Tongue carcinoma: Case series and demographic analysis

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Case Series

Abstract

BACKGROUND: Oral tongue squamous cell carcinoma (SCC) accounts for approximately half of oral cavity SCC cases. Smoking and drinking are two major risk factors for SCC worldwide. Recently, increasing incidence among young white individuals who were never-smoker, never-drinker have been reported.

METHODS: To determine the demographic status of tongue SCC in our region, this study was conducted among patients who undergone surgery in Tabriz, Iran, due to tongue SCC.

RESULTS: Mean age of 27 patients was 61 years and 22% of them were under 45 years old. Mean duration of beginning the symptoms to biopsy was 113 days for patients under the age of 60 years and 253 days for elderly patients (P = 0.026). Early diagnosis, especially in patients more than 60 years old, was associated with good prognosis.

CONCLUSIONS: The results of this study indicated that considering a lower threshold for obtaining biopsy from elderly patients, even in the first visit, is useful for early diagnosis and better prognosis.

KEYWORDS: Tongue, Squamous cell carcinoma, Tongue carcinoma, Tongue cancer

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Introduction

Oral cavity malignancy is an important part of head and neck cancer, accounts for approximately 14% of them as reported by the National Cancer Data Base (1985-1996). The majority of lesions (86.3%) were squamous cell carcinoma (SCC).[1]

Oral tongue SCC (OTSCC) accounts for approximately half of oral cavity SCCs. As Garavello et al. noted, cancer of the tongue has been regarded as a disease usually affects men between the sixth through the eighth decades of life, following long-term exposure to cigarette smoking and alcohol abuse. It was estimated that 3% of the carcinomas occur in young patients but an increase to 6-7% has been recently recognized.[2]

Although tobacco use and alcohol consumption has been historically the most common risk factor for OTSCC, a major group of never-smoker, never-drinker is identified in recent reports.[3] Patel et al. analyzed the incidence data from the Surveillance, Epidemiology and End Results (SEER) Program of the National Cancer Institute from 1975 to 2007 and concluded

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that OTSCC is increasing among young white individuals aged 18 to 44 years, particularly among white women.[4]

As the incidence of human papilloma virus (HPV) infection has increased over the past few decades, and oral sexual practices have become more commonplace among younger age groups, the question has been posed as to whether the increased incidence of tongue cancer may be related to oncogenic human papillomavirus (HPV) infection.[5] Barwad et al. studied the prevalence of HPV in head and neck cancers with neck nodal metastases and their finding was detection of HPV in 32.4% cases. Maximum positivity was observed in metastases from primary in the oral cavity (47.1%) with tongue (55%).[6]

Methods

Files of patients with diagnosis of tongue SCC hospitalized in the Imam Reza Hospital of Tabriz (Tabriz University of Medical Science, Tabriz, Iran) from the June 2011 to the may 2013 were reviewed. Twenty seven patients during this period of time were undergone surgery after positive biopsy of tongue SCC.

Data collected from patient records included clinical presentation, physical examination especially neck examination, radiologic characteristics if present, and pretreatment staging. History of tobacco and alcohol use, oral hygiene, and treatment modalities were registered. The histopathologic diagnosis and other pathologic criteria including report of differentiation of SCC according to World Health Organization guidelines were reassessed by single pathologist.

The data were analyzed by SPSS Statistics 17.0 (Polar Engineering and Consulting, Nikiski, AK, USA).

Results

Twenty seven patients were admitted to hospital with positive biopsy of tongue SCC with the mean age of 61.26 years (range of 32 to 88 years). Fifteen were men (55.6%) with the mean age of 61.53 years and 12 were women (44.4%) with the mean age of 60.92 years. Young patients (younger than 45 years) were accounted for 22.2% (2 women and 4 men) (Figure 1).

The most common presenting symptoms were pain (59.3%), ulcer (55.6%) and mass on the tongue (45.4%), respectively.

Mean duration between refer to biopsy and beginning of the symptoms was 175 days, while a 77-years-old woman was referred for biopsy after 3 years of complaining, a 37-years-old man was undergone the biopsy only after 20 days.

