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ORIGINAL ARTICLE

Frequency and involvement of lymph nodes in squamous cell carcinoma of oral cavity in cross sectional population.

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ABSTRACT… Objective: To find out the frequent site of squamous cell carcinoma of oral cavity and pattern of neck node involvement in cross sectional population. **Study Design:** Prospective Study. **Setting:** Department of Otorhinolaryngology Head and Neck Surgery, Abbasi Shaheed Hospital Karachi and Karachi Medical and Dental College. **Period:** 01-06-2023 to 31-12-2023. **Methods:** Patients who biopsy proven squamous cell carcinoma of oral cavity visited ENT department Abbasi Shaheed Hospital were include in this study. Proforma was made in which detail history and examination were noted. Oral cavity examined to see the size and site of tumor. Neck was palpated to see palpable cervical lymph node. CT scan head and neck with contrast was done. Those patients who fulfilled the inclusion and exclusion criteria included in this. **Result:** 56 patients were selected in this study who fulfill the inclusion criteria. Male were 37 (66%). Maximum number of patients were between the 41-50 years of age, 24 patients (42.8%). Most common site of carcinoma was buccal mucosa 27 (48.2%). Highest number of patients presented with T3 stage 22 patients (39.2%). The frequency of lymph node involvement noted in 35 (62.5%) patients while 21 (37.5%) came with no lymph node. Level I was the most frequent level involved, it was involved in 28 patients (50%). **Conclusion:** Oral squamous cell carcinoma usually reported late. Early referral to otorhinolaryngologist and educate patient to consult Otorhinolaryngologist as earliest for early diagnosis and appropriate treatment plan.

Key words: Lymph Node Metastasis, Neck Nodes, Oral Cancer, Risk Factors for Metastasis, Squamous Cell Carcinoma.

INTRODUCTION

Oral cavity is the first part of digestive tract which starts from vermillion border and ends between junction of soft and hard palate. It is lined by stratified squamous epithelium. Most of tumors arise from squamous epithelium. More than 90% cases of oral cavity tumors diagnose Squamous cell carcinoma. Squamous cell carcinoma is one of the most common head and neck tumor.[1] It is the eight most common cancer in the world.[2] Tongue is one of the commonest site of oral carcinoma in those countries where tobacco chewing is not in habit[3] while in South East Asia, buccal mucosa is the most frequent site of oral cancer about 40% due to bad oral habit.[3] In countries like Pakistan, India, Bangladesh squamous cell carcinoma oral cavity found most common type of malignancy.[4] Incidence of squamous cell carcinoma shows geographically variation. In Pakistan, incidence of oral squamous cell carcinoma is 9%.[5] The reason of high incidence in this region due to bad oral habit like eating gutka, chewing betel nut tobacco etc. The content used in preparation for making it are carcinogenic.[6]

Oral cavity is rich in lymphatic drainage and blood supply. Therefore, risk of cervical metastasis is high. The lymph node involvement in oral squamous cell carcinoma mostly level I, II and III. The incidence of early lymph node involvement in T1 and T2 has been reported between 27% and 40% respectively. About 50% patients had positive lymph node at the time of diagnosis. Positive neck nodes has poor outcome.[7] Status of neck nodes at the time of presentation is the important prognostic factor. If neck nodes are positive the chances of success of treatment reduce to 50%. For early diagnosis of carcinoma

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of oral cavity and involvement of neck nodes, proper history, clinical examination, CT scan, biopsy of the growth and FNAC of neck node plays essential role in diagnosis and treatment plan. Gold standard radiological investigation to identify neck node is CT scan.[8] FNAC is also a standard method to evaluate neck mass.[9]

Oral squamous cell carcinoma in Pakistan is a major health issue due to its high morbidity and poor survival rate.[10] Usually, patients come late for treatment because of late referral from local general physician and lack of awareness from the patient side. This study is planned to search the most frequent site of carcinoma in oral cavity and level of lymph nodes involvement in cross sectional population. This may be helpful for early referral from general practitioner and also educate patient to consult Otorhinolaryngologist as earliest to prevent unnecessary morbidity.

METHODS

This prospective study was conducted at Otorhinolaryngology Head and Neck Surgery Department of Abbasi Shaheed Hospital Karachi Pakistan from 01-06-2023 to 31st-12-2023 after approval from ethical committee (0044123/30-5-23).

All patients who biopsy proven squamous cell carcinoma of oral cavity visit ENT department Abbasi Shaheed Hospital, were examined. Detail proforma was made in which history was taken and complete ENT examination was done and noted. Oral cavity was examined to see the size and site of tumor. Neck was palpated to see palpable cervical lymph node. CT scan head and neck with contrast was done. Those patients who fulfilled the inclusion and exclusion criteria were included in this study.

