

ORIGINAL RESEARCH

A Study of Pattern of Nodal Metastasis and Different Modalities of Treatment Adopted for Different Clinical Stages in Malignancies of the Oral Cavity**¹Dr. Sanal Mohan S., ²Dr. Anwar Rasheed**^{1,2}Associate Professor, Department of ENT, Travancore Medical College (Medicity), Kollam, Kerala, India.**Corresponding Author**

Dr. Sanal Mohan S.

Associate Professor, Department of ENT, Travancore Medical College (Medicity), Kollam, Kerala, India

Received: 23 January, 2023

Accepted: 22 March, 2023

Abstract**Background:** This study was conducted to determine the pattern of nodal metastasis and evaluate the different modalities of treatment adopted for different clinical stages of malignancies of the oral cavity.**Methods:** This study was conducted among 325 patients who presented with malignancies of the oral cavity to the Department of Otolaryngology – Head and Neck Surgery, Travancore Medical College, Kollam, over a period of 5 years from January 2017 to December 2021. Treatment included surgery, RT, CT or a combination of two or more of them. All patients have been followed to date.**Results:** Level I was the most common level of lymph nodes involved. Biopsy from the lesion and FNAC from the lymph nodes were sufficient in most of the cases to reach a proper diagnosis. Surgery with or without postoperative radiotherapy was the preferred modality of treatment in early cases, while primary radiotherapy alone was employed in the majority of cases with late-stage disease. Surgical margins were positive in 17.5% of the cases. Recurrence rates were higher when radiotherapy alone was employed. Treatment failures occurred more commonly at the primary site than at the nodal sites. Immunostaining of tissue sections with anti-5-mc antibodies showed increased staining with the progression of the stage of carcinogenesis.**Conclusion:** To optimize survival, the therapeutic approach requires careful planning on the part of an integrated team of head and neck specialists, including the surgeon and the radiotherapist.**Keywords:** Malignancies, Buccal Mucosa.**Introduction**

The principal risk factors for oral malignancies are cigarette smoking and consumption of alcohol, particularly dark spirits. In combination, alcohol and tobacco show a multiplicative relative risk. Early detection of oral cancer is important. Small lesions can be treated successfully with radiotherapy, with a 5-year survival rate of around 80%. Advanced tumours require radical combination therapy and have 5-year survival rates of 30% or lower.

Objectives of the study

1. To study the pattern of nodal metastasis.
2. To study the different modalities of treatment adopted for different clinical stages.

Methods

This study was conducted among 325 patients who presented with malignancies of the oral cavity to the Department of Otolaryngology – Head and Neck Surgery, Travancore Medical College, Kollam, over a period of 5 years from January 2017 to December 2021. Treatment included surgery, RT, CT or a combination of two or more of them. All patients have been followed to date.

The clinical staging, including the tumor, nodal and metastatic patterns at the time of presentation was noted. The relevant investigations, which included a CBP (Complete Blood Profile), chest X-ray, ECG, ultrasound of the neck and abdomen and CT scan were routinely done on all patients. An MRI or a radio-isotope bone scan was done in relevant cases. An FNAC was done on all palpable lymph nodes in the head and neck. A panendoscopy was done on selected patients with oral cavity malignancies.

The treatment modalities for the patients diagnosed with malignancies of the oral cavity included surgery, radiotherapy, chemotherapy or a combination of two or more of them. The intra-operative findings, blood loss, and post-operative complications were noted. The histopathology reports were noted for positive margins, lymph nodes and involvement of other structures and correlated with the clinical findings. The duration between the onset of symptoms and the time of treatment was noted as well as the time between the first and the subsequent treatment modalities.

The patients were followed up once a month in the first year and once in every 6 months thereafter.

For data on patients who had already been treated in the past for malignancies in the above-mentioned sites, records of all such patients were obtained from the MRD (Medical Records Department) at periodic intervals.

