BANGLADESH JOURNAL OF
OTORHINOLARYNGOLOGY
DOI: https://doi.org/10.3329/bjo.v29i1.68071
www.banglajol.info

Article info
Received : 22-09-2022
Accepted : 30-01-2023
No. of Tables : 04
No. of Figure : 0
No. of References : 15

Original Article

Prevalence of Recurrence in Early Tongue Cancer T1 or T2 with or Without Neck Dissection

***Uddin MM[1], Razib SFA[2], Islam MT[3], Azad MA[4]**

Abstract:

Background: *Patients with T1 T2 N0 mouth or tongue cancer that has been confirmed by a doctor may choose to have a neck dissection. Some say that nodal return of a T1 original tumor is well controlled, while others say that salvage is more often the exception than the rule.*

Objective: *To determine the likelihood of recurrence in T1 or T2 early tongue carcinoma with or without neck dissection.*

Methods: *The prospective cross-sectional clinical study was conducted from March 2021 to March 2023 at the Department of ENT and Head Neck Surgery, Combined Military Hospital, Dhaka. All 100 patients who presented with clinically determined T1 and T2 disease, as defined by the American Joint Committee on Cancer (AJCC), were treated at the Department of Otolaryngology of the Combined Military Hospital in Dhaka and underwent primary surgical resection of the tumor with or without neck dissection. The study eliminated cases of cancer involving the base of the tongue or recurring oral tongue cancer.*

Results: *In the neck dissection group, 3(6%) experienced local recurrence, 2(4%) experienced regional recurrence, and 1 (2%) experienced both (local and regional recurrence). There will be no dissection. 10(20%) Local recurrence, 3 (6%), Regional recurrence, and 1 (2% combined local and regional recurrence). Recurrence was 4(8%) in the neck dissection group and 14(28%) in the no dissection group.*

Conclusion: *In this study, the overall recurrence rate was 8% in neck dissection and 28% in no neck dissection. The overall recurrence rate in the no neck dissection group was significantly greater than in the neck dissection group.*

Keywords: *Early tongue cancer, Neck dissection, Recurerence.*

Bangladesh J Otorhinolaryngol 2023; 29(1): 5-10

Cite the Article: Uddin MM, Razib SFA, Islam MT, Azad MA. Prevalence of recurrence in early tongue cancer T1 or T2 with or without neck dissection. Bangladesh J Otorhinolaryngol 2023; 29(1): 5-10

1. Lt Col. Dr. Md. Momin Uddin, Advanced certified training in head neck cancer surgery, Classified ENT specialist and head neck cancer surgeon, Combined Military Hospital, Dhaka.
2. Dr. Sayed Farhan Ali Razib, Associate Professor, ENT specialist and head neck oncosurgeon, BSMMU, Dhaka
3. Lt. col. Dr. Md. Monsur Alam, Classified ENT specialist and head neck oncosurgeon. Combined Military Hospital, Barishal
4. Col. Dr. Md. Ali Azad. Classified ENT specialist and head neck oncosurgeon, Combined Military Hospital, Dhaka.

Address of Correspondence: Dr. Lt Col. Dr. Md. Momin Uddin, Advanced Certified Training in Head Neck Cancer Surgery, Classified ENT Specialist and Head Neck Cancer Surgeon, Combined Military Hospital, Dhaka.

Introduction:

The most important sign of survival for oral tongue squamous cell carcinoma (SCC) is the growth of regional neck node metastases. This is not only the main reason why treatment doesn't work, but also the best predictor of survival.[1] Regional lymph node metastases in the neck are a key part of planning care for OSCC and the most important predictor of survival.[2] T1-2 and no visible lymph nodes (cN0). OSCC is more likely to spread to the lymph nodes in the neck.[3,4,5]

In patients with T1 or T2 oral cancer, there is still some debate over the best way to treat a clinically negative neck. Patients with head and neck squamous cell carcinoma had the greatest tumor-related prognostic variation depending on the status of the cervical lymph node. Treatment of the neck is necessary for patients who have lymph node metastases. When entering the neck, whether to remove the main tumor or to restore the surgical defect, a neck dissection is necessary.[6]

Surgical excision is the gold standard treatment for early stage oral tongue squamous cell carcinomas (SCC).[7] It is not apparent, however, whether a patient with a clinically negative neck should opt for an elective neck dissection or simply be followed. Recurrence occurs in around 23% of cases of oral tongue cancer grade T1, and it is predominantly regional rather than local in nature.[8] The prognosis following a recurrence is a contentious topic: There are those who report effective therapy of a T1 original tumor's nodal recurrence, while there are others who consider salvage to be more of an exception than the rule.[9]

When SCC of the oral tongue is found at an early stage, the decision to treat the neck is not made easily. Even though there are diagnostic and therapeutic reasons for primary neck dissection, surgical involvement, which lengthens the time of general anesthesia, is not without risk. It is important to know how elective neck dissection may affect the result of a patient.

