









## Research Paper: Clinicaopathological Pattern evaluation of squamous cell carcinoma in Babol, Iran, from 2008 – 2017



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## ABSTRACT

**Introduction:** The aim of this study was to evaluate the 10 years Clinicaopathological pattern of oral squamous cell carcinoma in Babol, Iran (2008 – 2017).

**Materials and Methods:** This descriptive retrospective research is based on data of 45 patients' records. The data, that are noted down in the specified check list, (consist of various kind of demographic, clinical, pathology, history of medical and dentistry, and etc). was registered. then data was analyzed by SPSS21 and  $\chi^2$  and student's T-test. P value in which the cases with less than 0.05 are considered to be meaningful.

**Results:** The average age range of women is  $68.15 \pm 10.869$ , which is significantly higher than men's average ( $48.15 \pm 9.869$ ) ( $p=0.031$ ). The most prevalent reason of patients' visit is existence of lesion in the mouth which most common sign was pain. The majority of clinical feature of basic lesion was ulceration. Also, according to the check list, totally gingiva, alveolar ridge and retromolar pad, then tongue, buccal mucosa, lips, palate and floor of the mouth respectively, are the area's most frequently involved.

**Conclusion:** Oral squamous cell carcinoma, indicates that the average age of women is significantly higher than the men. The main chief complaint of patients' is the existence of lesion with the basis of ulceration, accompanied with the pain. In most areas of the oral cavity, there is a possibility of OSCC.

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## Introduction

Oral cancer is the most common malignancy in head and neck area. More than 90 percent of oral cancers consists of oral squamous cell carcinoma (OSCC). The average age of the disease is 56.9 year and the highest prevalence is in over 60 year patients. The incidence of men with a ratio of 1.4 to 1 is higher than the women, which is probably different between the population of men and women in different societies. The most common oral areas involved in OSCC includes tongue, gums, buccal mucosa, floor of the mouth, hard palate, lips and in rare cases, retromolar pad and other oral sites. 1-3

### *Risk factors*

Tobacco, alcohol, human papillomavirus (HPV, only oropharyngeal type), betel nut, swedish moist snuff, age, suppressed immunity system, UV radiation (only in OSCC in lip), Plummer-Vinson syndrome and vitamin A deficiency are the risk factors of this cancer. Also, the results of the research indicated the relationship between marijuana consumption and OSCC, but further research is needed. 1-7 Smoking and alcohol drinking are risk factors for lifestyle that play an important role in the development of oral cancer. In many studies from 1970, these two factors have been identified as lifestyle-related risk factors associated with cancer. 8-11 Probable tissue changes include red lesions, white lesions or red and white lesions with a smooth, granular, rough, or crusty surface, or the presence of mass or wound. 1,2 Advanced lesions are often ulcerous with induration, and often there is no pain until the last stages of the disease. High-risk areas include the floor of the mouth, the lateral and the ventral surfaces of the tongue. 2 The chief complaint of the patient includes discomfort that is related to presence of mass in the mouth or neck, dysphagia, painful swallowing (Odynophagia), ear pain (Otalgia), motor limitation, oral hemorrhage, hoarseness, ulcer resistant to treatment, numbness, tooth mobility and changes in denture adaptation. 1,2 In advanced cases of OSCCs, the patient may complaint due to

weight loss and respiratory problems or nerves involvement that results in muscles atrophy or one-sided paresthesia. 2 Squamous cell carcinoma is present with ulcer in 42% of cases and in 50% of cases it has a prominent and swollen appearance. It is also stated that the most common patient's complaint is ulcer. 3,4 Oral squamous cell carcinoma spreads through local infiltration into adjacent tissues or metastasis to lymph nodes through lymphatic channels. Penetrating to the regional structures leads to induration, fixation, and lymphadenopathy. 2

### *Diagnosis*

Diagnosis is based on histopathology and a definitive test for diagnosis is tissue biopsy. 1,2. The proposed adjuvant routes for oral examination includes vital coloration with Toluidine blue, the use of visualization adjunctive tools, oral mucosal cytology, molecular analysis, imaging and preparation of tissue samples using aspiration. By using imaging techniques such as conventional radiography, CT scan, MRI and ultrasonography, bone involvement and the extent of some tissue lesions can be determined. 1.