Results

Clinical features and tumour staging

Poor oral hygiene was seen in 223 cases (68.62%). 68 patients (20.92%) had noticeable pallor. Pre-malignant lesions along with the malignant lesions were seen only in 21 cases (6.46%). This was present in 3 cases of RMT cancer (15.78%) and in 8 cases of buccal mucosa cancer (13.56%). 123 cases (37.85%) of oral cavity malignancies presented with a T4 tumour, followed by T2 tumour (100 cases, 30.77%). 111 cases of oral cancer (34.15%) presented without clinically palpable lymph nodes, followed by N1 (82 cases, 25.23%). 175 cases (53.85%) were stage IV at presentation and 78 cases (24%) were in stage III. Level Ib was the most commonly involved level of nodal involvement in all the sites except the tongue, where level II was most common.

Lips

- a) Tumour staging: 5 cases (38.46%) presented with T3 tumours followed by T2 (4 cases, 30.77%). There were 3 cases (23.08%) of T1 lesions and 1 case (7.69%) of T4.
- b) Nodal pattern: 5 cases each were of N0 and N1 (38.46 % each). N2c was present in 2 cases. Level Ib was the most common level involved (5 cases, 38.46%)
- c) TNM staging: The maximum number of cases were in stage III (6 cases, 46.15%) followed by stage IV (3 cases, 23.08%)

Buccal Mucosa

- a) Tumour staging: 20 cases (33.9%) of buccal mucosa cases presented with T4 tumours, followed by T2 (19 cases, 32.20%). There were 12 cases (20.34%) of T3 lesions and 8 cases (13.56%) of T1.

- b) Nodal pattern: 28 cases (47.46%) did not have clinically palpable nodes. 14 cases (23.73%) were N1 and 11 cases (18.64%) were N2b. Level Ib was most commonly involved (38.98%) followed by Level II (25.42%).
- c) TNM staging: The maximum number of cases were in stage IV (28 cases, 47.46%) followed by stage III (14 cases, 23.73%).

Alveolus

- a) Tumour staging: 11 cases (50%) presented with T4 tumours, followed by 5 cases each of T2 and T3 (22.73% each).
- b) Nodal pattern: 10 cases (45.45%) were N1 and 8 cases (36.36%) were N0. In 59% (13 cases) level Ib node was palpable, followed by Level II in 27.27%.
- c) TNM staging: The maximum number of cases were in stage IV (12 cases, 54.55%) followed by stage III (5 cases, 22.73%).

Tongue

- a) Tumour staging: 63 cases (40.38%) of tongue tumours presented with T4 tumours, followed by T2 (46 cases, 29.49%). There were 26 cases (16.67%) of T1 lesions and 21 cases (13.46%) of T3.
- b) Nodal pattern: 49 cases (31.41%) did not have clinically palpable nodes. 39 cases (25%) were N1 and 28 cases (17.95%) were N2b. Level II nodes were involved in 46.15% of the cases, while Level Ib was enlarged in 37.18%.
- c) TNM staging: The maximum number of cases were in stage IV (87 cases, 55.77%) followed by stage III (36 cases, 23.08%) and 19 cases (12.18%) in stage II.

Floor of Mouth

- a) Tumour staging: 18 cases (43.9%) presented with T2 tumours, followed by T4 (15 cases, 36.59%). There were 4 cases each of T1 and T3 (9.76% each).
- b) Nodal pattern: 13 cases presented with N2c (31.71%) followed by 11 cases of N2b (26.83%) and 9 cases of N0 (21.95%). In 60.98% of the cases, level Ib was involved. Level II was involved in 48.78% of the cases.
- c) TNM staging: The maximum number of cases were in stage IV (28 cases, 68.29%) followed by stage III (6 cases, 14.63%).

Hard Palate

- a) Tumour staging: 5 cases each presented with T2 and T3 lesions (33.33%). There were 3 cases (20%) of T4 lesions and 2 cases (13.33%) of T1 lesions.
- b) Nodal pattern: 7 cases (46.67%) did not have palpable nodes. 3 cases each were of N1 and N2b (20 % each). Level Ib was the most commonly involved nodes (6 cases, 40%) followed by Level II (5 cases, 33.33%).
- c) TNM staging: There were 5 cases each (33.33% each) of stages III and IV followed by 3 cases (20%) of stage II.

