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Research Article

A STUDY ON ORAL SUBMUCOUS FIBROSIS WITH AND WITHOUT ASSOCIATED ORAL SQUAMOUS CELL CARCINOMA (OSCC)

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Abstract:

Introduction: Oral squamous cell carcinoma (OSCC) is a critical health problem affecting millions of people worldwide. Even though the causes may vary regionally, the course of the disease and suffering prevails undeterred.

Aims and objectives: The main objective of the study is to analyze the oral submucous fibrosis with and without associated oral squamous cell carcinoma (OSCC).

Material and methods: This cross sectional study was conducted in University College of Dentistry, University of Lahore during January 2018 to June 2018. The data was collected from 100 patients of both genders who were confirmed with OSF on the basis of history and clinical examinations were included in the study. Demographic and clinical information were recorded. The data was collected through a questionnaire. All the demographic and social data were included in this designed questionnaire. All OSF patients presenting with an ulcer were biopsied under local anesthesia by the researchers. For histopathological examination biopsy were performed to confirm the diagnosis of OSCC.

Results: The data were collected from 100 patients of both females and males. The age distribution of the sample was analyzed. The patients were mostly above 50 years of age in both categories. However, the number of patients who were with OSCC at an age below 50 was greater in the OSF-positive group (23.8% vs. 21.9%). Similarly, the mean age of OSF + OSCC patients was 57.5 years while this value was 59.5 years for those without.

Conclusion: It is concluded that tumors show well-differentiated histology and less lymph node involvement. However, a statistical significance was not observed among these variables, when comparing the OSCC patients with OSF to those who are without.

Key words: OSCC, Patients, Dental, Significance.

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INTRODUCTION:

Oral squamous cell carcinoma (OSCC) is a critical health problem affecting millions of people worldwide. Even though the causes may vary regionally, the course of the disease and suffering prevails undeterred. The potentially malignant period of OSCC is an aspect that provides a beneficial approach to prevention [1]. This period may be manifested as localized or generalized alterations of the epithelium, leading towards carcinogenesis.

Oral submucous fibrosis (OSF) is one such potentially malignant condition that subjects the oral cavity to a widespread alteration in morphology and physiology [2]. The clinical manifestation comprises the classic triad: blanching of the mucosa, burning sensation on irritation with spicy food, and depapillation of the tongue [3]. These will be followed by depigmentation of the lips and loss of elasticity of the mucosa with development of palpable fibrous bands in the oral cavity, progressing from the anterior region to the posterior region of the mouth [4]. There are also apparent woody changes of soft palate and tongue, ultimately resulting in loss of mobility of the tongue along with restricted mouth opening [5].

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. 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 OSF and according to WHO specification, it has been named as a cancer causing substance to the human [6].

Theoretical background

Oral submucous fibrosis (OSF) is a chronic, progressive, premalignant condition. It has high rate of morbidity due to progressive inability to open mouth due to juxtaepithelial inflammatory reaction and progressive fibrosis of lamina propria [7]. The chewing habit of paan, chaliya, gutka, naswar, mava and manpuri are the potential risk of OSF in the

developing countries like Pakistan. It has been observed that significant mortality rate of OSF can transform into oral squamous cell carcinoma (OSCC). It has been reported that TP53 mutation at DNA binding domain was found in OSCC patients of Pakistan [8].

Aims and objectives

The main objective of the study is to analyze the oral submucous fibrosis with and without associated oral squamous cell carcinoma (OSCC).

MATERIAL AND METHODS:

This cross sectional study was conducted in University College of Dentistry, University of Lahore during January 2018 to June 2018. The data was collected from 100 patients of both genders who were confirmed with OSF on the basis of history and clinical examinations were included in the study. Demographic and clinical information were recorded. The data was collected through a questionnaire. All the demographic and social data were included in this designed questionnaire. All OSF patients presenting with an ulcer were biopsied under local anesthesia by the researchers. For histopathological examination biopsy were performed to confirm the diagnosis of OSCC.

Statistical analysis

All analysis were performed using statistical analysis software SPSS version 21. Frequencies and proportions were reported for categorical variables including outcome measures blindness and visual impairment.

