

## ARTICLE

## The Pattern of Occurrence of Oral Squamous Cell Carcinoma in Libya

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### Abstract

The objective of this study is to describe aspects of oral squamous cell carcinoma (OSCC) in a cohort of hospital patients in Libya. The patterns of clinical presentation of oral squamous OSCC in 122 Libyan patients from 1979-2004 were retrospectively analysed. Men were affected more often than women with the average age at presentation 53 years. Just over half the patients had symptoms for more than six months prior to presentation. The tongue and floor of the mouth were the most commonly affected sites. In 30.3% of patients the OSCC presented as an ulcer, in 20.4% as a swelling, and in 19% as a white patch. The majority of the patients had stage III or IV disease when first examined. Nearly 80% of the patients were tobacco smokers. It was concluded that the pattern of clinical occurrence of OSCC in Libya was similar to previous reports from Western Europe and Asia. The results of the present study highlight the need for an appropriate strategy to prevent OSCC and reduce delays in the diagnosis and treatment of such disease in Libya.

**Key Words:** Libya; Malignancy; Oral; Squamous cell carcinoma

### Introduction

Oral squamous cell carcinoma comprises more than 90% of head and neck malignancies. The geographic pattern of occurrence varies considerably from regions of low prevalence, where OSCC accounts for 1-2% of all malignancies, to regions where well over 45% of all malignancy is OSCC (1). These striking geographical differences probably reflect local variations in the presence of risk factors, such as tobacco, alcohol or betel quid usage, and nutritional status (2-4). Data concerning oral malignancy in Libya and in other parts of Africa are sparse but the disease is considered to be relatively uncommon (5-7). The pattern of occurrence of OSCC in Libyans has not been recorded in detail, thus the aim of the present study was to document aspects of OSCC in a cohort of hospital patients in Libya.

## Material and Methods

The hospital records of 122 patients who presented to the Department of Oral and Maxillofacial Surgery at the Faculty of Dentistry of the University of Garyunis, Benghazi, Libya, between 1979-2004 and were subsequently diagnosed as having histopathological features of OSCC, were examined retrospectively. This department receives referrals from all regions of Libya. The available hospital records were reviewed and analyzed with respect to patient gender, age (in years) at the time of diagnosis of OSCC, mode of presentation, and stage of OSCC according to the TNM classification (tumour site, metastasis to lymph nodes and distant metastatic spread) (8) at the time of presentation, and history of alcohol and/or tobacco consumption. Percentages were rounded to one decimal place. The site of the OSCC was classified according to the International Classification of Diseases numbers 141,143, 144, and 145 (9).

## Results

### Age and gender distribution

The age distribution of the patients with OSCC is presented in Figure 1. Most patients were in their fourth to sixth decade. There were 68 men and 54 women giving a male to female ratio of 1.2:1.

### Site

The tongue (27%) and floor of mouth (21%) were the most commonly affected sites, with the alveolar mucosa (16%), lips (11%), buccal mucosa (10%), palate (9%), and commissures (7.3%) being less frequently involved (Table 1).

### Clinical presentation

The clinical features of OSCC were noted to be ulceration (30.3%), swelling (20.4%), oral mucosal white patches (19%), exophytic growths (16%), and red lesions (12.2%). Other forms of presentation were seen in the remaining 2.4% of patients (Table 1).

### Delay in presentation

Twenty patients (16.4%) were examined within a month of development of the oral symptoms - typically oral discomfort, and 47 (38.5%) between 6 to 12 months after the initial symptoms. In five patients (4.1%) there was a delay of over 2 years before being examined by specialists (Table 2).

Table 1. Clinical characteristics of 122 Libyan patients with oral squamous cell carcinoma (OSCC).

Clinical characteristics	Number	%
Site of OSCC		
Tongue	33	27.0
Floor of mouth	25	20.4
Alveolous	19	16.0
Lips	13	11.0
Buccal mucosa	12	10.0
Palate	11	9.0
Commissure	9	7.3
Total	122	100
Clinical presentation		
Ulcer	37	30.3
Swelling	25	20.4
White patch	23	19.0
Exophytic growth	19	16.0
Red patch	15	12.2
Others	3	2.4
Total	122	100.0