Retromolar Trigone

- a) Tumour staging: 10 cases (52.63%) presented with T4 tumours, followed by T3 (6 cases, 31.58%). There were 3 cases (15.79%) of T2.
- b) Nodal pattern: 6 cases (31.58%) each were of N1 and N2b. 5 cases (26.32%) were N0. Level Ib was involved in 47.37% of the cases, while level II was enlarged in 42.11% of the cases.
- d) TNM staging: The maximum number of cases were in stage IV (12 cases, 63.16%) followed by stage III (6 cases, 31.58%) and 1 case (5.26%) in stage II.

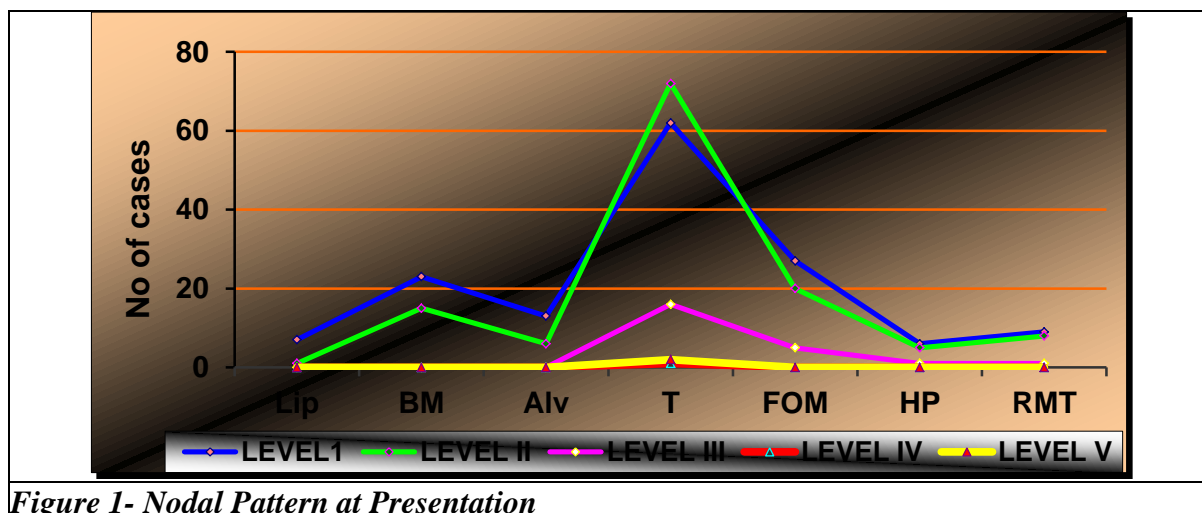


Figure 1- Nodal Pattern at Presentation

Treatment modalities vs. TNM staging

Lip: In stage I, 2 out of 3 cases (66.67%) underwent surgery alone, and one case (33.33%) underwent surgery with postoperative radiotherapy. In stage II, 2 out of three cases underwent surgery alone, and one case with rhabdomyosarcoma underwent surgery followed by chemotherapy. In stage III, radiotherapy was the preferred modality of treatment (2 cases, 40%). 50% of the cases in stage IV underwent radiotherapy alone.

Buccal Mucosa: The preferred modality of treatment in stage I was surgery alone (4 cases, 57.14%). 46.15% of the stage II cases underwent surgery alone, while radiotherapy alone was done in 38.46% of the cases. Radiotherapy was done in 54.55% of the cases that presented at stage III. In stage IV cases, radiotherapy was the commonest modality of treatment used (50%).

Alveolus: The preferred modality of treatment in stage I was surgery alone (1 case, 100%). 40% of the stage II cases underwent surgery alone while surgery followed by radiotherapy was done in another 40% of the cases. Surgery was done in all the cases that presented at stage III. In stage IV cases, surgery followed by radiotherapy was the commonest modality of treatment used (50%).

