

A CLINICAL STUDY ON CARCINOMA TONGUE-A PROSPECTIVE ANALYTICAL STUDY IN A TERTIARY CANCER CARE CENTRE IN COASTAL ANDHRA PRADESH

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ABSTRACT

Back ground: The incidence of tongue cancer is increasing in the recent time in India. High risk of neck metastasis is seen in tongue cancer. Tongue cancer is best treated with multimodality approach

Aims and Objectives: To analyze the clinical and pathological data, prognosis and treatment modalities in a series of cases of carcinoma tongue and compare our study with similar other studies.

Materials and methods: A Prospective clinico-pathological study of 170 cases of carcinoma tongue in tertiary cancer centre for a period of 3 years from April 2014 to March 2017. Patients with confirmed diagnosis of Ca tongue were included in the study. The data analyzed were most common age group of presentation, gender preponderance, most common stage at presentation along with the most common histo-pathological type with the most common grade. We assessed the nodal involvement at presentation, and the different treatment modalities offered to patients.

Results: 170 cases of carcinoma tongue are included in this study of which 150 cases are in anterior two-thirds of tongue, 15 cases are in posterior one-third of tongue and 5 cases presented with anterior and posterior tongue involvement. Male to female ratio 2.5 : 1. Mean age of diagnosis 51.9 years. Left side involvement is most common (56%). Palpable neck nodes in 110 cases (64%). Occult lymph node disease in 33.3%. Stage III and grade II most common presentation. Primary chemo-radiotherapy is given for posterior one third involvement of tongue; all the other cases are taken up for surgery - wide local excision / hemiglossectomy/ resection & PMMC reconstruction. Extended supra-omohyoid / MRND done and post-operative chemo/radiotherapy given as appropriate. Recurrence either at primary site or neck was noted in 17 patients (10%) within the study period.

Conclusion: In this study we conclude that tongue cancer is most common in males 30- 60 years age; lateral aspect of anterior two-thirds of tongue being most common site. Tongue cancer has high risk of both palpable and occult lymph node disease in neck; neck dissection offers better disease control. Patient of tongue cancer should be treated in multi disciplinary approach to achieve good prognosis.

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INTRODUCTION

Traditionally gingivo-buccal cancers⁽¹⁾ were the most common oral cavity cancers in our country while tongue cancers were more common in the western world⁽²⁾. The incidence of tongue cancer is increasing in the recent time with the possible role of HPV & EBV infection, smoking, tobacco chewing, alcoholism, low socioeconomic status⁽³⁻⁸⁾. The treatment modalities available for tongue cancer are surgery, radiotherapy (RT), chemotherapy (CT), and

combined modalities⁽⁹⁾. The prognosis of carcinoma tongue is poor, probably because of the high frequency of lymph node metastasis and local invasion, delayed diagnosis, poor treatment follow up⁽¹⁰⁾. Despite recent advances in treatment for this malignancy, the overall five-year survival rate⁽¹¹⁾ of patients is usually below 50%. The objective of this study was to analyze the clinical and pathological data, prognosis and treatment modalities in a series of cases of carcinoma tongue.

MATERIALS AND METHODS

This is a Prospective clinico-pathological study of 170 cases of carcinoma tongue in our hospital for a period of 3 years from April 2014 to March 2017. Patients with confirmed

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diagnosis of Ca tongue were included in the study. Detailed data from the case files were collected and compiled for further analysis. The data analyzed were most common age group of presentation, gender preponderance, most common stage at presentation along with the most common histopathological type with the most common grade. We assessed the nodal involvement at presentation, and the different treatment modalities offered to patients. We compared our results with various other studies.

RESULTS

170 cases of carcinoma tongue are included in this study of which 150 cases are in anterior two-thirds of tongue, 15 cases are in posterior one-third of tongue and 5 cases presented with anterior and posterior tongue involvement.

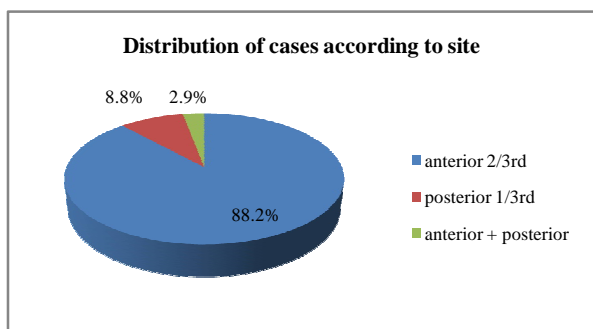


Figure 1 Occurrence of tongue cancer according to site

Out of 170 cases of tongue cancer, 115 cases are seen in males and 55 cases in females. Male to female ratio in this study is 2.5: 1.

