



Role of elective neck dissection in the management of early oral tongue carcinoma

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Abstract

Objective: To evaluate the efficacy of elective neck dissection as a therapeutic and as well as diagnostic procedure for early oral tongue cancer patients with No neck.

Methods: This observational/retrospective study was carried out during the period of July 2012 to December 2014, among the patients, admitted in the Department of ENT Oncology of National Institute of Cancer Research & Hospital, Mohakhali, Dhaka. For this 30 patients of early oral tongue cancer (T1 & T2) of all age & sex, which were with clinically No neck, were included in this study. Detailed history taking, thorough clinical examination of oral cavity, neck and preoperative punch biopsy from tongue lesion was done in every case. Wide local excision or hemiglossectomy with proper margin clearance in all cases and elective neck dissection was done in selective cases. Histopathological examination of excised primary tongue lesion & neck nodes was also done in each & every cases.

Results: There were 30 patients in this study, including 14(46.66%) with T1 and 16(53.33%) with T2 oral tongue carcinoma. The first site of tumour recurrence was regional that is 6 (20%), both regional & local were 1(3.33%) and local recurrence was 2(6.66%). Among the 30 No neck patients, who had done neck dissection (18 patients), regional recurrence was seen in 2 cases (11.11%) and patients who were under observation(12 patients) recurrence was seen in 5 cases that is 41.66%. The result of our study has been tested by two sample Z test and has found that recurrence is significantly high in patients who were in observation. At the same time occult node positive disease was found interestingly in 33.33% cases. So elective neck dissection has also the advantage of more accurate pathological diagnosis or staging of neck.

Conclusion: Elective neck dissection significantly reduces the regional recurrence in case of management of early oral tongue cancer. At the same time it is a very important diagnostic tool.

Keywords: Occult node positive disease, oral tongue cancer.

Introduction

Oral & Oropharyngeal carcinoma is the sixth most common cancer in the world. Of which ant.2/3 rd of tongue is most common site-accounting for about 40% of the cases.¹ It is well known that malignant lesions in oral tongue have a strong propensity to develop neck metastasis which are observed even in early stage of disease. Oral tongue carcinoma is also documented for its subclinical nodal metastasis in early stage.²

There is high incidence of occult metastasis even from early carcinoma (T1 & T2) of oral tongue. It can be seen in over 30% of patients with early carcinoma.³ The presence of occult lymph node metastasis reduces overall survival by 30% to 50%.⁴

The treatment of neck in early stage node negative oral tongue is controversial both elective neck dissection and “watchful waiting” have their proponents.⁵

It is widely accepted that management of neck relapse after a period of observation is more difficult due to increased incidence of high stage neck disease along with extracapsular spread. So some form of treatment to the neck should be given in clinically N0 cases of early oral tongue cancer at the time of primary tumour management.⁶

Elective neck dissection has been advocated a routine management protocol of N0 neck of early oral tongue carcinoma by many surgeons.⁷

Many retrospective analysis concluded that elective neck dissection is very effective procedure in the management of early oral tongue carcinoma (T1 & T2). At the same time elective neck dissection has the advantage of more accurate pathological staging of the neck compared to all available radiological investigations. The pathological information can guide the subsequent use of postoperative radiotherapy for a pathologically node positive neck.²

So elective neck dissection may be both diagnostic and therapeutic. It helps in defining the

status of the neck, removal of undetectable metastasis and also the need for adjuvant therapy.⁸

Methodology

The objective of the study was to evaluate the efficacy of elective neck dissection as a diagnostic and therapeutic procedure for No neck of early carcinoma of oral tongue. This retrospective study was carried on 30 patients of all age and sex of early oral tongue cancer (T1 & T2) with clinically No neck. This was done on only admitted patient in the Department of ENT Oncology of NICRH between July 2012 and December 2014.

This study excluded–

- 1) Tumour more than 4cm in greatest diameter.
- 2) Tumour crossing midline or reaching midline.
- 3) Patient who were given neo-adjuvant chemotherapy.
- 4) Patients with clinically palpable cervical lymph nodes.
- 5) Carcinoma tongue as a second primary in oral cavity.

Meticulous history taking, thorough clinical examination of oral cavity, neck & preoperative punch biopsy from the tongue lesion was the mainstay of the selection of the cases.