Tongue: The commonest modality of treatment in stage I was surgery alone (13 cases, 65%). 46.15% (12 cases) of the stage II cases underwent surgery followed by postoperative radiotherapy while radiotherapy alone was done in 23.08% of the cases. Surgery with postop radiotherapy was done in 43.48% of the cases that presented in stage III. In stage IV cases radiotherapy was the commonest modality of treatment used (38 cases, 43.68%). Surgery with postop radiotherapy was done in 20 cases (23%) in stage IV.

Floor of Mouth: All cases in stage I underwent surgery alone. Radiotherapy alone and surgery followed by radiotherapy were done in 2 cases each in stage II (28.57% each). Radiotherapy was done in 2 out of 3 cases (66.7%) in stage III. In stage IV cases, radiotherapy was the commonest modality of treatment used (14 cases, 51.85%). Surgery with postop radiotherapy was done in 6 cases (22%) in stage IV.

Hard Palate: All cases in stage I underwent surgery alone. Radiotherapy alone and surgery alone was done in 1 case each in stage II (33.33% each). Radiotherapy alone and surgery followed by radiotherapy was done in 2 out of 5 cases (40% each) in stage III. In stage IV cases, radiotherapy was the commonest modality of treatment used (3 cases, 60%).

Retromolar Trigone: In one case in Stage II (100%), surgery and radiotherapy were both performed. In 4 out of 7 cases (57.14%) in stage III, surgery and radiotherapy were both

performed. In stage IV cases, radiotherapy was the commonest modality of treatment used (4 cases, 36.36%).

Treatment modalities VS. T-staging

Lip: In T1, 2 out of 3 cases (66.67%) underwent surgery alone, and one case (33.33%) underwent surgery with postoperative radiotherapy. In T2, 2 out of 4 cases underwent surgery alone (50%). In T3, radiotherapy was the preferred modality of treatment (2 cases, 40%). 1 case in T4 (100%) underwent radiotherapy alone.

Buccal Mucosa: The preferred modality of treatment in T1 lesions was surgery alone (4 cases, 50%). 47.37% of the T2 cases underwent radiotherapy alone, while surgery alone was done in 31.58% of the cases. Radiotherapy was done in 58.33% of the cases that presented with T3 lesions. In T4 cases, radiotherapy was also the commonest modality of treatment used (45%).

Alveolus: The preferred modality of treatment in T1 was surgery alone (1 case, 100%). 40% of the T2 cases underwent surgery alone, while surgery followed by radiotherapy was done in another 40% of the cases. Surgery was done in 4 cases (80%) who presented in T3. In T4 cases, surgery followed by radiotherapy was the commonest modality of treatment used (6 cases, 54.55%).

Tongue: The commonest modality of treatment in T1 was surgery alone (16 cases, 61.54%). 43.48% (20 cases) of the T2 cases underwent surgery followed by postoperative radiotherapy while radiotherapy alone was done in 30.43% of the cases. Radiotherapy was done in 33.33% of the cases that presented in T3. In T4 cases, radiotherapy was the commonest modality of treatment used (27 cases, 42.86%). Surgery with postop radiotherapy was done in 16 cases (25.4%) in T4.

Floor of Mouth: All cases in T1 underwent surgery alone. Radiotherapy alone was done in 8 cases in T2 (44.44%). Radiotherapy alone was done in all cases in T3. In T4 cases, radiotherapy was the commonest modality of treatment used (6 cases, 40%). Surgery was done in 5 cases (33.33%) in T4.

Hard Palate: All cases in T1 underwent surgery alone. Surgery alone was done in 2 cases in T2 (40%). Radiotherapy alone was done in 3 out of 5 cases each (60% each) in T3. In T4 cases, radiotherapy was the commonest modality of treatment used (2 cases, 66.67%).

Retromolar Trigone: In 2 cases (66.67%) in T2, surgery and radiotherapy were both performed. Surgery followed by radiotherapy was done in 3 out of 6 cases each (50%) in T3. In T4 cases, radiotherapy alone and surgery followed by radiotherapy were done in 3 cases each (30%).

Treatment modalities for the neck in oral malignancies

Lip: Radiotherapy was the preferred modality for the treatment of the neck in 1 case (100%) of N0 and 2 cases each of N1 (66.67%) and N2 (50%). Supraomohyoid neck dissection was done in 1 case each of N1 (33.33%) and N2 (25%).