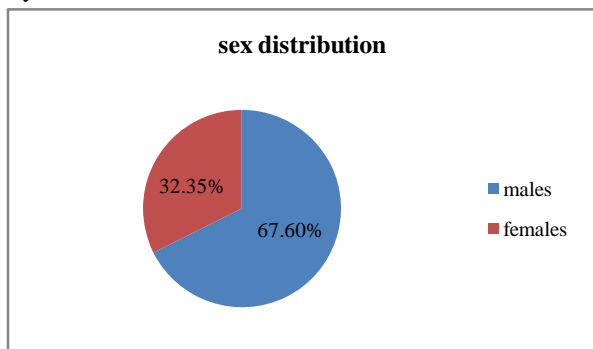


Figure 2 Sex distribution of tongue cancer in this study.

Mean age of diagnosis is 51.9 years, ranging between 27 years to 81 years. Most of the cases are seen between 30 to 60 years of age. Most common age group affected in this study is 51 - 60 yrs age group. Youngest case recorded in this study is 27 years age.

Table 1 Age vice distribution of carcinoma tongue cases.

Age distribution (years)	Number of cases	% (n = 170)
21 - 30	02	1.2
31 - 40	34	20
41 - 50	43	25.3
51 - 60	54	31.7
61 - 70	21	12.3
71 - 80	15	8.8
81 - 90	01	0.6

Right side was involved in 41% of cases while left side of tongue involved in 56 % of cases. Tumour was crossing midline in 3% of cases. In the anterior two-thirds of tongue, lateral aspect of tongue was the most common site (80%)

followed by dorsum (5%) and ventral (5%) aspect of tongue. Ipsilateral neck nodes were clinically palpable in 56.4% of cases (96 cases); bilateral (ipsilateral with contralateral) neck nodes clinically palpable in 8% of cases (14 cases).

Table 2 Distribution of histology in this study

Histology	No. of cases	% (n = 170)
Squamous	159	93.5
Verrucous	9	5.3
Undifferentiated	1	0.6
Squamous with lymphoid stroma (lympho-epithelioma)	1	0.6

In 60 cases (35.3%), neck nodes are not clinically palpable. Neck node dissection was not done in 9 out of 60 cases in view of verrucous histology. In the remaining 51 cases, prophylactic extended supra-omohyoid neck dissection was done following which 17 cases showed positive nodal histology. Therefore incidence of occult lymph node disease is 33.3%.

Table 3 Percentage of grade of tongue cancer in this study.

Grade	No. Of cases (%) (n=170)s
I (well differentiated)	42 %
II (moderate)	48 %
III (poor differentiation)	10 %

46% of patients presented as stage III disease while stage II disease is seen in 34% of cases.

Table 4 Stage presentation of carcinoma tongue

Stage	% of presentation (n=170)
I	12 %
II	34%
III	46%
IV A + IV B	8%

Table 5 Primary therapy for carcinoma tongue in this study.

Primary treatment (surgery / chemo-RT)	No. of cases	% (n=170)
Wide excision only	9	5.2%
W.E with prophylactic extended SOHND	51	30%
Hemi-glossectomy / W.E with extended SOHND	24	14.1%
Hemi-glossectomy / W.E with I/L MRND	35	20.6%
Hemi-glossectomy / W.E with I/L MRND & C/L extended supraomohyoid	17	10%
W.E , hemi-mandibulectomy & PMMC flap with I/L MRND +/- C/L SOHND	14	8.2%
Total glossectomy & RND (anterior growths with posterior extension)	5	2.9%
Primary chemo/RT (Posterior one third involvement alone)	15	8.8%

W.E = Wide local excision
MRND = Modified radical neck dissection
SOHND = supra-omohyoid neck dissection
RND = Radical neck dissection
PMMC = Pectoralis major myo-cutaneous flap
I/L = Ipsilateral
C/L = Contra-lateral

Recurrence either at primary site or neck was noted in 17 patients within the study period

DISCUSSION

Cancers of the oral cavity⁽¹²⁾ are a significant public health problem in India. Traditionally gingivobuccal cancers were the commonest oral cavity cancers in the country as opposed

to tongue and floor of mouth cancers which were common in the developed world. However, the incidence of oral tongue cancers has been increasing in the last couple of years in India. Cancer of anterior two-third of tongue are more common than posterior one-third in accordance with literature⁽¹³⁾. According to ICMR⁽¹⁴⁾, consensus document, most common site of involvement is lateral border of tongue accounting for 85% of cases ; dorsum, ventral surface and tip of the tongue (5% each) form rest of the cases. This similar pattern is observed in our study. In a review article by Ken Russel Coelho⁽¹⁵⁾, there was a lower incidence of Ca tongue in females as compared to males in all age groups and the incidence increased with the age while in our study, incidence is most common between 30-60 years of age.

