Preoperative Assessment and Histopathological Upgrading In Squamous Cell Carcinoma of Oral Tongue

Hurtamina Khan,[1*] Sameer Qureshi,[1] S. M. Tariq Rafi[1]

ABSTRACT

Objective

To assess preoperative extent of tumor based upon clinical examination and radiological findings and its relation with histo-pathology report for final staging.

Study design

Retrospective review.

Place & Duration of study

Department of ENT & Head and Neck Surgery, Jinnah Postgraduate Medical Center Karachi, from June 2014 to June 2018.

Methodology

The file records of the biopsy proven patients with squamous cell carcinoma of oral tongue who underwent primary surgical resection and neck dissection, were reviewed. Clinical staging of oral tongue tumor was done preoperatively by clinical examination and radiographic investigations including CT scan with contrast of oral cavity and neck. All patients underwent primary excision with neck dissection where indicated. Postoperatively pathological staging of tumor was done. Data was entered into pre designed form and analyzed with descriptive statistics.

Results

A total of180 patients met the inclusion criteria. There were 125 (69.45%) males and 55 (30.55%) females. Stage 1 oral tongue carcinoma was upgraded in eight patients out of 46 patients into stage 2, stage 2 pTNM upstaged only in 12 patients into stage 3 out of 69 patients. In six out of 65 patients clinical staging differed pathologically from stage 3 to stage 4. Of the total 154 (85.55%) remained in same pTNM and cTNM and in 26 (14.44%) patients clinical staging differed and upgraded.

Conclusion

The pathological staging in squamous carcinoma of oral tongue differed and up-staged from preoperative clinical staging in only 14.44% patients.

Key words

Oral tongue carcinoma, Staging of tumor, Neck dissection.

INTRODUCTION:

More than 90% of all head and neck neoplasms are squamous cell carcinoma (SCC).[1] There are various risk factors that can lead to the development of head and neck SCC many of which are related to life style with few genetic predisposing factors. There is significant risk of SCC in those who use tobacco. In Pakistan around 100 million individuals use smokeless tobacco.[2] The tongue remains the most common intraoral site of carcinoma all over the world with huge morbidity and mortality.[3] The oral tongue malignancies account for 25% - 50% of all cases of oral squamous cell carcinoma. The usual site of involvement is the margins and anterior part of the tongue in more than 66% of cases.[4] Developing countries have the higher incidence of oral cancers in comparison with developed world.[5] An alert for Pakistan has been issued by WHO in this context.[6]

The anatomical and physiological characteristics of tongue helps in an early local spread as well as metastasis of SCC.[7] Clinical evaluation by palpation is reported as 60% - 70% sensitive in giving clue to the extent of tumor however the use of CT scan

[1] Department of ENT and Head & Neck Surgery, JPMC, Karachi

Correspondence:

Dr. Hurtamina Khan [1*]
Department of ENT and Head & Neck Surgery
Jinnah Postgraduate Medical Centre (JPMC)
Jinnah Sindh Medical University (JSMU) Karachi
Email: drhurtamina@hotmail.com

improves the precision to around 90%.[8,9] The TNM staging is commonly used to find out the extent of spread.[10] Precise clinical examination helps in planning treatment and discussing prognosis of tumor with the patients.[11] Oral squamous cell carcinoma treatment includes surgery, chemotherapy and radiotherapy which is dependent on the tumor stage as well as the risk factors like age, immune status and comorbidities.[12] The frequency of subclinical metastasis is reported as 20%. These patients may be missed and present later with metastatic disease. Pathological staging of the tumor is most important in planning further treatment.[13] The objective of this study was to determine the frequency of upgrading of tumor stage made on preoperative assessment after histo-pathological report.

METHODOLOGY:

This was a retrospective review of data records of patients with biopsy proven squamous cell carcinoma of oral tongue who underwent primary surgical resection and neck dissection between June 2014 and June 2018 in the Department of ENT / Head & Neck Surgery at Jinnah Postgraduate Medical Center Karachi. Approval of study was taken from institution review board.