### *Prognosis*

The patient's prognosis largely depends on the stage of disease at diagnosis and the most important predictor of survival in oral cancer is the presence of HPV and stage of disease at diagnosis.

### *Treatment*

Surgery and radiotherapy are used to improve oral cancer treatment. Chemotherapy and Targeted therapy are complementary therapies that are added together to the main surgical and radiotherapy treatments.

### *Therapeutic side effects*

In the treatment of squamous cell carcinoma, recurrence of the disease is always possible, but in general, the complications of surgical treatment include: neck area complications, oral cavity complications, flap related complications and tracheostomy. Systemic complications are pulmonary problems, neurological problems, heart problems, infectious problems, hematology problems, digestive problems, metabolic

problems and other problems<sup>5</sup>. The main complications of radiotherapy treatment include mucositis, dysphagia, xerostomia and taste change<sup>6</sup>. Given the statistically significant differences in different studies and the importance of epidemiological study, to identify the main risk factors and to identify the relationship between hereditary and cultural factors with malignancy and the role of climatic conditions in the development of cancer, this study is based on a ten-year evaluation of oral squamous cell carcinoma in Babol from 2007 to 2016 and various clinical and pathological factors such as age, sex, site of lesion, associated symptoms, clinical appearance, color of lesion, risk factors, etc. were evaluated in the present study.

## Materials and Methods

This study was a retrospective descriptive study that evaluated the clinical and pathologic pattern of squamous cell carcinoma in Babol, between 2007 and 2016 that was approved by code of 974587 at the Research Council of Babol University of Medical Sciences. To perform this study, the documents of oral and maxillofacial diseases department of Babol University of Medical Sciences, Cancer Registry Unit of Babol University of Medical Sciences, Babol University of Medical Sciences and Babol Shahid Beheshti Hospital Maxillofacial surgery and pathology) were collected. Those documents with pathological confirmation and information in the file, and all stages of diagnosis and treatment were considered as a source of information for this study. The information extracted from these files was recorded in a special form designed for this purpose, which contains the following sections:

Personal Information: Age, Sex, Occupation, Phone Number

Hospital Information: File number, biopsy number and pathology center performing the biopsy

Patient medical history

Systemic diseases, medications used

Whether or not to use removable dentures (maxilla, mandible)

Another previous cancer history in the patient and his family

Risk Factors (Tobacco Use and its Dosage, Alcohol Use, Drug Use)

Disease Information:

Cause of referral (lesion, pain, dysfunction (chewing, speech and etc.), inability to use denture, unwellness)

Duration of main complaint before referral

Location of lesion (right or left buccal mucosa, upper or lower labial mucosa, oral palate, tongue including dorsal, ventral and lateral areas, hard or soft palate, upper or lower lip and total gingival areas, alveolar ridge and retromolar pad in oral cavity)

Symptoms associated with the lesion (pain, tenderness, diesthesia, bleeding, lymphadenopathy, and toothache)

Type of tumor (primary tumor, tumor recurrence, second primary tumor)

Imaging Methods (Panoramic Radiography, CT Scan, MRI, Ultrasound, Scintigraphy)

Radiographic view (presence or absence)

Clinical View (Surface View, Homogeneous or Non-Homogenous Papillary, Granular, Verrucose or Wounded and Homogeneous or Non-Homogeneous)

The presence or absence of metastatic and distant metastases at the time of diagnosis

Therapeutic method (surgery, radiotherapy, chemotherapy)

Also, the files in the Cancer Registry Unit of the Department of Non-Communicable Diseases of Babol University of Medical Sciences have the following sections. Personal information includes: name, surname, father's name, age, sex, address of residence and final diagnosis and a pathology report form including macroscopic and microscopic view of the relevant specimen and histopathologic diagnosis of the specimen. Each item in the final checklist will be recorded in the final report if the case file fails. It is worth noting that the initial checklist included more topics than the final checklist, such as stage, grade and survival, due to the lack of identical records in the relevant centers and the statistical errors in The findings and results of the study were eliminated with the assistance of the statistical partner and the discretion of the designers of some of these topics and a checklist was prepared. Data were analyzed using SPSS 21

software and  $\chi^2$  and T-test Student's statistical tests, and  $p < 0.05$  was considered significant.

## Results

In this retrospective descriptive study, clinical and pathologic data of 54 patients with oral squamous cell carcinoma in Babol, Iran, from 2007 to 2016, were reviewed. It should be noted that due to the defects in the records, complete information was not available to all patients.

