

Frequency and Pattern of Presentation of Neck Lymphadenopathy in Oral Squamous Cell Carcinoma in Patients Presenting to Nishtar Hospital, Multan

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ABSTRACT

Objective: Frequency and pattern of presentation of neck lymphadenopathy in oral squamous cell carcinoma.

Study Design:

Place and Duration of Study: Nishtar Institute of Dentistry Multan from 1st January 2021 to 31st December 2021.

Methodology: Forty lymph nodal involvement were assessed, either unilateral, bilateral and multiple or single. It was checked how many lymph nodes are involved; extra capsular spread was assessed. The findings of a histological examination of the removed tissue were obtained. Level of lymph adenopathy was measured.

Results: Mean age was found to be 46.9 with minimum of 20 and maximum of 75. There were total 25(62.5%) males and 15(37.5%) females. Ten (25%) patients had lip involvement and 22(55%) had buccal mucosa, 6(15%) had gingival, 2(5%) had palate evolved. Eight (20%) were found to be having unilateral lymph node evolved while 32(80%) were found to be having bilateral involvement. 20(50%) were having single lymph node involvement and 20 (50%) were having multiple lymph node involvement. Twenty (50%) were having <3 lymph node size and 20 (50%) were having 3-6 lymph node size. Consistency of lymph node was hard 18 (45%) and rubbery in 22 (55%). Twenty-six (65%) were having 1-3 lymph node involvement and 14 (35%) were having 5- 10 lymph node involved. Extra capsular spread was seen in 2 (5%) cases.

Practical implication

Conclusion: Most of cases presented of oral squamous carcinoma were stage I and stage II. Bilateral lymph nodal involvement was seen was common and buccal mucosa was commonly affected site.

Keywords: Carcinoma, Oral squamous carcinoma, Lymph node, Lymph adenopathy

INTRODUCTION

Early cervical lymph node metastases from oral cancer may affect one or more lymph nodes, and it can occur bilaterally.¹ In between 20% and 40% of individuals with early-stage mouth cancer, cervical lymph node metastases are occult.² Squamous cell carcinoma (SCC) incidence is regarded as one of the ten most frequent malignancies worldwide and the second most frequent cancer diagnosed.³

The likelihood of oral cancer seems to be increasing in emerging nations.⁴ The primary method of metastasis in different stages of oral cancer is to cervical lymph nodes, and it also has a significant impact on the prognosis of the disease.^{5,6} The prognosis of patients will be significantly influenced by the size and quantity of metastatic lymph nodes, the presence or absence of capsular invasion, and the degree of neck area involvement.⁷ One of the key aspects that impacts a patient's prognosis is the development pattern of their oral squamous cell carcinoma and the evolution of their lymph nodes.⁸ The patient's cervical lymph node metastasis, which may be asymptomatic, has to be thoroughly evaluated clinically, radiologically, and histologically with needle biopsy (or core biopsy, if necessary) from the cervical lymph node(s) and biopsy from the main cancer site.⁹ Each of the V levels and the two sublevels that make up the cervical lymph node should be examined.^{10,11}

There is a need for more research on the prevalence of oral squamous cell carcinoma, as well as its stage and features, including age, sex, lesion site, and T stage, as well as cervical lymph node metastasis. Age and gender may each independently increase the incidence of cervical lymph node metastases in individuals with oral squamous cell carcinoma. The purpose was to determine how often and how neck lymphadenopathy manifests in cases with oral squamous cell carcinoma.

MATERIALS AND METHODS

The study was carried out at Nishtar Institute of Dentistry Multan and ethical approval was taken from research committee. Informed written consent was taken from participants. Data from forty participants were included from 1st January 2021 to 31st December 2021. The research excluded patients who had oral squamous cell carcinoma that had returned or spread. Every patient included in the research had been diagnosed with oral squamous cell carcinoma and was above 20 years old. Lymph nodal involvement

was assessed, either unilateral, bilateral and multiple or single. It was checked how many lymph nodes are involved; extra capsular spread was assessed. The findings of a histological examination of the removed tissue were obtained. The degree of lymphadenopathy was calculated. The analysis uses SPSS version 23. P value under 0.05 was regarded as significant.

RESULTS

The mean age was 46.9 with minimum of 20 and maximum of 75. There were 25 (62.5%) males and 15 (37.5%) females. Forty (100%) patients were histopathological proven squamous cell carcinoma patients. Ten (25%) patients had lip involvement and 22 (55%) had buccal mucosa, 6 (15%) had gingival, 2 (5%) had palate evolved. Eight (20%) were found to be having unilateral lymph node evolved while 32 (80%) were found to be having bilateral involvement.