RESULTS:

The data were collected from 100 patients of both females and males. The age distribution of the sample was analyzed. The patients were mostly above 50 years of age in both categories. However, the number of patients who were with OSCC at an age below 50 was greater in the OSF-positive group (23.8% vs. 21.9%). Similarly, the mean age of OSF + OSCC patients was 57.5 years while this value was 59.5 years for those without.

Table 01: Demographic characteristics of all selected patients

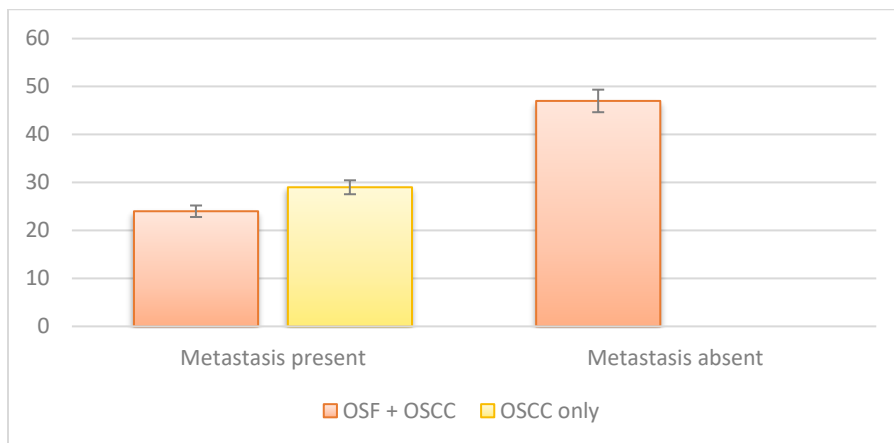
	Patients with OSF+OSCC	Patients with OSCC	P value
Sex	M: F	M:F	
	3.2	2.3	
Habits			
Betel quid chewing	99	23	<0.05
Quid with alcohol or smoking	13	10	
Alcohol and smoking	0	5	

All 3 habits	22	9	
Primary site			
Commissure	1	7	
Buccal mucosa	47	51	
Floor of the mouth	9	10	
Tongue	39	38	
Alveolar ridge (upper and lower)	30	33	
Lip	2	1	
Palate	0	5	
Degree of fibrosis and Histological differentiation			
Early fibrosis:			
EISCC	02	02	P=0.195
WDSCC	32	91	
MDSCC	15	42	
PDSCC	05	06	
Intermediate fibrosis:			
EISCC	03		
WDSCC	23		
MDSCC	16		
PDSCC	01		
Advanced fibrosis:			
EISCC	01		
WDSCC	16		
MDSCC	14		
PDSCC	02		
Lymph node metastasis	24 (22.6%)	29 (30.8%)	P=1.89

Lymph node metastasis was seen more among OSCC only patients (30.8% vs 22.6%). But this association was not statistically significant ($p=1.89$). The degree of fibrosis was assessed in relation to metastasis.

Table 2: Nodal metastasis and its relationship with OSF.

	Metastasis present	Metastasis absent	Total
OSF + OSCC	24 (22.6%)	47 (48.3%)	100
OSCC only	29 (30.8%)		



DISCUSSION:

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. Another study has also reported that OSF patients were younger and had shorter duration of chewing habits [9]. Shah et al also confirmed that a higher proportion of young children regularly used areca nut and its products. Yet another study reports that OSF is more common in second decade of life, and with increasing age more patients proceeded to OSCC [10].

In previous studies it has been shown that the submucosa, in OSF, undergoes pathological changes due to excessive fibrosis, abnormal collagen synthesis, reduced vascularity, and hypoxia. In turn, their pathway of malignant transformation takes course under the influence of genetic and molecular alterations [11]. The basis for expecting early detection, less invasion, and metastasis may be due to excessive collagen fiber production with increased cross linkages that are not degraded by collagenase [12]. However, the reduced vascularity in an environment with fibrosis prolongs the accumulation of carcinogens that permeate the mucosa and enables their action to last longer [13]. Ultimately when tumor genesis takes place, they may possess different prognostic attributes in comparison to OSCC in an environment that lacks OSF. Presence of OSF was observed in 48% of the patients in the current study. This lies within the range 25.77% to 66%, observed in the literature [14].

CONCLUSION:

It is concluded that tumors show well-differentiated histology and less lymph node involvement. However, a statistical significance was not observed among these variables, when comparing the OSCC patients with OSF to those who are without.

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