Buccal Mucosa: In cases with N0, SND was done in 5 cases (20.83%). 14 cases (58.33%) underwent radiotherapy alone for the treatment of the neck in N0. In N1 cases, primary RT was given in 8 cases (57.14%) and SND in 4 cases (28.57%). 6 cases of N2 necks (35.29%) underwent primary radiotherapy, and 4 cases each (23.53% each) underwent SND and surgery followed by radiotherapy.

Alveolus: Primary radiotherapy was done in 3 cases (75%) with N0. In N1 cases, 4 (36.36%) underwent surgery followed by radiotherapy, and 3 (27.27%) underwent SND, 2 cases (18.08%) RND and 2 cases (18.08%) MRND. Neck dissection with RT was done in 2 cases (40%) of N2.

Tongue: SOND was done in 13 cases with N0 (32.5%) and 20 cases (50%) underwent primary radiotherapy. In N1 cases 10 (21.74%) underwent SOND. 19 cases (41.30%) received primary radiotherapy, while 12 cases (26.09%) underwent surgery followed by radiotherapy. Primary radiotherapy was done in 30 cases (44.12%) of N2, while neck dissection with RT was done in 17 cases (25%). 3 cases of N3 (75%) had primary radiotherapy.

Floor of Mouth: Primary radiotherapy and SOND were done in 2 cases each (50% each) with N0. In N1 cases, 3 (50%) underwent SOND. Primary RT was done in 13 cases (40.63%) of N2 and SOND was done in 8 cases (25%). One case in N3 (100%) underwent primary radiotherapy.

Hard Palate: SOND was done in all 3 cases with N0. In N1 cases, 2 underwent SOND (50%), 1 case each (25% each) underwent primary radiotherapy and surgery followed by radiotherapy. Primary RT was done in 4 cases of N2 (100%).

Retromolar Trigone: SOND was done in 3 cases with N0 (50%). In N1 cases, 3 (37.5%) underwent SOND and 2 cases each (25%) underwent primary RT and neck dissection followed by RT. Primary RT was done in 4 cases of N2 (44.44%).

Surgery vs. Positive surgical margins vs recurrence and duration of recurrence

Of the 166 surgeries that were performed for malignancies of the oral cavity, 29 (17.47%) histopathological specimens showed a positive margin for tumor. Of the 29 patients, 20 received adjuvant radiotherapy. Of them, 6 had a recurrence in less than 6 months (30%), 5 had a recurrence between 6 months and 1 year (25%) and 3 patients (15%) had a recurrence after 1 year.

Lips: Of the 7 surgeries done, margins were positive in 1 case (14.29%) which underwent adjuvant radiotherapy. No recurrence was reported.

Buccal Mucosa: Of the 27 cases who had surgery done, 3 cases (11.11%) had positive margins. 2 of these 3 cases (66.67%) received adjuvant radiotherapy. One case (50%) developed recurrence in less than 6 months. The case without adjuvant RT (100%) developed recurrence between 6 and 12 months.

Alveolus: Of the 18 cases who had surgery done, 2 cases (11.11%) had positive margins. 1 of these 2 cases (50%) received adjuvant radiotherapy. The case with adjuvant radiotherapy developed recurrence in less than 6 months. The case without adjuvant RT (100%) was lost to follow-up.

Tongue: Of the 77 cases who had surgery done, 15 cases (19.48%) had positive margins. 12 of these 15 cases (80%) received adjuvant radiotherapy. 10 cases out of 12 developed recurrence; 3 (25%) in less than 6 months, 4 (33.33%) in 6 to 12 months, and 3 (25%) in more than 12 months. In the case without adjuvant RT all 3 (100%) developed recurrence within 12 months.

Floor of Mouth: Of the 19 cases who had surgery done, 5 cases (26.32%) had positive margins. 2 of these 5 cases (40%) received adjuvant radiotherapy. One case (50%) developed recurrence in less than 6 months. All three cases without adjuvant RT (100%) developed recurrence.

Hard Palate: Of the 6 cases who had surgery done, none had margins that were positive.