Table 1: Site Involvement (n=40)

Site	No.	%
Lips	10	25.0
Buccal mucosa	22	55.0
Gingiva	6	15.0
Palate	2	5.0

Table 2: Lymph nodal Involvement (n=40)

Lymph node	No.	%
Unilateral	8	20.0
Bilateral	32	80.0

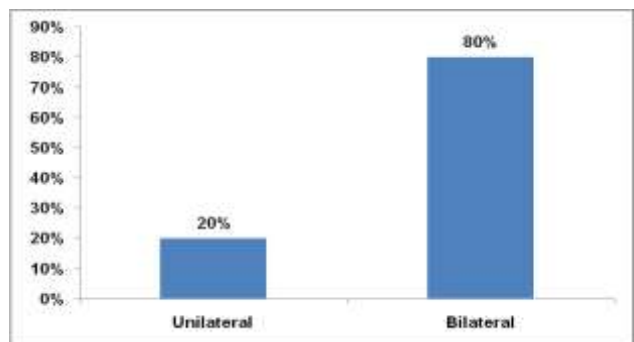


Fig. 1: Neck lymph node involved

Twenty (50%) were having single lymph node involvement and 20 (50%) were having multiple lymph node involvement. Twenty (50%) were having <3 lymph node size and 20 (50%) were having 3-6 lymph node size. Consistency of lymph node was hard 18 (45%) and rubbery in 22 (55%). Twenty-six (65%) were having 1-3 lymph node involvement and 14 (35%) were having 5- 10 lymph node involved. Extra capsular spread was seen in 2 (5%) cases. Thirty four (85%) were categorized in level I in which 15(37.5 %) were placed in sublevel IA and 5 (12.5%) were placed in sub level IB. 33 (82.5%) were categorized in level IIA in which 21(52.5 %) were placed in sublevel IIA and 21 (52.5%) were placed in sub level IIB, 21 (52. %) in level III and 13 (32.5%) in level IV and 7 (17.5%) [Tables 1-2, Fig.1].

DISCUSSION

In the present study, it was seen that 10 (25%) patients had lip involvement and 22 (55%) had buccal mucosa involved, 6 (15%) had gingiva involved 2(5%) has palate evolved. Eight (20%) patients were found to be having unilateral lymph node evolved while 32 (80%) were found to be having bilateral involvement. Twenty (50%) were having single lymph node involvement and 20 (50%) were having multiple lymph node involvement. Twenty (50%) were having <3 lymph node size and 20 (50%) were having 3-6 lymph node size. According to a prior research, patients with invasive oral cancer had the greatest positive incidence of lymph node metastasis (37.9%), whereas patients with exogenous and ulcer types had rates of 25.4% and 10.7%, respectively.¹²⁻¹⁴

Consistency of lymph node was hard 18 (45%) and rubbery in 22 (55%). Twenty-six (65%) were having 1-3 lymph node involvement and 14 (35%) were having 5- 10 lymph node involved. Extra capsular spread was seen in 2 (5%) cases. Thirty four (85%) were categorized in level I in which 15(37.5 %) were placed in sublevel IA and 5 (12.5%) were placed in sub level IB. 33 (82.5%) were categorized in level IIA in which 21(52.5 %) were placed in sublevel IIA and 21 (52.5%) were placed in sub level IIB, 21 (52. %) in level III and 13 (32.5%) in level IV and 7 (17.5%). According to a recent research, level IIB lymph nodes mostly drain the skin around the head and neck, the nasal cavity, and the nasopharynx before emptying into the jugular and spinal accessory nodes.¹⁵ These nodes do not, however, drain the larynx, hypopharynx, oropharynx, or oral cavity.¹⁶ The research looked at several cancer stages (IA, IB, IIA, IIB, III, IV, and V) and found that each stage had a distinct number of positive locations. The numbers of positive areas were as follows: 2, 15, 12, 1, 4, 0, and 0, respectively. This study also revealed the rates of regional metastasis corresponding to these stages, which were 5.9%, 44.1%, 35.3%, 2.9%, 11.8%, 0%, and 0%, respectively. Additionally, the study confirmed the presence of positive lymph node metastases in each stage, with the numbers being 2, 17, 17, 1, 5, 0, and 0, respectively.