Materials and Methods:

The prospective cross-sectional clinical study was carried out in the Department of ENT and Head Neck Surgery, Combined Military Hospital, Dhaka during March'2021 to March, 2023. All 100 patients treated at the Department of Otolaryngology of Combined Military Hospital, Dhaka with clinically determined T1 and T2 disease, as defined by the American Joint Committee on Cancer (AJCC), who underwent primary surgical resection of the tumor with or without neck dissection were included in this study. Cancers of the tongue base and recurrent oral cancer of the tongue were precluded from the study. The objective of the study is to ascertain gender, primary tumor stage, and pathological characteristics, including the presence of metastases in neck dissection specimens, if performed. For initial pathological analysis, all tissues were formalin-fixed and submitted for histology following standard overnight machine processing. Following treatment, tissues were encased in paraffin wax. The cassettes were subsequently sliced into 5-micron sections, mounted on glass slides, and stained with hematoxylin and eosin. A designated Head and Neck pathologist at the CMH, Dhaka reviewed cases and reported the presence of lymph node metastases. Patients with T1N0 SCC of the oral tongue who had a partial glossectomy with neck dissection were in the first group. Patients with T1 and T2 N0 SCC of the oral tongue who had a partial glossectomy without neck dissection were in the second group. The Chi-square and Fisher's exact tests were used to check the relationship between the variables and the presence of regional repetition.

Analysis was performed to determine prognostic factors of statistical significance. Differences were considered significant for $P < 0.05$ and all P values were two tailed.

Results:

Majority age group in both group 32(64%) were in neck dissection and 30(60%) were in no neck dissection, male were predominate

31(62%) male in neck dissection and 29(58%) in no neck dissection. Common stage was T1 33(66%) in neck dissection and 38(76%) in no neck dissection. These were not statistically significant (p<0.05). Among the 50 patients who was underwent neck dissection, 4 patients had subsequent isolated recurrent disease, 2 patients had isolated local recurrent disease in the neck, and 1 patients regional recurrence presented with the neck dissection, with a 2% overall loco-regional recurrence rate in this group. Among all the 50 patients who had not underwent neck dissection at the time of surgical resection of the primary tumor, 10 patients had isolated recurrent disease at the primary site, 3 patients had isolated regional recurrent disease in the neck, and 1 patient presented with recurrence at both the loco and regional no neck dissection, with a 28% overall loco-regional recurrence rate in this group. The patients of T1 stage had a 3 year survival rate of 33 (100%) in neck dissection and 35 (92.1%) in no neck dissection. 13 patients were in T2 stage were in neck dissection geroup (76.5%) and 10 were in no neck dissection (83.3%). Regarding recurrence of stage T1, 3(75%) were in neck dissection and 6(42.9%) in no neck dissection and T2 1(25%) in neck dissection and 8(57.1%) in no neck dissection

Table I: *Baseline characteristics of the patients*

	Neck dissection (n=50)		No neck dissection (n=50)		P
	n	%	n	%	value
Age (years)					
<40	18	36.0	20	40.0	0.680^{ns}
≥40	32	64.0	30	60.0	
Gender					
Male	31	62.0	29	58.0	0.683^{ns}
Female	19	38.0	21	42.0	
T stage					
T1	33	66.0	38	76.0	0.270^{ns}
T2	17	34.0	12	24.0	

ns= not significant, p value reached from chi square test

Table II: *Recurrence according to site*

	Neck dissection (n=50)		No neck dissection (n=50)		P
	n	%	n	%	value
Local recurrence	2	4.0	10	20.0	
Regional recurrence	1	2.0	3	6.0	
Both (local and regional recurrence)	1	2.0	1	2.0	
Overall recurrence					
Yes	4	08.0	14	28.0	0.046^{s}
No	46	92.0	36	72.0	

s= significant, p value reached from chi square test

Table III: *Survival rate within 3 years*

T stage	Neck dissection		No neck dissection	
	Number of patients	3 years overall survival	Number of patients	3 years overall survival
T1	33	33 (100%)	38	35 (92.1%)
T2	17	13 (76.5%)	12	10 (83.3%)

