



NECK MANAGEMENT IN EARLY TONGUE CANCER, (OUR EXPERIENCE)

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ABSTRACT

Background: The incidence of occult neck metastasis showed a high prevalence in tongue cancers.

Objectives: To evaluate the present effect of elective neck dissection (END) in treatment of oral tongue tumors in early-stage with emphasis on metastasis of lymph node. In adding, special effects of END on local or systemic disease relapse and determine the survival rate.

Subjective: This manuscripts was retrospective, the involved patients has stage I and II tongue tumor enrolled from maxillofacial and plastic surgery department Alexandria university over five years (2015-2020) The individual data were statistically managed for disease free survival (DFS) and relapse rate.

Results: This study was carried out on 100 patients accessible to the Plastic Surgery Department, Alexandria University, they was suffering from oral tongue tumor but only 45 were diagnosed by clinical and radiological investigation as first stage (stage I and II). Smokers was presented as 65% of studied sample. Greatest lesions were dealt with by surgery, either by wide local excision (40%) or hemiglossectomy (60%). Management of neck findings was either by neck dissection (75.5%) or “wait and see” (24.5%). The rates for local and nodal recurrence were 8.8% and 20.0%, correspondingly. Study of relations between disease free survival and other studied parameters showed a significance for acceptance of adjuvant management and the dissected lymph node position.

Conclusion: END must be done routinely in patients with tongue cancer in early-stage.

KEY WORDS: Early Tongue malignancy –Neck management –Lymph node - elective neck dissection

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INTRODUCTION

Squamous cell carcinoma (SCC) of the tongue is the most common malignancy in the oral cavity, and surgical excision is the mainstay treatment.⁽¹⁾ Though, whether elective neck dissection (END) would be comprised in the management of early stage of lesions (cT1-2N0) of the tongue still debated. The chief fight supportive predictable END is the early discovery of occult metastasis, which allows for alteration of the adjuvant management strategy and development in diagnosis.⁽²⁾

The management of neck metastases in malignant oral cavity tumor patients has altered quickly in the previous period. In this respect, earlier manuscripts must exposed that the greatest communal locations for metastases of oral tongue tumor were at stages I and II.⁽³⁾

While the cervical lymph nodes remain frequently node-negative in the early stages (T1–T2) of squamous cell carcinoma of the tongue, still, these early-stage tongue carcinomas can port occult nodal metastasis in which the occurrence has been described variously in the range of 20% and 50%.⁽⁴⁾

The radiological and or the clinical examination of N0 neck is achieved rendering to tumor depth: patients with thin tumors are observed, on the other hand the elective neck dissection was done for patients with thick tumors.

After surgery it is recommended for patients with high risk factors for local-regional recurrence to adjuvant radiation while those without are observed. The out come of this treatment procedure has a benefit for both Stage I/II oral tongue cancer treatment whichever with surgery only or followed by modality therapy.⁽⁵⁾

The management of the patients of negative neck (cN0) with T1 and T2 tongue tumor still debated, with opposing management protocols used in other institutions.⁽⁶⁾

Furthermore, the concept of functional neck dissection was popularized by Shah et al.,⁽⁷⁾ then Ballantyne⁽⁸⁾ led to the receipt of discerning neck dissection as management for lymph node metastasis in different grade. The term supra omohyoid neck dissection (SOND) mention stoward elimination of lymph nodes controlled in grade I and II. This method takes regularly used in the treatment of the negative clinically lymph node neck in patients with SCC of the oral tongue.⁽⁹⁾

Gad et al. decided that all the SCC patients with oral tongue must has stage I–IV nodes detached if an optional neck dissection is portion of the first treatment. However, the correct treatment of the negative neck in primary SCC by clinical method of the oral tongue remains controversial.⁽¹⁰⁾

Aim of the work

The objectives of our manuscripts was to evaluate the present effect of elective neck dissection (END) in treatment of initial-stage oral tongue tumors through emphasis on metastasis of lymph node. Also, investigated the effects of END on regional or systemic disease relapse and survival rate.

PATIENTS AND METHOD

This study was retrospective manuscripts, carried out on patients with both stage I II tongue tumor admitted from maxillofacial and plastic surgery department Alexandria university over five years (2015-2020). Before surgery, the patients was classified by using MRI or CT scan to determine the stage of lymph node negative.