CONCLUSION

The majority of oral squamous carcinoma patients that were reported were stage I and stage II. Bilateral lymph nodal involvement was seen was common and buccal mucosa was commonly affected site.

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REFERENCES

1. Fatima S, Hosein M, Butt SA, Baig FA, Siddiqui RA, Abidi F. Squamous cell carcinoma of tongue: analysis of clinico pathological features. *J Adv Medicine Med Res* 2020;31:198-203.
2. Tandon A, Bordoloi B, Jaiswal R, Srivastava A, Singh RB, Shafique U. Demographic and clinicopathological profile of oral squamous cell carcinoma patients of North India: A retrospective institutional study. *SRM J Res Dent Sci* 2018; 9:114-8.
3. Sahaf R, Naseem N, Rehman A, Anjum R, Nagi AH. A Study of 89 Cases of Oral Squamous Cell Carcinoma Presenting at Teaching Hospitals of Lahore, Pakistan. *J Pak Dent Assoc* 2017; 26(1): 26-31.
4. Patel AS, Karagas MR, Perry AE, Nelson HH. Exposure profiles and human papillomavirus infection in skin cancer: an analysis of 25 genus β -types in a population based study. *J Invest Dermatol* 2008;128(12):2888-93.
5. Piersiala K, da Silva PF, Hjalmarsen E, Kolev A, Kágedal Å, Starkhammar M, et al. CD4+ and CD8+ T cells in sentinel nodes exhibit distinct pattern of PD-1, CD69, and HLA-DR expression compared to tumor tissue in oral squamous cell carcinoma. *Cancer Sci* 2021;112(3):1048.
6. Rathee R, Devi A, Narwal A, Kamboj M, Singh S. Immunohistochemical coexpression of MUC1 and MUC4 in oral leukoplakia and oral squamous cell carcinoma. *Head Neck Pathol* 2021; 5:1-2.
7. Troeltzsch M, Haidari S, Boser S, Troeltzsch M, Probst FA, Ehrenfeld M, et al. What factors are associated with regional recurrence after operative treatment of oral squamous cell carcinoma?. *J Oral Maxillofac Surg* 2018; 76(12): 2650-9.
8. Thompson LD, Burchette R, Iganey S, Bhattasali O. Oropharyngeal squamous cell carcinoma in 390 patients: analysis of clinical and histological criteria which significantly impact outcome. *Head Neck Pathol* 2020;14(3):666-88.
9. chache AG, Powel ING, Cuschieri KS, et al. HPV related oropharynx cancer in the United Kingdom: An evolution in the understanding of disease etiology. *Cancer Res* 2016;76:6598–606.
10. Martinez RC, Sathasivam HP, et al. Clinicopathological features of squamous cell carcinoma of the oral cavity and oropharynx in young patients. *Br J Oral Maxillofac Surg* 2018; 56(4):332-337
11. Woolgar JA. Detailed topography of cervical lymph-node metastases from oral squamous cell carcinoma. *Int J Oral Maxillofac Surg* 1997; 26(1): 3-9.
12. Okada Y, Mataga I, Katagiri M, Ishii K. An analysis of cervical lymph nodes metastasis in oral squamous cell carcinoma: Relationship between grade of histopathological malignancy and lymph nodes metastasis. *Int J Oral Maxillofac Surg* 2003; 32(3): 284-8.
13. Yuasa K, Kawazu T, Nagata T, Kanda S, Ohishi M, Shirasuna K. Computed tomography and ultrasonography of metastatic cervical lymph nodes in oral squamous cell carcinoma. *Dentomaxillofac Radiol* 2000; 29(4): 238-44.
14. Kreppel M, Scheer M, Drebber U, Ritter L, Zöller JE. Impact of podoplanin expression in oral squamous cell carcinoma: clinical and histopathologic correlations. *Virchows Arch* 2010; 456, 473-82.
15. Nguyen ST, Hasegawa S, Tsuda H, Tomioka H, Ushijima M, Noda M, Miki Y. Identification of a predictive gene expression signature of cervical lymph node metastasis in oral squamous cell carcinoma. *Cancer Sci* 2007; 98(5), 740-46.
16. Li Y, Liu K, Ke Y, Zeng Y, Chen M, Li W, Yu H. Risk factors analysis of pathologically confirmed cervical lymph nodes metastasis in oral squamous cell carcinoma patients with clinically negative cervical lymph node: results from a cancer center of central China. *J Cancer* 2019; 10(13): 3062.