Wide local excision or hemiglossectomy with proper margin clearance was performed for the primary tumour. Post operative histopathological examination of primary tongue lesion and neck nodes was done in all cases.

Imaging of neck was done in selective cases.

In all cases follow up was done for a variable period of 3 months to 30 months.

Follow up was done by meticulous clinical examination, history taking & CT scan was done in necessary cases.

Postoperative radiotherapy was given in all 30 cases.

Results

The results of the study shown in following tables and figures:

Table 1: Age & Sex distribution

Age group	No. of patients	Male	Female	Percentage
<40	3	3	0	10%
41-50	7	3	4	23.33%
51-60	16	10	6	53.3%
61-70	4	3	1	10%

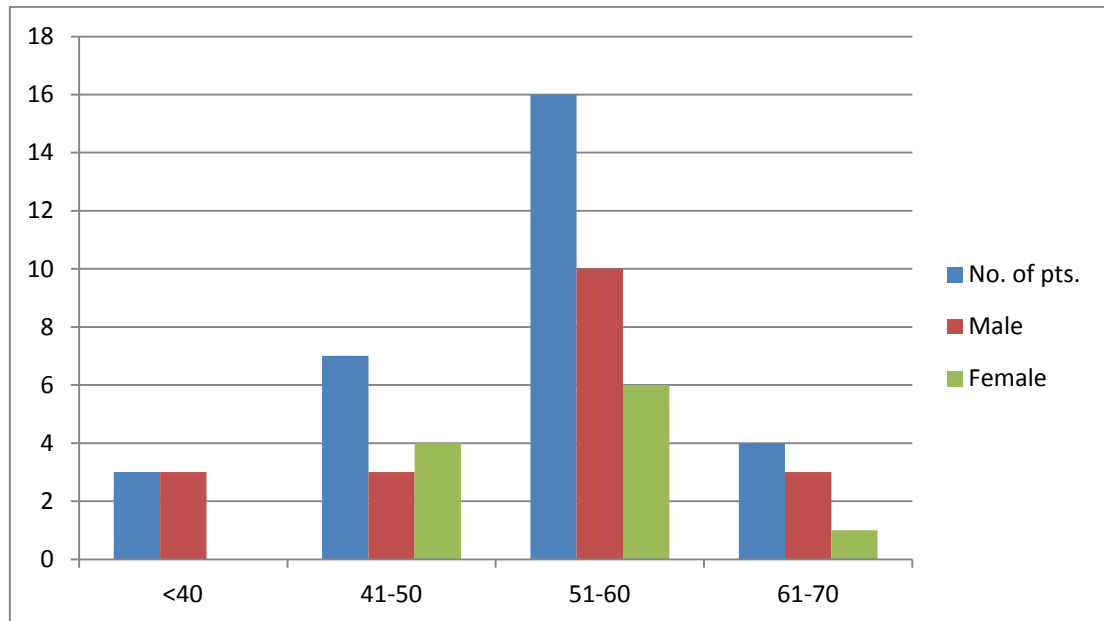


Figure 1: Age & Sex distribution

Table 2: Residence of the patients

Residence of the Patients	No. of the patients	Percentage
Rural area	21	70%
Urban area	9	30%