Inclusion criteria:

Stage I and II tongue cancer

- Tumors <4 cm without invasion to surroundings clinically or following pathological examination.
- Negative neck either by clinical examination, by FNAC or by radiological investigation

Exclusion criteria

- Tumors > 4 cm or invading surrounding tissues either by examination or by pathological examination.
- Positive neck.

Study members experienced tumor removal which ever with or without neck dissection. The classification by using TNM was monitored to strategies usual used the American Joint Committee on Cancer (AJCC), 1997 edition.⁽¹¹⁾

Data were collected by revising hospital records of patients diagnosed as early stage oral tongue cancer. Basic and demographic data which including age, sex, initial clinical presentation, laboratory investigations, U/S and CT results, biopsy results, treatment for the tongue lesion [wide local excision (WLE) or hemiglossectomy], management for the neck (type of neck dissection if performed, radiotherapy, or Observation), pathological features (tumor size, grade, margins, and lymph node status), post-operative course and follow up (postoperative complications, local recurrence and regional or distant failure). Data was statistically analyzed for:

- Disease free survival (to the date of recurrence whether local or distant)
- Local failure (recurrence)
- Distant failure (recurrence)

Statistical method:

The Data was collected and entered into the personal computer. Statistical analysis was done using Statistical Package for Social Sciences (SPSS/ version 22) software.

The statistical test used as follow: Arthematic mean, standard deviation, For normally distributed data, comparison between two independent population were done using independent t-test. While for categorized parameters Chai square test was used. The level of significant was 0.05.

RESULTS

From 100 patients (76 male and 24 females) which admitted to our department suffering rom oral tongue cancer it was found that 45 patients were diagnosed by clinical and radiological as an early stage (stage I, stage II). It was found that 75% of the patients was smokers. Most lesions were dealt with by surgery, either by wide local excision (40%) or hemiglossectomy (60%). Management of neck lesions was either by neck dissection (75.5%) or “wait and see” (24.5%). The recurrence rates of local and nodal was 8.8% and 20.0%, respectively. It was found a significant relation between DFS and adoption of adjuvant therapy and the dissected lymph node status.

TABLE (1): Patients characteristic (number 100)

	Number “n=100”	Percent
Age		
≤60	44	44.0
> 60	56	56.0
Sex		
Male	76	76.0
Female	24	24.0
Smoking		
Yes	75	75.0
No	25	25.0
Stage		
I	20	20.0
II	25	25.0
III	30	30.0
IV	25	25.0
Tumor size		
<2	23	23.0
2-4	22	22.0
>4	55	55.0
Differentiation		
Well/moderate	54	54.0
Poor	46	46.0

Table (2), show the comparison between elective neck dissection group and non neck dissection group, regarding age, sex, smoking, stage, tumor size and differentiation, the two groups was matched without significant difference, while the local recurrence was zero in elective neck dissection and 4 cases (36.4%), in non elective neck dissection. The nodal recurrence was found in 2 cases in elective neck dissection (5.9%) while 63.6% of the non elective neck dissection had nodal recurrence, there was a highly significant increase in both local and nodal recurrence in non elective neck dissection group more than the elective neck dissection group, finally the mean disease free survival in elective neck dissection group was significantly higher than the non elective neck dissection group ($p < 0.01$).