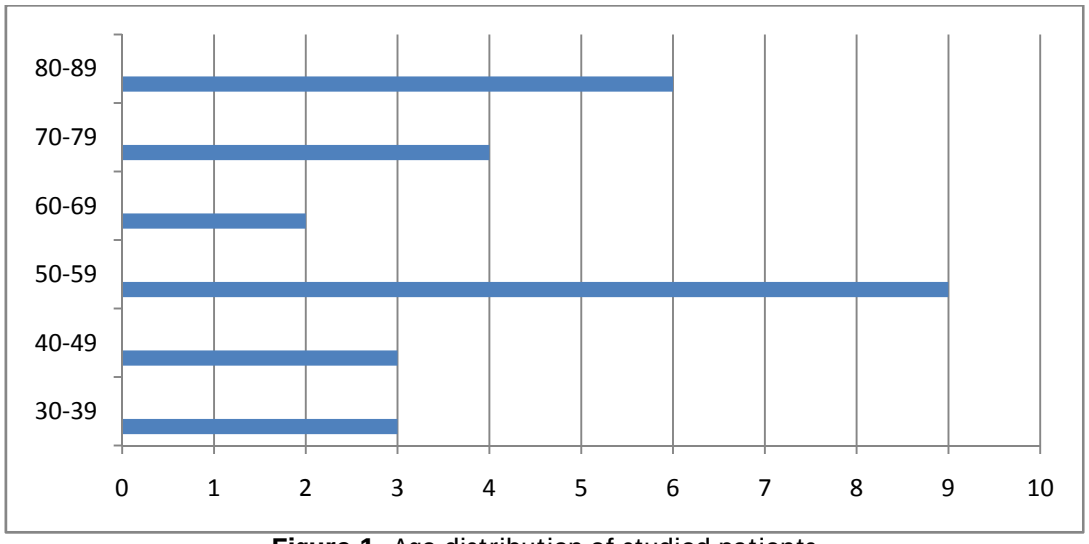

Figure 1. Age distribution of studied patients

Mean duration time between biopsy and surgery was 21 ± 9 days with the minimum of 4 and maximum of 40 days. Mean duration of referral for biopsy for patients less than 60 years was 113 days, whereas mean of this period for patients 60 years or older was 253 days (P = 0.026).

In assessment of social habits, smoking was registered in 5 patients (18.5%), and other 5 were passive smokers. None of our cases was alcohol drinker. Clinically neck node was detected in 7 patients (25.9%).

Radiologic evaluation for neck was done by CT-scanning with contrast in 17 patients (63%) demonstrated node positive for seven patients, of whom, 2 cases were not detected in physical examination; thus, overall the node was positive in 9 patients (33.3%).

Regarding TNM (tumor node metastasis) system, T2 [12 cases (44.4%)] and T3 [10 cases (37%)] were more common stages, respectively. Most of patients were referred to our hospital in advanced stages, 4 (14.8%) in stage IV and 11 (40.7%) in stage III; whereas 12 patients (44.4%) were in stage II (Table 1). 53.3% patients younger than 60 years were diagnosed in early stage (stage II) against only 33.3% in older group, although this was not statistically significant (P = 0.347).

All patients underwent hemiglossectomy surgery, except a 72-years-old man with advanced tumor (T4N2) who did not accept high-risk surgery and introduced for chemoradiotherapy. Selective neck dissection was performed in 6 positive-neck (66.6%) and 9 negative-neck (50%) patients. Radiotherapy was administered for patients were not good candidates for neck dissection, patients with positive node in neck dissection pathology and close margin in surgery (Figure 2).

Discussion

Cancer of the tongue usually affects men between the sixth through the eighth decades of life.[2] Gorsky et al. reported the mean age of 61.1 years (range: 18-96) and the men:women

Table 1. Frequency of patients regarding to TNM (tumor node metastasis) staging system

Stage	Primary tumor (T)	Neck node (N)	No.	Percent
II	2	0	12	44.4
	3	0	3	11.1
III	1	1	1	3.7
	3	1	7	25.9
IV	4	0	3	11.1
	4	2	1	3.7

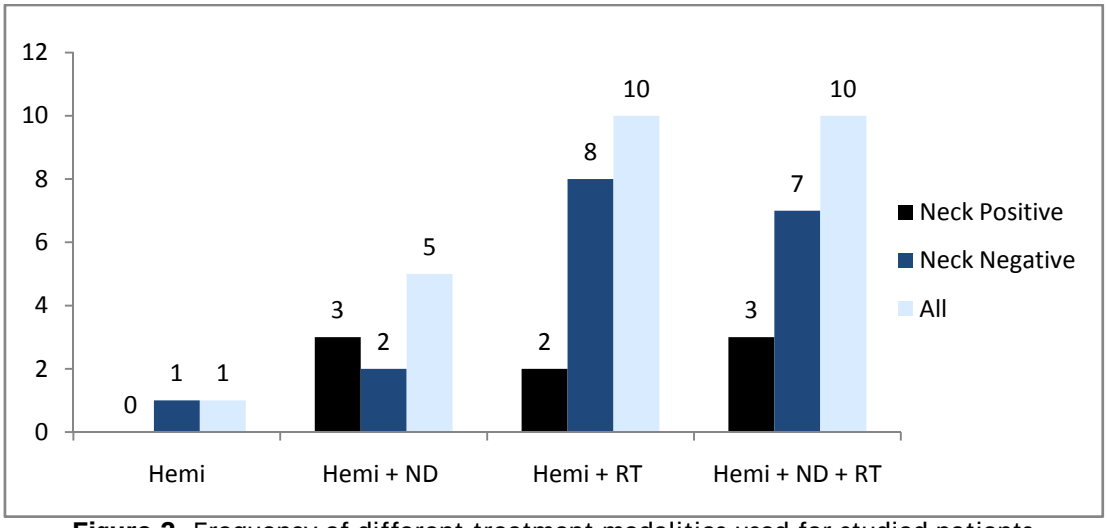

Figure 2. Frequency of different treatment modalities used for studied patients
Hemi: Hemiglossectomy ND: Selective neck dissection RT: Radiotherapy

ratio of approximately 3:2 for the cancer of the tongue.[7] This study also demonstrated the same age of incidence, but the men:women ratio was a little lower (1.25:1).