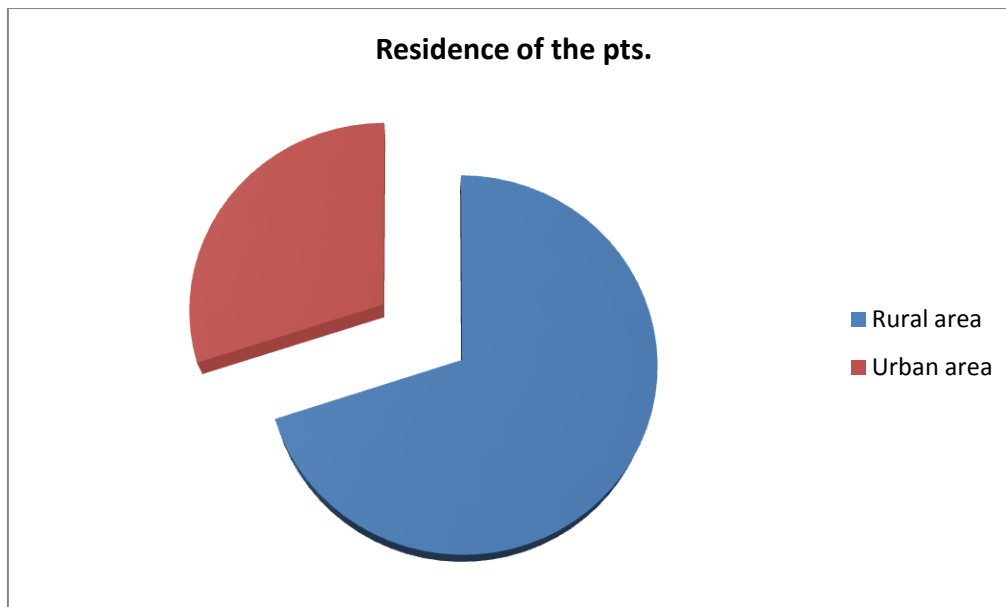


Figure 2: Residence of the patients

Table 3: Habitat of the patients

Name of the habitat	No. of the patients	Percentage
Smoking	15	50%
Chewing betel nut	16	53.33%
Other form of tobacco	7	23.33%
Alcohol	2	6.66%

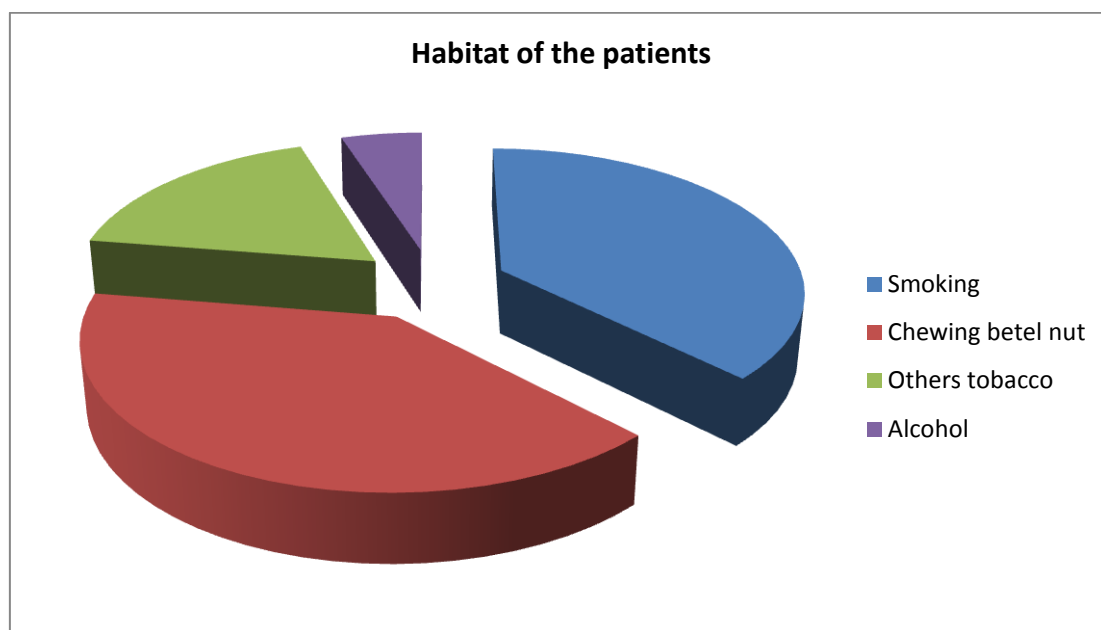


Figure 3: Habitat of the patients

Table 4: Presentation of symptoms

Clinical PresentatiOn	Frequency	Percentage
Soreness/Irritation of tongue	6	20%
Painless ulceration	17	56.66%
Foul breath	14	46.66%
Dysphagia	8	26.66%
Painful ulceration	3	10.00%
Spilling of blood	6	20.00%

