

Supramandibular Facial Lymphnode Involvement in Oral Cavity Squamous Cell Carcinoma

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Abstract

According to National Comprehensive Cancer Network (NCCN), In 2022, it is estimated that about 66,470 new cases of oral cavity, pharyngeal, and laryngeal cancers will occur, which account for approximately 3.5% of new cancer cases in the United States.¹ An estimated 15,050 deaths from head and neck (H&N) cancers will occur during the same time period.¹ Squamous cell carcinomas account for more than 90% of these tumors. Facial lymphnode is unusual site for metastasis of oral cavity squamous cell carcinoma. Positive involvement of supramandibular facial lymphnode on histopathological examination increases chances of recurrence although it is unusual and rare. This facial lymphnode is placed along with facial artery at margin of body of mandible. We have studied 54 patients with squamous cell carcinoma of oral cavity and supramandibular facial lymphnode involvement

histopathologically. We found that approximately 10% patients have a positive supramandibular facial lymphnode involvement.

Keywords: Supramandibular facial lymphnode, oral cavity squamous cell carcinoma.

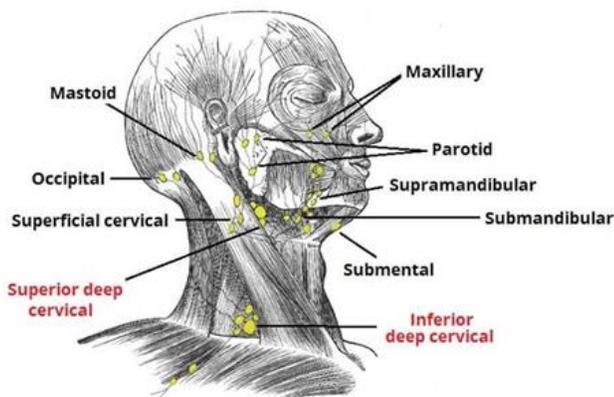
Introduction

According to National Comprehensive Cancer Network (NCCN), In 2022, it is estimated that about 66,470 new cases of oral cavity, pharyngeal, and laryngeal cancers will occur, which account for approximately 3.5% of new cancer cases in the United States.¹ An estimated 15,050 deaths from head and neck (H&N) cancers will occur during the same time period.¹ Squamous cell carcinomas account for more than 90% of these tumors.⁽¹⁾ Oral carcinoma usually metastasized to cervical lymphnode. lymphnode is unusual site for metastasis of oral cavity squamous cell carcinoma. The presence of lymphnode metastasis reduce survival rate

by 50% and counted as negative prognostic factor in treatment of head and neck carcinoma (2). In 1954, Gray's described this node as STAR lymphnode which is found just where the facial artery crosses the horizontal ramus of the mandible (3). Supramandibular facial lymphnode may be missed during neck dissection which are located along the exterior surface of the jaw, anterior to the masseter muscle, and adjacent to the facial artery(5).

Anatomy of nodes

Facial lymphnode are classified into superficial group of cervical lymphnode.They comprise four groups including mandibular, buccinators, infraorbital, and malar. The mandibular lymph nodes are also called the Supramandibular group of facial nodes are located adjacent to facial artery, at the anterior border of the masseter muscle, overlying the horizontal ramus of the mandible.



Materials and Methods

Prospective observational study was conducted from august 2020- august 2022 in Bharati Vidyapeeth medical college, Pune, In, all patients with proven biopsy report of squamous cell carcinoma of oral cavity was included in our study. Their demographic features were noted. Following that they are planned for appropriate surgical procedure and neck dissection. There is special effort was made during neck dissection to find out supramandibular facial lymphnode and dissection of it. After that this lymphnode was sent to histopathological examination in separate container with other specimen.

Inclusion Criteria

- Histopathologically proven squamous cell carcinoma of oral cavity with clinically palpable and non-palpable cervical lymphnode

Exclusion Criteria

- Metastasis present
- Previous history of neoadjuvant chemotherapy and/or radiotherapy
- Previous operated case/ recurrence.