Retromolar Trigone: Of the 12 cases who had surgery done, 3 cases (25%) had positive margins. 2 of these 3 cases (66.67%) received adjuvant radiotherapy. One case (50%) developed a recurrence in 6-12 months. One case (100%) without adjuvant RT (100%) developed recurrence within 1 year.

		lip	BM	Alv	T	FOM	HP	RMT	Total
	No. of surgeries	7	27	18	77	19	6	12	166
	Margins +	1	3	2	15	5	-	3	29

	% age	14.29	11.11	11.11	19.48	26.32	-	25	17.47%
	Adjuvant RT	1	2	1	12	2	-	2	20
	No. adjuvant RT	-	1	1	3	3	-	1	9
Duration of Recurrence in Adjuvant Rx	<6 months	-	1	1	3	1	-	-	6
	% age	-	50	100	25	50	-	-	30%
	6-12 months	-	-	-	4	-	-	1	5
	% age	-	-	-	33.33	-	-	50	25%
	>12 months	-	-	-	3	-	-	-	3
	% age	-	-	-	25	-	-	-	15%
Duration of Recurrence without Adjuvant Rx	<6 months	-	-	-	1	1	-	-	2
	% age	-	-	-	33.33	33.33	-	-	22.22%
	6-12 months	-	1	-	2	1	-	1	5
	% age	-	100	-	66.67	33.33	-	100	55.56%
	>12 months	-	-	-	-	1	-	-	1
	% age	-	-	-	-	33.33	-	-	11.11%
Survival	1 year	-	3	-	10	3	-	2	18
	3 year	-	-	-	1	-	-	1	2
	5 year	1	-	1	1	-	-	-	3
	%age of overall survival >1yr	100	100	50	80	60	-	100	79.31%

Table 1 - Surgery vs. Positive Margins vs. Recurrence Rates and Survival

Treatment failures in oral cavity malignancies – comparison between surgery, rt and surgery followed by rt

Lip: Of the 5 cases who underwent surgery alone, 2 (40%) had recurrence in the primary site, while 1 (20%) had nodal recurrence. In the 3 cases who underwent primary radiotherapy 1 (33.33%) had recurrence at the primary site. In the cases where patients had surgery with postoperative radiotherapy, there was no recurrence.

Buccal Mucosa: Of the 14 cases who underwent surgery alone, 2 (14.29%) had recurrence in the primary site, while 1 (7.14%) each had nodal recurrence and both primary with regional recurrence. In the 27 cases who underwent primary radiotherapy, 9 (33.33%) had recurrence in the primary site, 1 (3.7%) had nodal recurrence, and 2 (7.41%) had both nodal and primary recurrence. In the 13 cases who had surgery with postoperative radiotherapy 4 (30.77%) had recurrence in the primary site and 1 (7.69%) had recurrence in both the primary and nodal sites.

Alveolus: Of the 9 cases who underwent surgery alone, 3 (33.33%) had recurrence in the primary site, while 1 (11.11%) had both primary and regional recurrence. In the 2 cases who underwent primary radiotherapy, 1 (50%) had recurrence in the primary site and 1 (50%) had nodal recurrence. In the 8 cases who had surgery with postoperative radiotherapy, 1 (12.5%) had recurrence in the primary site and 1 (12.5%) had recurrence in the nodal site.

Tongue: Of the 26 cases who underwent surgery alone, 3 (11.54%) had recurrence in the primary site, while 4 (15.38%) had nodal recurrence, and 3 (11.54%) had both primary and regional recurrence. In the 50 cases who underwent primary radiotherapy 7 (14%) had recurrence in the primary site, 3 (6%) had nodal recurrence and 4 (8%) had both nodal and primary recurrence. In the 46 cases who had surgery with postoperative radiotherapy 10 (21.74%) had recurrence in the primary site, 4(8.7%) in the nodal site, and 3 (6.52%) had recurrence in both the primary and nodal sites.