The incidence of oral cavity SCC (OCSSC) has been decreasing while the incidence of OTSCC has been increasing among young adults.[1,8-10] Patel et al. reported the incidence of approximately 12% among young adults (under 45 years) and demonstrated increased rate among young population, specially women, despite of decreasing rate of OTSCC among other age groups.[4] Kantola et al. explained that approximately 12% of their patients were under 45 years old.[11] In contrast of these results, 22% of our patients were under 45 years old that is too more than other studies.

Although number of patients in our series was too small to judge about the increase of OTSCC in young adult in our region, another interesting finding confirmed our conclusion; only 40% of our patients were smoker (although near half of them were passive smoker) and none of them was alcohol drinker.

Gorsky et al. study revealed 79% of the patients smoked, 58% consumed alcohol on a daily basis, and 43% consumed more than 4 alcoholic drinks daily.[7] Kantola et al. also reported over half of the patients were smokers and 22% were heavy alcohol users.[11] Great proportion of non-smoker, non-drinker and larger incidence in young adults in our region should be studied more. Other risk factors should be asses in controlled studies.

Nowadays, increasing evidence for the role of HPV in the pathogenesis of head and neck cancer is clear.[12,13] Some studies has been revealed presence of HPV in OTSCC patients.[5,6] da Silva et al. used polymerase chain reaction (PCR) to detect the presence of HPV genome in fresh-frozen tissue specimens from SCC of the tongue margin. Thirty-seven of 50 patients (74%) had a positive PCR for oncogenic HPV.[14] In contrast to these studies, some authors believed minimum role of HPV in OCSCC despite evident role in oropharyngeal carcinoma.[4,9,10]

Gillison et al. detected HPV genomic DNA in 12% of 84 biopsy specimens collected from oral cavity carcinomasa versus 57% among 60 specimens of carcinoma of the oropharynx.[15] In another recent study, conducted in Sweden, HPV was detected in 40% of 25 base of tongue SCC cases but in only 2.3% of 85 mobile tongue SCC cases.[16] In a study of oral carcinoma risk in relation to sexual history and evidence of HPV infection, other investigators found that the risk of oral carcinoma increased significantly with decreasing age at first intercourse, increasing number of sexual partners, and a history of genital warts.[17]

According to recent studies, the role of HPV is not as clear as oropharyngeal carcinoma and especially in our region, according to religious and cultural characteristics, it is more unlikely to associate HPV to increasing incidence of OTSCC in young adult and non-smokers. Although a recent study by Khaje in our region detected HPV (types 16 and 18) in 10 out of 35 in non-smoker tongue SCC group and 1 out of 30 in the control group,[18] more studies with large number of patients are needed to determine the role of HPV in OTSCC.

By the way, some authors suggested other risk factors for tongue SCC. Possible causal factors may include genetic abnormalities (e.g. Fanconi anemia), other oncogenic viral infections, and/or other environmental exposures. More than 100 types of HPV have been identified, and although type 16 is most often associated with HNSCC, it is possible that other HPV type(s) may be associated with OTSCC. Current HPV detection methods assess for a limited number of the most common high- and low-risk HPV types. Other less common HPV types could potentially be causal factors in OTSCC.[14]

Almost all patients with tongue SCC have several complaints made them to seek medical attention. The most common

symptoms are pain and ulcerative mass.[1] Despite of above, in our study mean duration of complaint to biopsy was 175 days and more than half of patients referred in advanced stages. Some reasons are poor access to medical care, delay by non-medical stuffs, vain believes and unfortunately, unawareness of first line care givers.[19] Later needs more attention to educate the public generally and the physicians and dentists, especially to be aware of any recurrent or persistent ulcer or mass on the tongue. It is a rule to biopsy any painful mass or ulcer lasting for more than 2 weeks, regardless of whether receiving antibiotics or not.

Poor access to medical care is a very serious problem especially for elderly ages. To determine the role of age on this entity, we arranged patients in two groups, more and less than 60 years. Mean duration of referral for biopsy for patients less than 60 years (113 days) significantly less than patients of 60 years or older ages (253 days).

The TNM stage has been found to be the most important prognostic factor among tongue SCC patients.[11,20] In our study, 53.3% patients younger than 60 years were diagnosed in early stage (stage II) against only 33.3% in older group; although this was not statistically significant. In contrast to our results, review of literature reports revealed that diagnosis of tongue SCC is frequently in early stages.[20]

In conclusion, early diagnosis especially in elderly (more than 60 years old) is associated with good prognosis of tongue SCC and better survival. It seems that planning for the education of the public through the general media is a priority.

Another important policy is informing the first line care giver to be aware of any suspicious intraoral lesions and if no improvement is evident after two weeks, refer for biopsy is mandatory. It is better to have a lower threshold for biopsy, even in the first visit, in elderly patients who are unable to complain or have difficulty to access medical care.

Conflict of Interests

Authors have no conflict of interest.

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