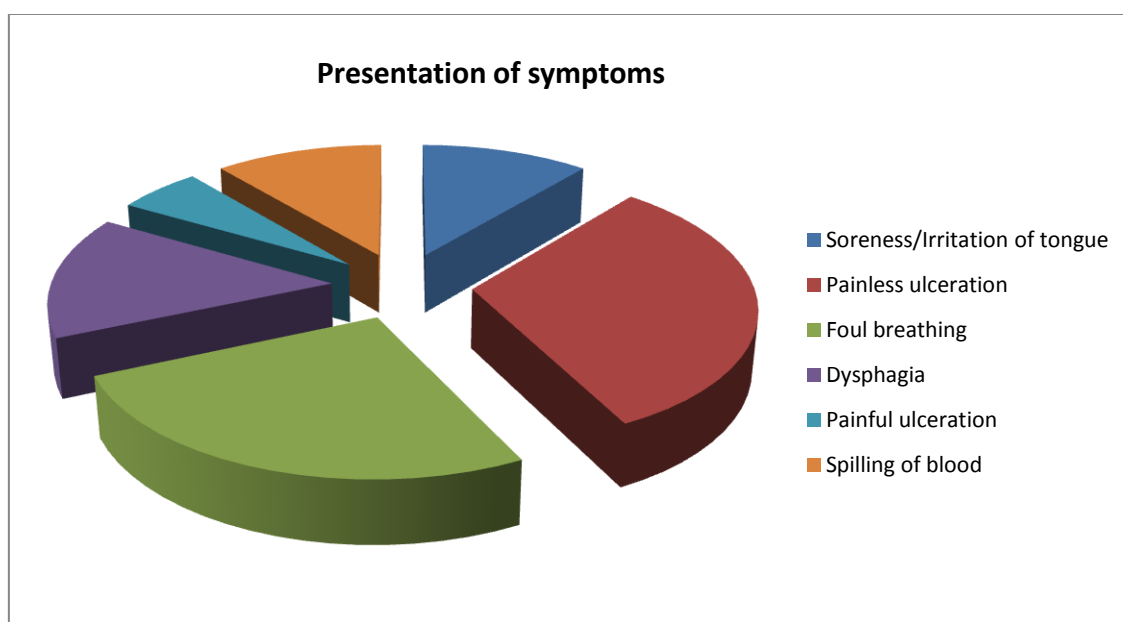


Figure 4: Presentation of Symptoms

Table 5: Duration of the symptoms

Duration of symptoms	No. of the patients	Percentage
1-2 months	4	13.33%
2-3 months	5	16.66%
3-4 months	10	33.33%
4-5 months	7	23.33%
5-6 months	4	23.33%