Table IV: *Recurrence according to T staging*

T stage	Neck dissection (n=4)		No neck dissection (n=14)		P value
	n	%	n	%	
T1	3	75.0	6	42.9	0.690^{ns}
T2	1	25.0	8	57.1	

ns= not significant, p value reached from chi square test

Discussion:

In this study, the majority of people in both groups were between the ages of 32 and 30. Most people in both groups were male, with 31 (62%) men in the neck dissection group and 29 (58%) men in the no neck dissection group. T1 was the most common stage, with 33 (66%) having a neck dissection and 38 (76%) not having one. That none of them were statistically important (p0.05). Mahieu et al.[10] found that the average age of the SLNB group was 62.03±11.97 years and the average age of the END group was 61.98±12.77 years. Most of the patients in the SLNB group (51.8%) and 197 of the patients in the END group (54.0%) were men. The difference between the two groups was not statistically important (p>0.05). The END cohort had a higher rate of cT2-staged tumors (p < 0.001) and a higher rate of tumors staged pT2 or higher (52.8 vs. 24.6%; p < 0.001). Sung et al.[11] found that there were a total of 84 patients split evenly between male and female participants in the partial glossectomy only group (PG group). Of these, 61 had initial tumors classified as T1, whereas 23 were classified as T2. T1 tumors were found in 9 of the 14 patients in the partial glossectomy with elective neck dissection (END) group, while T2 tumors were found in 5 of the patients. According to Peng et al.[12], 64 were men, and 59 were women. Patients' ages at tumor removal were variable (27-92) with a mean of 56 years.

This study consists of 50 patients who had neck dissection. Out of those 50 cases, 4 had isolated recurrences, 2 had isolated local recurrences in the neck, and 1 had a regional recurrence at the time of the neck dissection, with 2% loco-regional recurrences. Of the 50 patients who had neck dissection when the primary tumor was removed, 10 had isolated recurrence at the primary site, 3 had isolated regional recurrence in the neck, and 1 had recurrence at both the loco and regional sites. This gives this group an overall loco-regional recurrence rate of 28%. Sung et al.[11] 'Only the original site (in one case) or the neck (in three cases) came back in 4 of the 11 patients who had locoregional recurrence. All cases had surgical salvage. Two of the patients had distant metastasis, and one of

them had already been identified with a local recurrence. In a study by Peng et al.[12] the overall rate of loco-regional recurrence was 20% among the 88 patients who underwent ipsilateral primary neck dissection. Of these patients, 8 developed isolated recurrent disease at the primary site, 7 developed isolated recurrent disease in the neck, and 3 presented with recurrence at both the primary and the neck. There was a 31% overall loco-regional recurrence rate among the 35 patients who did not undergo neck dissection at the time of surgical resection of the primary tumor; 7 patients had isolated recurrence at the primary site, 2 patients presented with recurrence at both the primary and the neck.

The present study found that 33 (100%) of T1-stage patients who had neck dissection lived for 3 years, while 35 (92.1% of them) did not have neck dissection. T2 stage 13 with neck dissection (76.5%) and stage 10 without neck dissection (83.3%). The 5-year OS rate for all patients was 90.8%, and the DFS rate was 67.1%, according to Sung et al.[11] the 5-year DFS rates for T1 were 71.1% and for T2 they were 54.3%. For T1 patients, the 5-year DFS rate was 68.8% for the PG group and 77.8% for the END group. The 5-year DFS rate for T2 cases was 51% and 60%, respectively. Liu et al.[13] showed that there was no statistical difference between the END and PG groups in terms of DFS or OS. Kligerman et al.[14] found that the 3-year mortality rate went up from 49% to 72% after a voluntary neck dissection. Keski-Santti et al.[15] also came to the conclusion that voluntary neck dissection had no big effect on overall survival.