Patients between 16 years and 50 years with oral-tongue squamous cell carcinoma of stage 1 - 111, according to TNM classification were included. All patients did not receive any chemotherapy and radiotherapy. The variables for clinical and pathological staging included detailed history, clinical examination of the ulcerative lesion size, site, margins, adjacent structures involvement, mobility of the tongue, status of cervical lymph nodes, oral hygiene status, findings of CT scan of oral cavity and neck nodes, surgical procedure details, type of neck dissection and histopathological reports including tumor differentiation, perineural invasion, extracapsular invasion, vascular and lymph node involvement. All record was documented on a pre designed form. Data entry was done using SPSS

software version 16 and descriptive statistics were used to present results.

RESULTS:

Out of 180 patients with SCC of oral tongue there were 125 (69.45%) males and 55 (30.55%) females. Most common site of the tumor was the right lateral border in 102 (56.66%) and left lateral border in 72 (40%) patients . In six (3.33%) patients lesion was on the dorsum of tongue. The most common presenting symptom was lesion on the lateral border of tongue which was a non-healing ulcer for more than three weeks. Fifty-nine (32.77%) patients were using *gutka.* Details of different addiction material used by the patients is given in table I.

All patients with the carcinoma of oral tongue underwent excision either partial or hemi-glossectomy and in N0 neck status selective extended supra-omohyoid neck dissection was performed and in N (+ve) modified or radical neck dissection was done. The entire specimen (primary lesion with markings of threads / non-lymphatic structures and neck nodes) sent for histopathology for staging. The patients were followed postoperatively at 3 months, 6 months and at one year interval. All patients were referred to oncology department for chemo-radiotherapy treatment. Data related to clinical and final staging after histopathological report is given in table II.

DISCUSSION:

Squamous cell carcinoma of oral tongue is a crippling disease that severely affects the quality of life of the patient. Most of the study population belonged to the low socioeconomic status and from remote parts of the country. They had high frequency of addiction and casual attitude towards hygienic practices. Health seeking behavior was poor and limited health care facilities further delayed the diagnosis and treatment.

A non-healing ulcer on the lateral border of the tongue was the most common presentation in this study which was ignored by many patients.

Table I: Addiction Habits Among Patients of Tongue SCC	
Addiction Habits	**Frequency (n %)**
Gutka	59 (32.77%)
Tobacco	18 (10%)
Alcohol	18 (10%)
Paan	31 (17.22%)
Chalia	30 (16.66%)
Naswar	15 (8.33%)

Table I: Upgrading To Next Stage In Pathological Staging			
Clinical Staging at Preoperative Assessment	No. of Patients (n)	Upgrading To Next Stage In Pathological Staging	No. of Patients (n)
Stage I	46	Stage II	8
Stage II	69	Stage III	12
Stage III	65	Stage IV	6
Total	180	Total	26 (14.44%)

Same observation is reported in another study.[14] Majority (95%) of the patients in this study were addict and the most common agent was tobacco in various forms. Betel quid and betel nut are carcinogenic agents.[15] A report from India also showed increased frequency of SCC in patients using tobacco.[16]

In our study majority of the patients were males which is similar to what is reported in literature.[16] The TNM classification has been used for decades to estimate the prognosis and survival of oral cancer patients, besides providing guidance on the treatment regimen.

The challenge is to find the most suitable treatment for patients according to the tumor stage.[17] In T1N0 stage of carcinoma tongue the lymph nodes are neither clinically palpable on careful examination nor visible upon radiological modalities.[18] In this study all cases of squamous cell carcinoma of tongue underwent excision/ partial hemi-glossectomy with extended supra-omohyoid neck dissection and modified/ radical neck dissection. In clinically negative neck N0, excision with extended supra-omohyoid neck dissection was performed. Lymph node status is considered as the mainstay of treatment and prognosis. Survival rate decreases by 50% as distant metastasis increases.[19]

All patients in this study were discussed in tumor board meeting and final treatment plan was made with consensus. In pathologically upstaged cancers postoperative radiotherapy treatment was planned. In one study, patients with clinically early stage tumors were pathologically upstaged in 21.9% of cases and unchanged in 78.1% and patients with clinically advance stage tumor were pathologically down-staged in 7.9% cases and unchanged in 92.1%. In our study in 26 (14.44%) patients tumors were upstaged.

CONCLUSIONS:
The frequency of patients who were upstaged in this study was small but it had an important bearing on the treatment plan.

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Author's Contributions:
Hurtamina Khan: Manuscript writing, literature search & data collection.
Sameer Qureshi: Reviewed article.
S. M. Tariq Rafi: Reviewed article