According to the study of Elizebath 2001⁽¹⁶⁾, The mean age at presentation was 30.5 years (range 18 to 35, SD 4.1) of which 74 (64.3%) men and 41 (35.7%) women with a male to female ratio of 1.7:1. In our study, men age of presentation is 51.9 years. Vargas *et al.*⁽¹³⁾ have reported in a comparative retrospective study that the Squamous cell carcinoma of an anterior tongue shows more aggressive behavior in terms of recurrence rates and recurrence intervals, in young females than in older patients. According to Lam *et al.*⁽¹⁷⁾, tip and lateral border of tongue were most common sites and study by V Ranjan⁽¹⁸⁾ 2014 showed right lateral border to be the most common site. In our study, left lateral border is the most common site. Huang *et al.*⁽¹⁹⁾ in a comparative retrospective study in early cT1 and cT2 oral cancers found that incidence of node positivity was 5.2% and 14.6%, respectively. They also concluded that level I/II nodes were most common sites for occult metastasis in patients with elective neck dissection and recurrences in patients. The skip metastasis to level IV nodes is rare in early stage cancers. In our study, nodes are clinically positive in 64.4% of cases (ipsilateral / bilateral) and the incidence of occult lymph node disease is 33.3%. According to study by Ho CM and Lam KH⁽²⁰⁾, incidence of occult lymph nodes in ca tongue was 40% The salvage rate after appearance of nodal metastasis was 30%. According to Elizabeth study⁽¹⁶⁾, regional lymph node involvement was present in 51.3% (n=115) patients. This study also highlights that taking stage of the disease by age, advanced stage lesions (stages III and IV) were significantly more, i.e., 39/70 (55.7%) in patients below 30 years compared to 31 (44.3%) in those above 30 years of age.

Table 6 comparison of grade of differentiation between Elizabeth and our study (percentage of cases)

Grade of differentiation	Elizabeth Mathew 2001 study (pub med)(16) (n = 115)	Our study (n = 170)
I (well)	47.8%	42 %
II (moderate)	35.7%	48%
III (poor)	0.9%	10%
Unknown	15.6%	-

Durazzo *et al.*⁽²¹⁾ reported around 50% cases presented with clinically Stage IV lesions and the staging didn't change significantly after pathological examination. To the contrary, in our study stage IV disease accounted for 8 % of cases.

Table 7 comparison of stage vice presentation between Elizabeth and our study

Stage	Elizabeth Mathew 2001 study (pub med) (16)	Our study
I	15.7%	12%
II	25%	34%
III	33.9%	46%
IV	26.9%	8%

The treatment of oral tongue cancer requires a multidisciplinary approach. The main aims of treatment are tumour eradication, recurrence prevention and conservation and/or restoration of form and function of the tongue. The choices of treatment are surgery (which includes local resection with or without neck dissection), RT, CT or combined modalities. Huang *et al.*⁽¹⁹⁾ advised elective neck dissection for all cT1 and cT2 cases even in the presence of nodes negative neck by computed tomography scan and magnetic resonance imaging. They concluded that SOHND is sufficient to remove the majority of lymph node metastases in early stage tongue cancers. In their study elective neck dissection and tumor stage were independent predictors of neck control rate and overall survival. In our study, prophylactic extended supra-omohyoid dissection is done in 30% of cases. Primary chemoradiotherapy is given in 8.8% of cases. Total glossectomy was done in 2.9% of cases. These results are almost similar to retrospective study done by V ranjan 2014⁽¹⁸⁾ but slightly differ from Elizabeth⁽¹⁶⁾ study in which majority of the patients with early disease, 73.3% were treated by radiotherapy as the primary modality, either alone or followed by either surgery or chemotherapy while surgery as the primary modality was employed in 35.7% patients in stages III and IV either alone or followed by RT and chemoradiation was given to 15 patients.

Recurrence either at primary site or neck was noted in 10% of cases within the study period which is far less than the recurrence rate (32.7%) observed in Bo Wand, Shu Zhang study 2013⁽²²⁾. There was a significant relationship of recurrences with late stage of presentation and with higher tumor grades and nodes positivity in accordance to the study of Sessions DG 2002⁽²³⁾. Hick's *et al.*⁽²⁴⁾ stated that adequate margins are crucial to local control otherwise recurrences are common.

CONCLUSION

This study highlights that tongue cancer is most common in males 30- 60 years age; lateral aspect of anterior two-thirds of tongue being most common site. Stage III and grade II is most common presentation in this study. Tongue cancer has high risk of both palpable and occult lymph node disease in neck; neck dissection offers better disease control. Patient of tongue cancer should be treated in multi disciplinary approach to achieve good prognosis. The study also warrants health education and more awareness campaigns⁽²⁵⁾ for early diagnosis and proper treatment at initial stages for a better prognosis of the disease.

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