Floor of Mouth: Of the 11 cases who underwent surgery alone, 1 (9.09%) had a recurrence in the primary site. In the 18 cases who underwent primary radiotherapy 3 (16.67%) had recurrence in the primary site and 1 (5.56%) had nodal and local recurrence. In the 8 cases who had surgery with postoperative radiotherapy 1 (12.5%) had both recurrences in the primary and nodal sites.

Hard Palate: Of the 4 cases who underwent surgery alone, 1 (25%) had nodal recurrence. In the 6 cases who underwent primary radiotherapy 1 (16.67%) had recurrence at the primary site. In the 2 cases who had surgery with postoperative radiotherapy, there was no recurrence.

Retromolar Trigone: Of the 4 cases who underwent surgery alone, 1 (25%) had primary recurrence, and 1 (25%) had both primary and nodal recurrence. In the 5 cases who underwent primary radiotherapy, 3 (60%) had recurrences at the primary site. In the 8 cases who had surgery with postoperative radiotherapy, 2 cases (25%) had recurrence at the primary site.

	SURGERY										
	No Rec	Rec Primary				Rec Nodal				Rcpn	Total
		T1	T2	T3	T4	N0	N1	N2	N3		
Lip	2	2	-	-	-	-	-	1	-	-	3
BM	10	-	2	-	-	-	1	-	-	1	4
Alv	5	-	1	1	1	-	-	-	-	1	4
T	16	-	2	1	-	-	3	1	-	3	10
FOM	10	-	-	1	-	-	-	-	-	-	1
HP	3	-	-	-	-	-	1	-	-	-	1
RMT	2	-	1	-	-	-	-	-	-	1	2
TOTAL	48	2	6	3	1	-	5	2	-	6	25
% Age	65.75	8	24	12	4	-	20	8	-	24	-
	RADIOTHERAPY										
	No Rec	Rec Primary				Rec Nodal				Rcpn	Total
		T1	T2	T3	T4	N0	N1	N2	N3		
Lip	2	-	-	1	-	-	-	-	-	-	1
BM	15	1	4	1	3	-	-	1	-	2	12
Alv	-	1	-	-	-	-	-	1	-	-	2
T	36	-	5	1	1	-	2	1	-	4	14
FOM	14	-	1	1	1	-	-	-	-	1	4
HP	5	-	-	1	-	-	-	-	-	-	1
RMT	2	1	-	1	1	-	-	-	-	-	3
TOTAL	74	3	10	6	6	-	2	3	-	7	37
% Age	66.67	8.11	27.03	16.22	16.22	-	5.41	8.11	-	18.92	-
	SURGERY+RADIOTHERAPY										
	No Rec	Rec Primary				Rec Nodal				Rcpn	Total
		T1	T2	T3	T4	N0	N1	N2	N3		
Lip	1	-	-	-	-	-	-	-	-	-	-
BM	8	-	1	-	3	-	-	-	-	1	5
Alv	6	-	1	-	-	-	1	-	-	-	2
T	29	1	4	4	1	-	-	4	-	3	17
FOM	7	-	-	-	-	-	-	-	-	1	1

HP	2	-	-	-	-	-	-	-	-	-	-
RMT	6	-	1	-	1	-	-	-	-	-	2
TOTAL	59	1	7	4	5	-	1	4	-	5	27
% Age	68.60	3.70	25.93	14.81	18.52	-	3.70	14.81	-	18.52	-
Table 2- Treatment Failures in Oral Cavity Malignancies											

Discussion

Staging at time of presentation

In our series, most of the patients presented at an advanced stage (stage IV: 53.85% and stage III: 24%). Only 22.15% of the cases presented at an early stage (stage I: 8.92% and stage II: 13.23%). This is in contrast to the studies in developed countries, where more patients presented at an early stage. Educational and socioeconomic status may play a major role in the stage of the presentation.

Tongue: In a series by Luukka M et al.^[1] 42% of the cases had T2 tumours at presentation, followed by 29% T3 tumours and 26 % T1. 74.19% of the cases had no neck nodes at presentation, while 19.35 were N1. El-Husseiny G et al.^[2] had maximum numbers in T2 (46.35%) followed by T3 (27.81%). They also had most of their cases with N0 necks at presentation (69%). Our study had 40.38% presenting with T4 lesions and 29.49% presenting with T2 lesions. We had 38.46% of the cases with N3 necks, while 31.41% did not have any neck nodes at presentation.