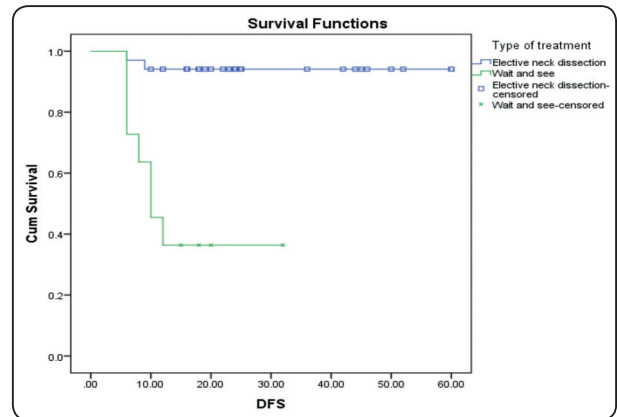
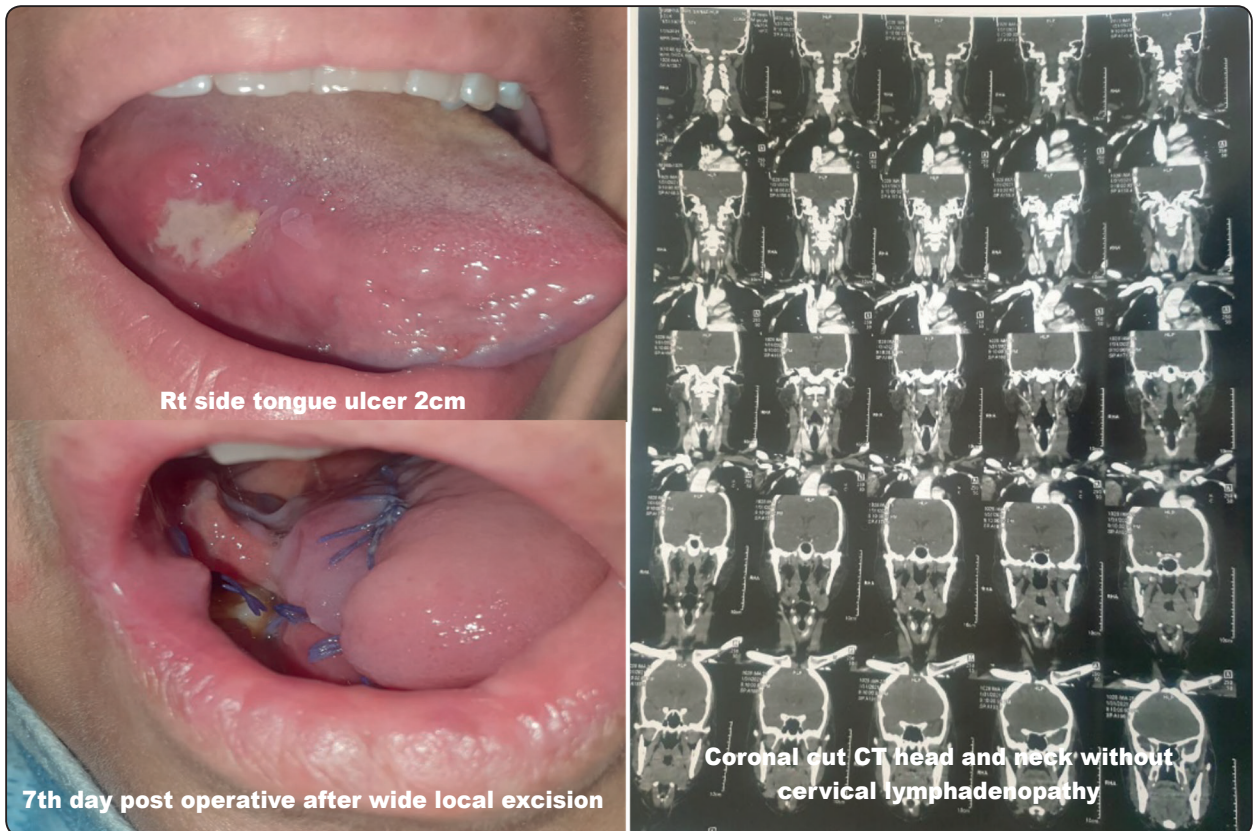


Fig. (1): Kaplan-Meier plot to compare between the two different modalities regarding disease free survival (months) ($p < 0.01$)

TABLE (2): Comparison between elective neck dissection group and non neck dissection group.

