption when compared with patients presenting with OSF alone. Other studies have also suggested that more the frequency and duration of consumption of areca nut products more are the chances of developing OSF.^{18,19} It has been advocated in a study that it's the daily rate of consumption of betel nut and betel quid which seems to be more substantial in causing OSF than the duration of consumption.² Whereas another study proposes that the danger of oral cancer is increased by both the daily frequency and duration of consumption of areca nut and its products.²⁰

Therefore it is necessary that measures should be taken to make the common people conscious of the perilous outcome of areca nut and betel quid use. And governments should take all necessary steps in stopping the import and sale of these substances.

CONCLUSION

Patients who used areca nut and its products for a longer period of time were the ones who had OSF along with associated OSCC. They were of older age group and displayed lesser mouth opening as compared to patients with OSF alone. Most of these OSF patients with associated OSCC presented with the complaint of non-healing ulcer in their oral cavity.

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- 1 **Ayesha Maqsood:** The principal researcher.
- 2 **Nadia Aman:** Compiled the data and configured the results.
- 3 **Shazia Nawabi:** Analyzed the results section and correlated it with the Discussion.