Table 6: Number patients according to tumour size

Tumour size	No. of the patients	Percentage
T1	14	46.66%
T2	16	53.33%

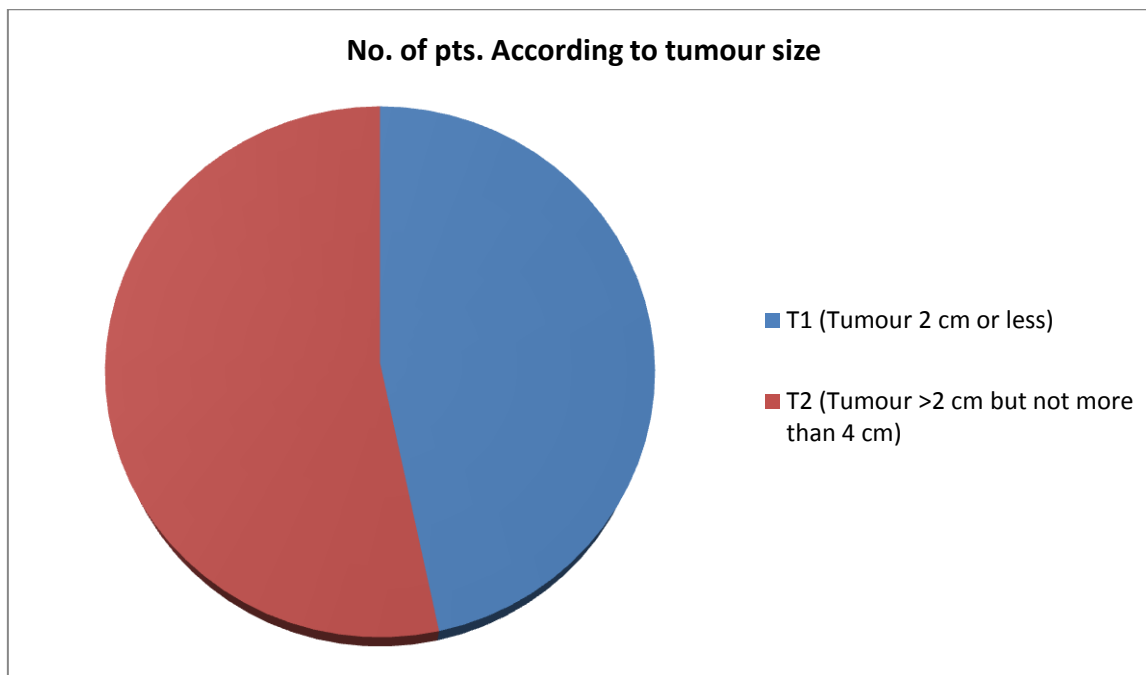


Table 6: Number patients according to tumour size

Table 7: Types of management along with hemiglossectomy

Types of management	No. of the patients	Percentage
Elective neck dissection	18	60%
Observation	12	40%

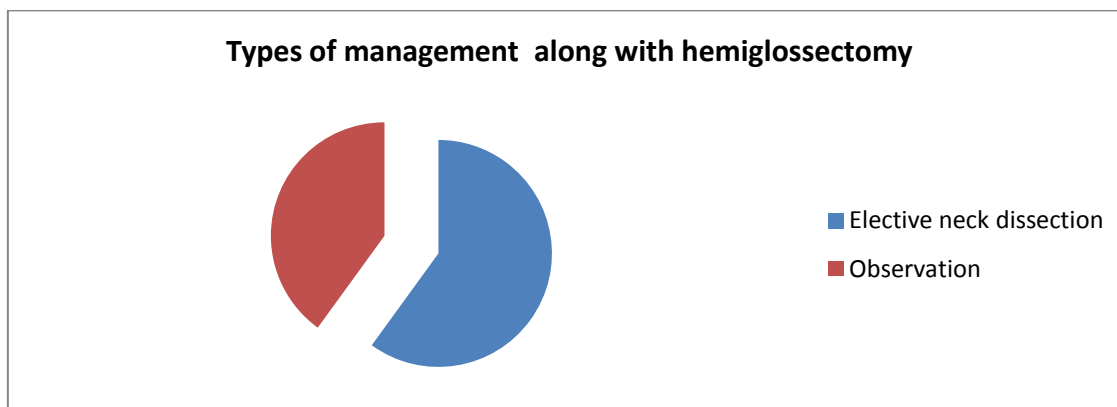


Figure 7: Types of management along with hemiglossectomy

Table 8: Frequency of occult node positive disease

No. of pts. Underwent END	Pathologically neck node positive disease	Percentage
18	6	33.33%