	Elective neck dissection "n=34"		Non elective neck dissection "n=11"		P value
	No.	%	No.	%	
Age					
≤60	14	41.2	7	63.6	0.171
> 60	20	58.8	4	36.4	
Sex					
Male	28	82.4	8	72.7	0.382
Female	6	17.6	3	27.3	
Smoking					
Yes	28	82.4	8	72.7	0.382
No	6	17.6	3	27.3	
Stage					
I	14	42.2	6	54.5	0.333
II	20	58.8	5	45.5	
Tumor size					
<2	15	44.1	8	72.7	0.096
2-4	19	55.9	3	27.3	
>4					
Differentiation					
Well/moderate	18	52.9	7	63.6	0.396
Poor	16	47.1	4	36.4	
Local recurrence	0	0.0	4	36.4	0.002*
Nodal recurrence	2	5.9	7	63.6	0.0001*
Disease free survival mean±S.D.	26.85±14.5		13.00±7.9		0.004*



DISCUSSION

The oral cavity cancer and tongue malignant combined with high frequency of occult cervical metastases, poor salvage degrees, and increasing in the incidence of extracapsular spread (ECS) in the occurrence of palpable lymph nodes. Particularly, the occurrence of occult lymph node metastases signifies an important adverse predictive aspect in patient group. These clarifications deliver the foundation for elective neck management in this clinical object.⁽¹²⁾

The results of our study showed that the elective neck dissection group and non neck dissection group, was comparable to age, sex, smoking, stage, tumor size and differentiation, the two groups was matched without significant difference this results was important to eliminate the effect of basic clinical and demographic data on the out come and

final results (recurrence) so the only study factors was the type of intervention.

The local recurrence was zero in elective neck dissection and 4 cases (36.4%), in non elective neck dissection. The nodal recurrence was found in 2 cases in elective neck dissection (5.9%) while 63.6% of the non elective neck dissection had nodal recurrence, there was a highly significant increase in both local and nodal recurrence in non elective neck dissection group more than the elective neck dissection group, finally the mean disease free survival in elective neck dissection group was significantly higher than the non elective neck dissection group.

The palpation considered as the most applied means of stage the neck, the disadvantage of this method in high false negative rate (40.0%), The CT scan in combination with the palpation decrease

the false negative in detecting the grade to 22.7%. On the other hand the combination of palpation and MRI or positron emission tomography (PET) investigation improve the detection rate for neck nodal metastasis. In combination of MRI/PET can decrease the false negative cases to 6.7% in T1 tumors and 10.8% in cases with T2 tumors.⁽¹³⁾

There was an increasing in incidence of neck recurrence in patients with T1-T2 of oral tongue cancer who managed by main tumor excisions alone. The cervical lymph node metastasis convert consequently in about 38% to 42% of this patients. Rani et al., study the recurrence rate in the neck in OBS group and it was 28.0%, this percent was significantly higher in comparing with END group (12.7%) with p value <0.01.⁽¹⁴⁾

The treatment of head and neck cancer patients of N0 neck in early stage of tongue cancer may decrease the occult cervical lymph node metastasis. In some manuscripts the authors recommend accomplishment elective neck dissection.⁽¹⁵⁾ On the other hand some of the authors favor observation⁽¹⁶⁾. Recently, Abu-Ghanem et al.,⁽¹⁷⁾ labeled in meta-analysis study carried out on elective neck dissection versus observation in early tongue squamous cell carcinoma on both stage T1 and 2) that elective neck dissection can significantly reduce the rate of nodal recurrence and improve disease free survival compared with observational method.⁽¹⁷⁾

In study carried out by D'Cruz et al.⁽¹⁸⁾ they compare the final oncological outcome between two groups, elective and therapeutic surgery groups in controlled randomized prospective trial, they found at the end of follow up, there was a significantly higher overall survive and also in disease free survive rates in the END group. Also Ren et al.⁽¹⁹⁾ and Hutchison et al.⁽²⁰⁾ studies showed a same results in patients with small tumors.

The improved survival advantage in the elective surgery patients can clarified by the late management of metastatic neck cancer in patients initially treated with only primary tumor excision.

Consequently, it is reasonable to recommend that if patients with metastatic disorders could be preoperatively recognized by reliable markers and obtain certain management, the predictions might be comparable in the two groups. Many authors have tried to explore possible predictors, together with tumor budding⁽²¹⁾, activin A, tumor depth, muscular infiltration and vascular embolization, and depth of invasion (DOI).⁽²²⁾

CONCLUSION

Elective neck dissection must be done commonly in initial-stage oral malignant tumor tongue patients, even of being negative neck by different radiological examination.

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