Buccal Mucosa: In the study by Urist MM et al.^[3] 59% of the cases presented at an early stage (stages I and II) while 41% of the cases presented either in stage III or stage IV. 37% of the cases were presented at an early stage, while 63% were presented at a late stage in a series by Conley J et al. In our series, 71.19% presented at a late stage (stage III: 23.73% and stage IV: 47.46%) while 28.81% presented at an early stage (stage I: 10.17% and stage II: 18.64%).

Floor of Mouth: In the series by Shaha AR et al.^[4] 49% presented early (stages I and II) while 51% presented late. Ildstad ST et al.^[5] had an early presentation of 57%. In our study, 82.92% presented at a late stage, while only 17.08% presented early.

Pattern of nodal metastasis

In a series by Li XM et al.^[6] where he studied 153 cases of oral cavity cancers, the commonly affected neck nodes were level II (40.52%) followed by level I (19.60%), level III (18.95%), level IV (3.27%) and level V (2.61%). In our series level I was the most commonly affected (45.23%) followed by level II (39.08%). 7.08% had nodes in the level III , 0.31% in level IV and 0.62% in level IV.

		T1	T2	T3	T4
Surgery	El-Husseiny G et al.	50%	34%	5%	–
	Our Study	61.54%	10.86%	4.76%	6.35%
Radiotherapy	El-Husseiny G et al.	–	3%	24%	71%
	Our Study	7.69%	30.43%	33.33%	42.86%
Surgery + RT	El-Husseiny G et al.	50%	63%	71%	29%
	Our Study	15.38%	43.48%	28.57%	25.40%
Table 3 – Treatment vs. Staging in Malignancy of Tongue in Comparison					
		Stage I	Stage II	Stage III	Stage IV
Surgery	Ildstad ST et al.	38%	11%	16%	13%
	Our Study	100%	14.29%	33.33%	18.52%
Radiotherapy	Ildstad ST et al.	53%	78%	41%	61%

	Our Study	–	28.57%	66.67%	51.85%
Surgery + RT	Ildstad ST et al.	9%	11%	43%	26%
	Our Study	–	28.57%	–	22.22%
Table 4 – Treatment vs. Staging in Malignancy of FOM in Comparison					

Conclusion

To optimize survival, the therapeutic approach requires careful planning on the part of an integrated team of head and neck specialists including the surgeon and the radiotherapist. Though significant improvements have been made in the diagnosis and treatment of oral cancers in the last few decades, there is still a long way to go before we conquer this devastating disease.

Bibliography

1. Luukkaa M, Minn H, Aitasalo K, Kronqvist P, Kulmala J, Pyrhonen S, et al. Treatment of squamous cell carcinoma of the oral cavity, oropharynx and hypopharynx--an analysis of 174 patients in south western Finland. *Acta Oncol* 2003;42(7):756-62.
2. El-Husseiny G, Kandil A, Jamshed A, Khafaga Y, Saleem M, Allam A, et al. Squamous cell carcinoma of the oral tongue: an analysis of prognostic factors. *Br J Oral Maxillofac Surg* 2000;38(3):193-9.
3. Urist MM, O'Brien CJ, Soong SJ, Visscher DW, Maddox WA. Squamous cell carcinoma of the buccal mucosa: analysis of prognostic factors. *Am J Surg* 1987;154(4):411-4.
4. Shaha AR, Spiro RH, Shah JP, Strong EW. Squamous carcinoma of the floor of the mouth. *Am J Surg* 1984;148(4):455-9.
5. Ildstad ST, Bigelow ME, Remensnyder JP. Intra-oral cancer at the Massachusetts General Hospital. Squamous cell carcinoma of the floor of the mouth. *Ann Surg* 1983;197(1):34-41.
6. Li XM, Wei WI, Guo XF, Yuen PW, Lam LK. Cervical lymph node metastatic patterns of squamous carcinomas in the upper aerodigestive tract. *J Laryngol Otol* 1996;110(10):937-41.