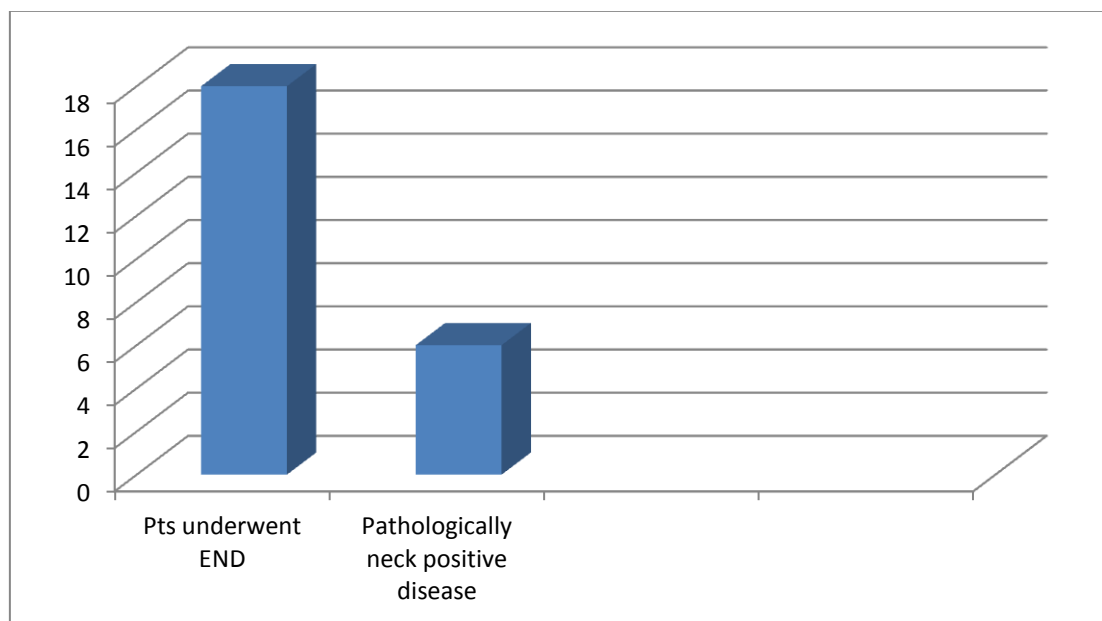


Figure 8: Frequency of occult node positive disease

Table 9: Period of follow up of the patients

Follow up period	No. of the patients	Percentage
3 month-6 months	4	13.33%
6 months-12 months	4	13.33%
12 months-18 months	10	33.33%
18 months-24 months	7	23.33%
24 months-30 months	3	10.00%

Table 10: Types of recurrence

Types of recurrence	No. of patients	Percentage
Regional recurrence	6	20.00%
Both regional & local recurrence	1	3.33%
Only local recurrence	2	6.66%

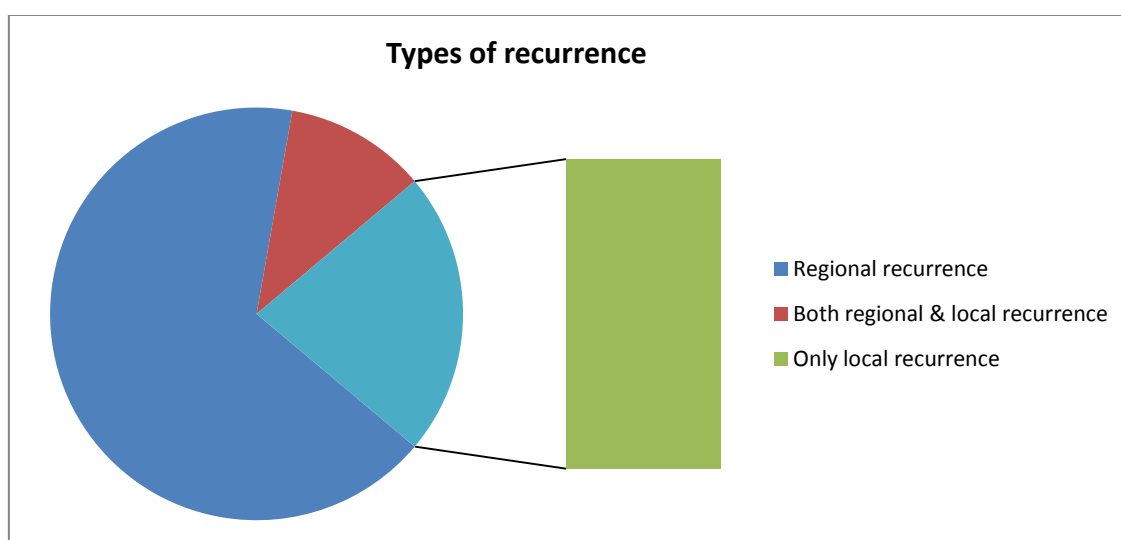


Table 11: Regional recurrence in both groups of patients

Group of patients	No. of pts. In this group	No. of recurrence	Percentage
Pts. underwent END	18	2	11.11%
Pts. Under observation	12	5	41.66%