### Sex

As shown in diagram 1, out of 54 patients, 51.9% of patients were men and 48.1% were women, and men were more likely to develop a 1.07 to 1 ratio than women.

### Age

The mean age of oral squamous cell carcinoma in men was 60.39  $\pm$  14.415 and 68.15  $\pm$  10.86 in women. Age was significantly higher in females ( $p = 0.031$ ) than in males. Median age at sex was more than 60 years.

### Referral cause

As can be seen in Table 1, the most common cause of pain was 79.5% in 35 cases and the second most common cause of pain in 42 cases (42.4%). Denture was observed and no referral was due to dysfunction (speech, chewing and etc.) or malnutrition.

### Risk factors and predisposing conditions

As can be seen in Table 2, the most common risk factors and predisposing conditions were using mandibular removable prosthesis with 11 cases, 31.4% and 9, 25.7%, respectively. Smoking accounted for 7 (19.4%), anti-smoking (6) (16.7%), and alcohol (3) (8.3%).

### History of cancer in patient or his/her family

Of the 36 patients who responded, 2 had a history of previous cancers. In both cases, squamous cell carcinoma of the mouth was present. Also, of the 35 responding patients, 2 had a history of cancer in their first-degree relatives, none of whom had oral squamous cell carcinoma.

### Type of tumor incidence

Tumors are divided into primary, tumor recurrent and second primary according to incidence

data. Based on data from 37 responsive cases, primary tumor with 32 cases 86.5% most common type of tumor incidence and tumor recurrence

with 4 cases 10% is the second most common type of incidence. A second primary tumor was also observed.

### Metastasis

Among the 32 patients with responsiveness, 3 cases of metastatic metastasis (submandibular lymph nodes) and one case of distant metastasis to the liver were observed.

### Imaging technique

Of the 33 imaging modalities reported for the 33 patients, the most common was sonography with 14 cases, 42.4%, and the least commonly used MRI with one, 3%.

### Therapeutic procedure

As can be seen in Table 4, out of 13 responding cases, surgical treatment was the most common type of treatment with 11 cases (84.6%). Radiotherapy with 2 cases equal to 15.4% was the second most common treatment and no chemotherapy was seen in the respective files.

### Period of lesion presenting before referral

According to the data collected from the patients' statements, the mean duration of the lesion before going to the treatment centers was  $8.04 \pm 9.24$  months with an at least one month and the maximum of 30 months.

### Symptom with lesions

Of 35 responding cases, pain with 15 (42.9%) was the most common symptom, followed by tenderness (28.6%), lymphadenopathy (22.9%), hemorrhage (5/3). 14%, dysesthesia and tooth decay were the next with 2.9% of cases.

### Location of lesion

As shown in diagram 2, out of 51 responding cases, with the possibility of spreading the lesion into multiple areas and overlapping multiple options for one patient, the most common site of lesion presentation was the gingival, alveolar ridge, and mitromolarpad, with 22 cases equal to 43.1% is. Then the right buccal mucosa with 9 cases equals 17.6%, the left buccal mucosa with 6 cases 11.8%, lower lip. With 5 cases 9.8%, ventral area

5 cases 9.8%, right lateral area 5 cases 9.8%, left lateral area 5 cases 9.8%, oral palate 3 cases 9.5%, hard palate or 3 cases 5.9%, dorsal tongue area with 1 case 2%, soft palate with 5%, upper lip with 1 case 2%. There was also no evidence of lip mucosa.

#### ***Existence of radiographic view***

Of the 20 reported cases, 2.5% reported radiographic evidence of the lesion.

#### ***Clinical view***

Of the 44 cases with responsiveness, the most common clinical manifestation of ulcer was 23.3 (52.3%), followed by papillary and granular non-homogeneous surface (20.5%), and verrucose (7.9), respectively. They are 15%. In 2 cases the lesion had a homogeneous surface.

#### ***Color of lesion***

Out of 44 cases with responsiveness, 40 cases with 90.9% non-homogeneous color and 4 cases with 9.1% homogenous color lesion were observed.