Regarding return with T1 staging, 3 (75%) were treated with neck dissection and 6 (42.9%) were not. With T2 staging, 1 (25%) was treated with neck dissection and 8 (57.1%) were not. According to Sung et al.[11] 17.3% of people had hidden metastasis. There were 17.1% of T1 occult metastases and 17.9% of T2 occult metastases.

Conclusion:

Study reports have suggested that nodal recurrence in early-stage oral tongue SCC occurs more commonly. Overall recurrence rate is higher in no neck dissection group in comparison to neck dissection group. Three years survival rate is also higher in early stage and neck dissection group.

References:

1. Hakeem AH, Pradhan SA, Kannan R, Tubachi J. Clinical outcome of surgical treatment of T1-2 N0 squamous cell carcinoma of oral tongue with observation for the neck: Analysis of 176 cases. Ann Maxillofac Surg 2016; 6: 235-40.
2. D'Cruz A, Vaish R, Kapre N, et al. Elective versus therapeutic neck dissection in node-negative oral cancer. N Engl J Med. 2015; 373: 521-529.
3. Ebrahimi A, Ashford BG, Clark JR. Improved survival with elective neck dissection in thick early-stage oral squamous cell carcinoma. Head Neck. 2012; 34: 709-716.
4. Loganathan P, Sayan A, Hsu DWK, Paraneetharan S, Ilankovan V. Squamous cell carcinoma of the anterior tongue: is tumour thickness an indicator for cervical metastasis? Int J Oral Maxillofac Surg. 2017; 46: 407-412.
5. Yang X, Tian X, Wu K, et al. Prognostic impact of perineural invasion in early stage oral tongue squamous cell carcinoma: results from a prospective randomized trial. Surg Oncol 2018; 27:123-128.
6. Moreno-García C. Elective neck dissection in early oral squamous cell

carcinoma: necessary? Plast Aesthet Res 2016; 3:167-74.

7. Shah JP, Gil Z. Current concepts in management of oral cancer — Surgery. Oral oncology. 2009; 45(4):394–401.

8. Lim YC, Lee JS, Koo BS, Kim SH, Kim YH, Choi EC. Treatment of contralateral N0 neck in early squamous cell carcinoma of the oral tongue: elective neck dissection versus observation. Laryngoscope. Mar; 2006 116(3):461–5.

9. Tsang RK, Chung JC, To VS, Chan JY, Ho WK, Wei WI. Efficacy of salvage neck dissection for isolated nodal recurrences in early carcinoma of oral tongue with watchful waiting management of initial N0 neck. Head Neck. Oct; 2011 33(10):1482–5.

10. Mahieu R, Den Toom IJ, Boeve K, Lobeek D, Bloemena E, Donswijk ML, De Keizer B, Klop WM, Leemans CR, Willems SM, Takes RP. Contralateral Regional Recurrence in Lateralized or Paramedian Early-Stage Oral Cancer Undergoing Sentinel Lymph Node Biopsy—Comparison to a Historic Elective Neck Dissection Cohort. Frontiers in oncology. 2021;11:644306

11. Sung KW, Kim SM, Myoung H, Kim MJ, Lee JH. The effectiveness of elective neck dissection on early (stage I, II) squamous cell carcinoma of the oral tongue. Journal of the Korean Association of Oral and Maxillofacial Surgeons. 2017; 43(3):147-151.

12. Peng KA, Chu AC, Lai C, Grogan T, Elashoff D, Abemayor E, John MA. Is there a role for neck dissection in T1 oral tongue squamous cell carcinoma? The UCLA experience. American journal of otolaryngology. 2014;35 (6):741-6.

13. Liu TR, Chen FJ, Yang AK, Zhang GP, Song M, Liu WW, Chen WC, Chen YF, Ouyang D, Li QL. Elective neck dissection in clinical stage I squamous cell carcinoma of the tongue: Does it improve regional control or survival time?. Oral oncology. 2011;47(2):136-41.

14. Keski-Santti H, Atula T, Törnwall J, Koivunen P, Mäkitie A. Elective neck treatment versus observation in patients with T1/T2 N0 squamous cell carcinoma of oral tongue. Oral Oncol 2006;42:96-101.

15. Kligerman J, Lima RA, Soares JR, Prado L, Dias FL, Freitas EQ, et al. Supraomohyoid neck dissection in the treatment of T1/T2 squamous cell carcinoma of oral cavity. Am J Surg 1994; 168: 391-4.