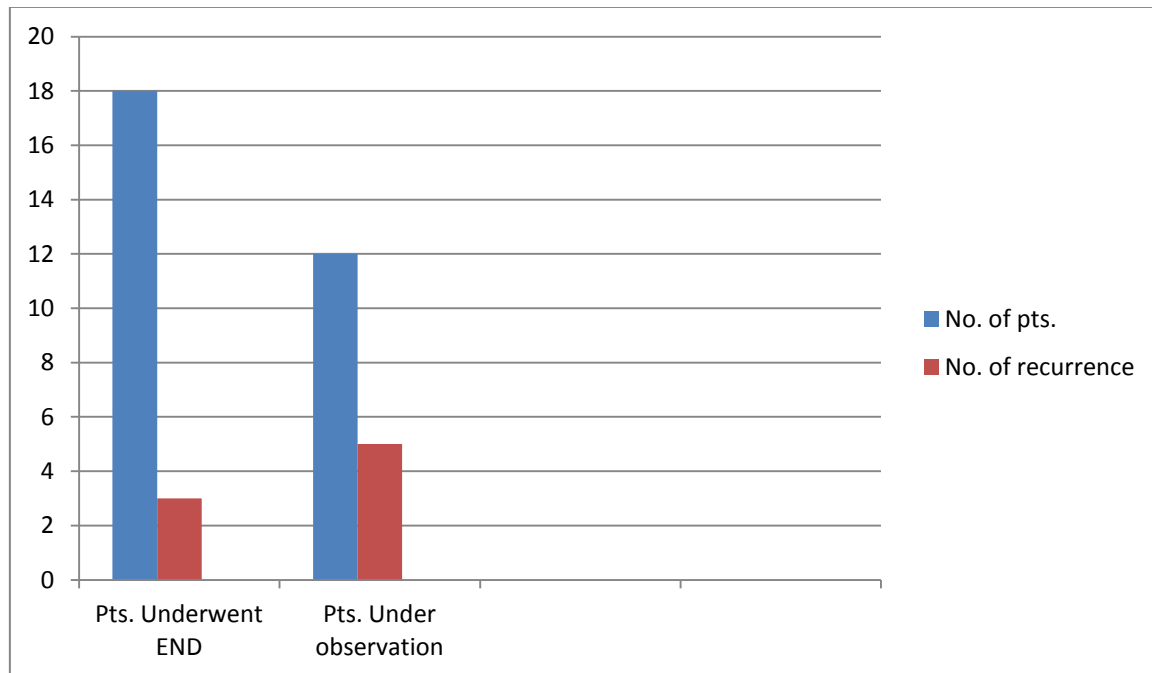


Figure 11: Regional recurrence in both groups of patients

Discussion

Oral cancer is one of the common cancers in Bangladesh, India, Pakistan & Srilanka. Of which ant 2/3rd of the tongue is the most common site of the oral cancer accounting for about 40% of the cases.⁹

It is more common in male who usually present in the 6th & 7th decade although the incidence in young people seems to be increasing.¹⁰ United State (SEER) reported that the majority of oral cancer patients were over 45 years of age with a median age of diagnosis of 62 years.¹¹ In our series highest incidence of disease was seen in 51-60 years with a male predominance.

In our study a total number of 30 cases of early oral tongue cancer were studied in the period of July 2012 to December 2014, among the patients, admitted in the Department of ENT Oncology of National Institute of Cancer Research & Hospital, Mohakhali, Dhaka. In the study the age range was from 40 to 70 years, of which majority of patients belongs to age group 51 to 60 years. In a study mean age of presentation was 41.5 yr’s with range

being 22 to 84 yr’s. That study included 50 males and 10 females out of 60 patients.¹² Whereas We found 19 males and 11 females out of 30 patients of which majority was from the rural area (21 out of 30).

Among the 30 patients of early oral tongue cancer of our study 15 were smoker, 16 were habitat of chewing betel nut, 7 were habitat of other form of tobacco and only 2 were alcohol abuser. Different study showed out of 117 patients 72 had a history of different type of tobacco use and 36 patients had a history of alcohol consumption.¹²

In our study usual presentation of symptoms were painless ulceration (56.66%), foul breath (46.66%), dysphagia (26.66%). In one study the commonest symptoms was also painless ulceration of tongue.¹³

In our series maximum duration of symptoms was 3-4 months. In different study mean duration of symptoms was ranged from 1 month 6 months with a mean of 6.5 months.¹⁴

Of our 30 patients of early oral tongue cancer 14 were T1 tumour size (45%) and 16 were of T2

tumour size. Another study showed out of 36 patients 16 were of T1 tumour size and 20 were of T2 tumour size.¹⁵