Result

Parameters		Frequency
Age	<40 yrs.	2
	40-45 yrs	7
	46-50 yrs	6
	51-55 yrs	14
	56-60 yrs	15
	61-65 yrs	2

	65–70 yrs	5
	>70 yrs	3
Sex	Male	39
	Female	15
Clinical T stage	T1	17
	T2	26
	T3	9
	T4	2
Subsite	Alveolus	12
	Buccal Mucosa	18
	GBS	18
	Tongue	6
Neck dissection	RND	0
	MRND Type I	0
	MRND type II	44
	MRND type III	2
	SOHND	8
Clinical N stage	N0	40
	N+	14

Parameters		Facial Lymphnode involvement on Histopathology examination		
		Negative	Positive	Total
Clinical T stages	T1	16 (94.1%)	1 (5.9%)	17 (100%)
	T2	24 (92.3%)	2 (7.7%)	26 (100%)
	T3	7 (77.8%)	2 (22.2%)	9 (100%)
	T4	2 (100.0%)	0 (0.0%)	2 (100%)
Cervical Lymphnode Palpable	Yes	13(92.85%)	1(7.14%)	14(100%)
	No	36(90%)	4(10%)	40(100%)
Site of Lesion	Alveolus	9 (75.0%)	3 (25.0%)	12 (100%)
	Buccal	17 (94.4%)	1 (5.6%)	18 (100%)
	GBS	18 (100.0%)	0 (0.0%)	18 (100%)
	Tongue	5 (83.3%)	1 (16.7%)	6 (100%)

Parameters	Parameters	Cervical Lymphnode Involvement on Histopathology Examination		
		Negative	Positive	Total
Clinical T stages	T1	11 (64.7%)	6 (35.3%)	17 (100%)
	T2	18 (69.2%)	8 (30.8%)	26 (100%)
	T3	5 (55.6%)	4 (44.4%)	9 (100%)
	T4	1 (50.0%)	1 (50.0%)	2 (100%)
Cervical Lymphnode Palpable	Yes	6(42.85%)	8(57.14%)	14 (100%)
	No	29 (72.5%)	11(27.5%)	40 (100%)
Site of Lesion	Alveolus	5 (41.7%)	7 (58.3%)	12 (100%)
	Buccal	15 (83.3%)	3 (16.7%)	18 (100%)
	GBS	12 (66.7%)	6 (33.3%)	18 (100%)
	Tongue	3 (50.0%)	3 (50.0%)	6 (100%)

We studied total 54 patients, out of which median age group was 56 to 60 yrs. Out of which 72.22% patients were male and 27.78% patients were female. In our study 17(31.48%), 26(48.14%), 9(16.67%), 2(3.70%) patients were from respectively T1, T2, T3 and T4 stages. Most common subsite in our study is 33.33% patient has buccal mucosa and GBS involvement following that 22.22% patient has alveolar mucosa involvement. 40 patients (74%) have clinically not palpable patients and 14 patients (26%) has clinically palpable lymphnode. Most common neck dissection was done is MRND type II.

We studied total 54 patients with squamous cell carcinoma of oral cavity. Total 5 patients have positive supramandibular facial lymphnode on histopathology examination which is approximately 10%. Almost 80% patients have moderately differentiated carcinoma and 20% patients has well differentiated carcinoma out of patients who have positive facial lymphnode involvement.

In study, 12 patients have carcinoma over alveolar margins as primary lesion. Out of this, 3 patients have positive facial lymphnode involvement on histopathology examination which is around 25% of patients.

T clinical staging is also one of the important factors affecting lymphnode involvement. Total 17 patients are in T1 stage, out of which 6 patients have positive cervical lymphnode involvement and 1 patient has facial lymphnode involvement. 2 patients from T2 stage and 2 patients from T3 stage were found positive for facial lymphnode involvement out of 26 and 9 patients respectively.