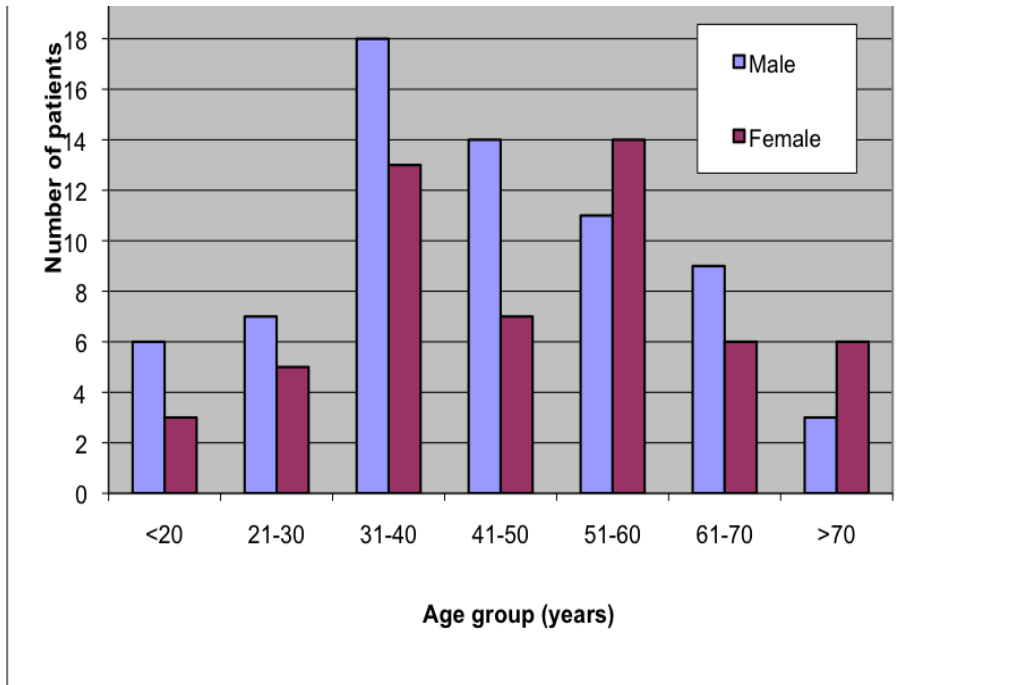


Figure 1. Age and gender distribution of 122 Libyan patients with oral mucosal squamous cell carcinoma

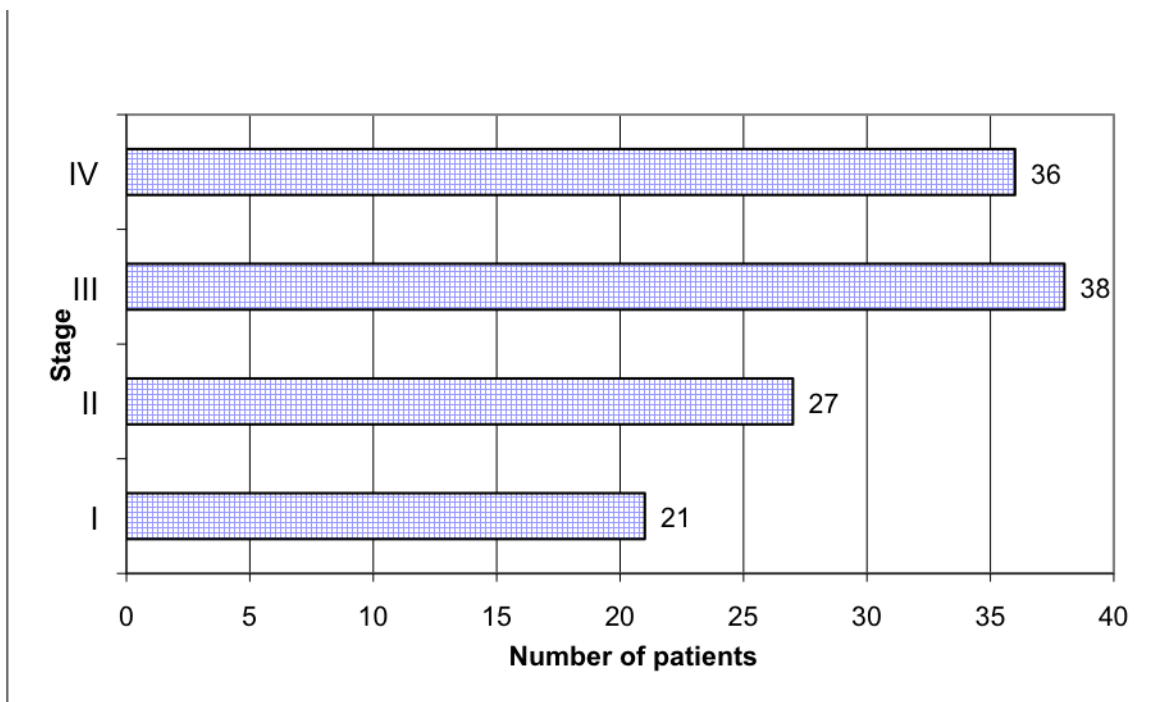


Figure 2. Stage of oral mucosal squamous cell carcinoma of 122 Libyan patients at the time of presentation