In our study during the management, out of 30 patients along with hemiglossectomy elective neck dissection was done in 18 cases and 12 patients were kept in observation. After elective neck dissection histopathological examination has done in all cases. Of which 6 cases were pathologically positive that is 33.33%. One study of Pakistan showed rate of occult lymph node metastasis 32%.¹⁴ Another study of India showed occult metastasis in 23.12% of cases.¹⁶

After the surgery our average follow up period of the patients was 16.5 months. Among that 30 patients regional recurrence was seen in 7 patients of which 2 (11.11%) were in neck dissection group and 5 (41.66%) were in patients who were under observation. One Japanese study showed 3 of 7 patients (43%) who underwent elective neck dissection had a lymph node metastasis. On the other hand 4 of the 6 patients (64%) who did not undergo elective neck dissection had a recurrence in the neck.¹⁵

Among the study group total recurrence was seen in 9 patients. Out of that patients we found regional recurrence in 6 cases (20.33%), local recurrence in 2 cases (6.66%) and both regional & local recurrence in 1 case (3.33%). Prashant Sharma et al. of India showed out of 60 patients recurrence was seen in 11 patients where 1 patient had both regional & local recurrence, 2 patients had regional only recurrence and rest 8 patients had local recurrence.¹²

Where in a study of Hongkong 35 patients were in observation group of which regional recurrence was seen in 11 patients (31%). At the same time out of 36 patients who were underwent elective neck dissection nodal recurrence was in only 2 patients that is in 6% cases (Chi-square test $P=0.006$).¹⁷

In the management of early oral tongue cancer the aim of curative surgery is to excise the carcinoma with an adequate margin of normal tissue. We all know that metastasis to cervical neck nodes occur

more frequently from tongue carcinoma than any other site of oral cavity.⁵

Nodal status at the presentation is the most important prognostic factor. If the nodes are affected than the chance of cure falls by the half. Neck nodal involvement can decrease the survival by 50%.¹⁸ One important term in this topics is occult metastasis or micrometastasis- which is defined as histological involvement of lymph nodes with no clinical or radiological evidence of metastasis.⁵

In early lesion of tongue that is T1 & T2- usually surgery or radiotherapy is offered to primary site. Interestingly if elective neck dissection – supraomohyoid or extended supraomohyoid neck dissection has done – a high incidence of occult metastasis is usually seen. It can be as high as 42%.¹⁹ In our study it is 33.33%. So elective neck dissection has also the advantage of more accurate pathological diagnosis or staging of neck compared to all available radiological investigations.¹²

Many study showed that in management of early oral tongue carcinoma regional recurrence is the most common cause of failure after surgical treatment and elective neck dissection significantly reduces mortality & morbidity due to regional recurrence. Several reports have described that the survival rate of “watched” patients was worse than that of patients having elective neck dissection.²⁰

In our study during follow up period regional recurrence has seen in 5 patients out of 12 that is in 41.66% who were in observation group and only in 2 out of 18 patients that is 11.11% of which elective neck dissection was committed. One study of Japan Kiyoto Shiga et al. found neck node metastasis 3 of 7 patients (43%) who underwent elective neck dissection on the other hand 4 of the 6 patients (67%) who did not undergo elective neck dissection at the first surgery.¹⁵

The result of our study has been tested by Z test, where $Z = 1.96$, $P < 0.05$ and has been found that

recurrence is significantly high in patient who were in observation.

So we can say that elective neck dissection is needed for the patients of early oral tongue cancer to reduce the rate of recurrence and improve the prognosis of the patients. At the same time besides the therapeutic role, we can see that elective neck dissection has important diagnostic role which cannot be replaced easily by the available pre operative radiological screenings.

So in the management of early oral tongue cancer elective neck dissection must have consider for it both diagnostic and therapeutic role. It helps defining the status of the neck, removal of undetectable neck disease and also determines the need of appropriate adjuvant therapy.

Limitation of the study

- 1) Limited time duration.
- 2) Need long term follow up.

Conclusion

Along with wide local excision with proper margin clearance elective neck dissection significantly reduces the mortality and morbidity and also increase the overall survival.

Elective neck dissection is a very important therapeutic as well as diagnostic procedure in the management of early oral tongue carcinoma.

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