Discussion

Treatment recommendations are based on clinical stage, medical status of the patient, anticipated functional and cosmetic results, and patient preference. Surgery is recommended for early-stage and locally advanced resectable lesions in the oral cavity. Adjuvant radiation is recommended based on stage of disease and pathologic findings following surgery.

Out of 54 patients, 5 patients (9.3%) had supramandibular facial lymphnode involvement on histopathological examination and rest 49 patients (90.7%) had no involvement on histopathology examination. Similar finding seen in Sitaram DV et al shows in his study that the facial node was clinically palpable in 44.0% of patients and was positive for metastasis histopathological in only 12%. [6]

In present study, most frequent site involved in carcinoma of oral cavity are buccal mucosa and GBS which are 33.3% each, followed by alveolus in about 22.2% of patients. Which is not go with study of Zeng et. al. which found that common site was tongue cancer (41.8%), buccal mucosal cancer (13.6%), gingival cancer (17.3%), carcinoma of the floor of mouth (20.9%), and carcinoma of the hard palate (6.36%). [7] Sitaram DV et al also found in study that most of the patients presented with carcinoma of the tongue (44%) followed by carcinoma of the buccal mucosa (40%). [6] Majority of patient in present study is among the T2 stage followed by T1, T3 and T4 respectively. Zeng et. al. found in his study that stage T1 (33.6%) was the most common, followed by T2, T3, and T4. [35] Sitaram DV et al shows in study that Majority of the patients clinically diagnosed to have T4 lesions followed by T2 lesions, T3 lesions and T1 lesion. [6]

According to Clinical N staging, majority of the patients 72.22% were among N0 stage and rest 27.78% of the patients were among N1 stage. Sitaram DV et al shows in his study that Out of the 25 patients, 36 % had no palpable nodes, 44.0% of patients with N1 nodes and 20.0% of patients with N2 nodes in the neck. [6] Lu HJ et al found that 77.14% were among N0 stage followed by 9.07% among N1 stage and 13.79% among N2 stage. [8] Zeng et. al. found in his study that 62.0% were among

N0 stage followed by 22.0% among N1 stage and 16.0% among N2 stage. [7]

In this study out these 5 patients, 3 patients had carcinoma over alveolus along with that 1 patient had carcinoma of buccal mucosa and 1 patient had carcinoma of tongue. Thereby indicating 25% patient of alveolar carcinoma and 16.7% patient of tongue carcinoma had supramandibular facial lymphnode involvement on histopathological examination. Sitaram DV et al shows in his study that histopathologically confirmed facial node involvement was present in 25.0% of patients with carcinoma of the lower alveolus and 20.0% of patients with carcinoma of the buccal mucosa. [6] which is correlating with present study.

Early Clinical T stage (T1 and T2) are 43 patients, out of these 14 patients have positive cervical lymphnode involvement (which is around 32%) and 3 patients has positive facial lymphnode involvement (among which 2 patients from in T2 stage and 1 patient from T1 stage). But total 9 patients categories in T3 stage, out of which 2 patients have positive facial lymphnode involvement on histopathology. (Around 22%). Lu HJ et al found that 21.10% of patient in clinical T1 and T2 stage and 66.25% of patients in clinical T3 and T4 stage had positive Cervical lymphnode (8).

5 patients have positive facial lymphnode involvement on histopathology out total 54 patients. Out of these 4 patients (around 80%) have moderately differentiated squamous cell carcinoma. Petsinis V shows in his study that Facial lymphnode was found positive among 15.15% of moderately differentiated tumor and 25.0% of poorly differentiated tumor. [9]

In our study, we found one case in which only facial lymphnode was positive and cervical lymphnode was negative.

Conclusion

- The supramandibular facial lymphnode is found positive in 9.3% of patients on histopathological evaluation.
- Alveolar site carcinoma has highest frequency for supramandibular facial lymphnode involvement with metastasis.
- Supramandibular facial lymphnode is found positive more in patients with clinical T3 staging of tumour.

Recommendations

One Should make effort to dissect supramandibular facial lymphnode in an attempt to decrease chances of local recurrence from missed metastasis lymphnode.

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