## **Discussion**

The results of this retrospective study suggested that men are more likely by SCC with a ratio of 1.07 than women, which is reported in other studies and studies as 1.4 and 1.37. This may be due to the different incidence of the disease in different communities and geographical and demographic conditions, etc., as well as the different number of patients studied and the different time intervals that all of these factors affect<sup>8,9,10</sup>. The mean age in women was significantly higher than men ( $p = 0.031$ ), the mean age in both sexes was 64.19 years, and some studies reported 64.32,<sup>8,9</sup>. The most common site of lesion in this study was gingival, alveolar ridge and retromolar pad area with 43.1% frequency, which seems to be due to the extent of these areas, the possibility of spreading the lesion to several areas and thus overlap of several options. It also includes gum, which is the second most common site of lesion in other sources, with 31.4% of the tongue being the most common lesion in the mouth. Buccal mucosa, lips, oral cavity, palate and oral

palate are next. Regarding the site of lesion presentation, the most common sites of incidence were tongue, gums, buccal mucosa, oral palm, oral cavity, lip, and in more limited cases in the retromolar pad and other areas of the oral cavity, respectively<sup>1,2,8,10</sup>. In this study, using upper and lower removable prosthesis were considered as predisposing factors. There was no significant difference in the incidence of disease related to upper and lower jaw removable prosthesis. Risk factors included smoking in 19.4% and other anti-smoking and alcohol use. In the study by Oliveria et al, smoking and alcohol use in patients were 85.3% and 63.5%, respectively. One of the prominent differences between the present study and some studies on alcohol consumption is that it can be well understood that cultural and religious reasons differ across societies<sup>1,2,8-11</sup>. The main chief complaint of patient was 79.5% at the time of presentation and 42.4% at the time of pain.

Wound was the most common lesion with 52.3% and in 90.9% non-homogeneous lesions were observed. Out of 44 responsive options, only 2 lesions with homogenous surface were recorded.

Despite the variety of geographical and demographic differences in the occurrence of the lesion, many clinical features and clinical behavior of the lesion were observed and it can be concluded that the disease in many cases is in the form of oral ulcers. So, it is concluded that it is associated with pain and that the presence of the lesion is the cause of the patient's visit and their main chief complaint<sup>1,2,11,12,13</sup>. The most common symptom was pain in 42.9% and tenderness in 28.6%. In Oliveira et al.'s study, 70.4% of cases had pain at the time of diagnosis<sup>11,12,14</sup>. Based on data collected from patients, the duration of the lesion prior to referral to the treatment center averaged 9.21% in month. In this part of the study, the information was recorded based on the patients' statements and unchanged, so in one case, despite the complaint of inability to use a denture, the patient had no complaint of dysfunction. Oral squamous cell carcinoma can spread to adjacent

tissues and other organs through infiltration and metastasis. In this study, 3 cases of sub-mandibular lymph node lymph node metastasis and one case of distant metastasis to the liver were observed. Of the 35 responding cases, only 8 patients involved with lymphadenopathy. Patients may have more metastases than those found in the study. As in some studies, based on repeated follow-up of patients' status and the information needed in the records, this value is also equivalent to 11-55%<sup>1,15</sup>. The most used diagnostic method in the patients under study was ultrasound and the least used was MRI. The most widely treatment used surgical treatment was 86.4% and radiotherapy with 2 cases was the only adjunctive treatment. There were no recorded cases of chemotherapy treatment in the records<sup>1,2,16,17</sup>. It is also possible that the patient will be treated or re-treated in a facility other than the one in Babol. Results obtained in this study in cases where it was possible to accurately record information (age, sex, cause of referral, clinical appearance, location of lesion, etc.) similar to other epidemiological studies on oral squamous cell carcinoma. have been. It seems that the difference between the results of this study and other studies is due to the number of patients studied, health habits of the study population, cultural and social level, geographical area studied, lifestyle, physical condition, mental health, disease, the economic, nutritional and etc. In this study, in addition to the items in the checklist, other items such as stage, grade, and survival rate were examined, which, given the lack of recording of this information in many of these cases, Excluded from the study. Oral squamous cell carcinoma is more common in men than women and the mean age of both sexes is over 60 years, which is significantly higher in women. The most common cause of patients with oral lesions is oral ulcers, often with pain for several months, and tongue and buccal mucosa are the most common lesions. Based on these results, it is recommended that patients with over 60 years of age should be given a thorough and careful examination of oral squamous cell carcinoma.

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### Conflicts of interest

There are no conflicts of interest

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