Table 2. Duration of oral symptoms of 122 Libyan patients with oral squamous cell carcinoma

Duration	Number of patients	%
< 1 months	20	16.4
1-6 months	39	32.0
6-12 months	47	38.5
1-2 years	11	9.0
> 2 years	5	4.1
Total	122	100

Table 3. Frequency of tobacco usage in 103 Libyan patients with oral squamous cell carcinoma

Tobacco smoking habit	Number of patients	%
Regular	57	55.3
Occasional	25	24.3
Non-smoker	21	20.4
Total	103	100

### Clinical stage of malignancy at time of presentation to the clinic

Twenty-one patients (17.2%) had stage I, and 22.1% had stage II disease. Of note however, was that the majority of patients had either stage III (31.1%) or stage IV disease (29.5%) at the time of their presentation to the specialist unit (Figure 2).

### Tobacco smoking

Of the 103 patients with OSCC for whom records concerning tobacco smoking were available (Table 3), 57 (55.3%) were regular tobacco smokers, 25 (24.3%) were occasional tobacco smokers and 21 (20.4%) were non-

smokers. Libya is a Muslim country and all patients denied use of alcoholic beverages.

### Discussion

There are striking differences in the prevalence of oral cancer in different geographic locations and in different racial groups (1, 2, 10). Oral cancer in some parts of India accounts for approximately 30% of all malignancies; by contrast, 3-5% prevalence is reported from most developed countries (2, 11, 12). This variation may be due to differences in the collection and recording of data and/or to variation in the habits and nutritional status of the population. For example, the habit of chewing a mixture of tobacco and

betel quid in India together with the development of submucosal fibrosis in this population has probably led to an increased prevalence of OSCC (12). By contrast, chewing tobacco and betel quid is unknown in Libya. There are no data on the occurrence of oral malignancy in Libya; hence the present study provides a glimpse of the clinical presentation of oral malignancy in this population. There was a predominance of males with OSCC in the present group, the male-to-female ratio being 1.2:1. This is a lower male involvement than that of other African countries such as Egypt and Nigeria (3:1) (13, 14). The explanation for this low male-to-female ratio may be the longer life span of women in comparison with men in Libya (15). Over 74% of the Libyan patients with OSCC were > 40 years of age, a similar finding in results of other studies (2, 16, 17). Many previous studies have demonstrated a relatively similar age of onset of OSCC for both men and women (2, 16-20). The present group of Libyan women were noted to have peak prevalence in the 4th and 6th decades, whereas for males the peak prevalence was in the 4th and 5th decades. These differences were not statistically significant and are thus in line with the previous reports.

Similar to previous studies, the tongue and floor of the mouth were the most common sites of OSCC presentation among Libyan patients (8). It is generally agreed that tobacco consumption is a major etiological agent for OSCC and many studies have shown an over-representation of tobacco smokers among patients with OSCC (21, 22). Tobacco smoking was noted in at least 79% of patients for whom adequate details were available. Because of the Islamic nature of Libyan society and hence the prohibition of the use of alcoholic beverages, the role of alcohol in the aetiology of the OSCC could not be determined but, assuming the alcohol consumption of this group of patients to be low, the present social data confirms the knowledge that tobacco usage alone can lead to OSCC (23-28).

These habits potentially may influence the distribution of OSCC in various sub-sites of the labial mucosa and oral cavity, as in reformed smokers has a predilection for the palate, while in users of smokeless tobacco OSCC often arises in the lower bucco-alveolar sulcus or gingiva. The effect of these habits on the location of OSCC was not included in this report and deserves further study. The early diagnosis of OSCC is important for improving prognosis; a delay in seeking advice and treatment can change survival rates from nearly 60% for 5-year survival rates for T1 tumours to < 20% for T4 tumours (12). Nevertheless, the presence of oral malignancy can be covert because signs and symptoms are often so mild that patients may misinterpret

the seriousness and not seek medical help, or the clinical presentation may be so unremarkable that clinicians do not institute appropriate diagnostic procedures. In the present study just over half of the patients sought advice from a health professional more than 6 months after the first onset of signs and symptoms of oral disease. This late presentation may be the reason for the severity of the disease at the time of examination. Treatment of advanced OSCC can result in profound physical and psychological deterioration in patients (29). Therefore, since the majority of the present group of Libyan patients sought treatment at a late stage, there is a need to develop an appropriate strategy to prevent OSCC and to reduce the delay in presentation to appropriate clinicians.

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