Data Analysis Procedure

Data will analyzed on SPSS.

Inclusion Criteria

1. All above 20 years either male or female.
2. Histology (biopsy) proven squamous cell carcinoma of all stages.
3. Positive neck node on clinical palpation or radiological more than 1cm on CT-SCAN head and neck with contrast.
4. Tumor involving any site of oral cavity
5. Willfully participated in study.

Exclusion Criteria

1. Tumor involving oropharynx.
2. Post radiotherapy patients.
3. Patients with recurrence.
4. Previous operated patients

RESULTS

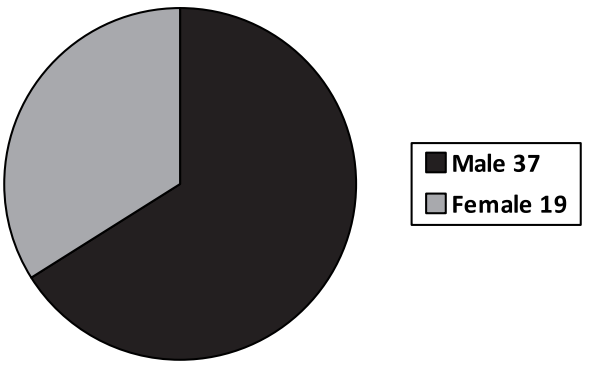

Figure-1. Gender

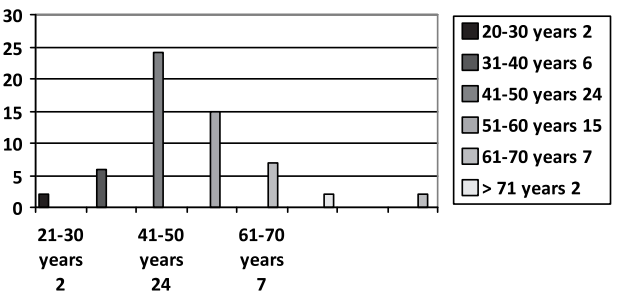

Figure-2. Age group

Site	Number of Patients	% of Patients
Cheek	27	48.2
Tongue	13	23.2
Mandible	7	12.5
Lip	3	5.3
Floor of mouth	3	5.3
Hard palate	2	3.5
Retromolar area	1	1.7

Table-I. Site of tumor

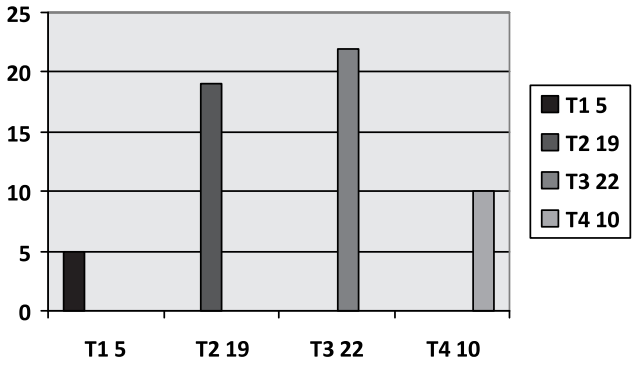

Figure-3. Tumor size

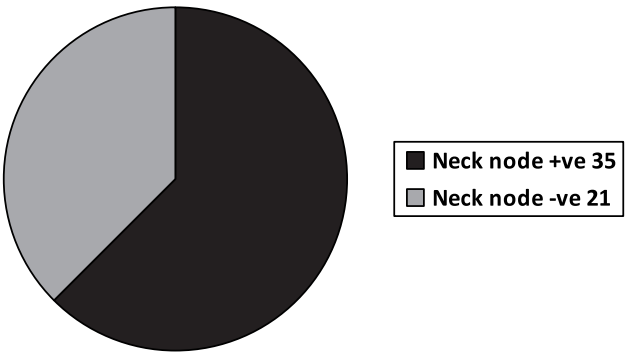

Figure-4. Frequency of neck node

Pattern of Level of Lymph Node	Number of Patients	% of Involvement
Level I	28	50
Level II	22	39.2
Level III	9	16
Level IV	3	5.3

Table-II. Pattern of lymph node involvement

56 patients were selected in this study who fulfilled the inclusion criteria. Figure-1 showed gender difference, male were 37 (66%) and female were 19 (33.9%). Male female ratio was 1.9:1. Figure-2 showed age incidence, the maximum number of patients were between the 41-50 years of age, 24 patients (42.8%) followed by 51-60 years of age 15 (26.7%) patients and 2 (3.5%) patients above the age of 71 years. Table-I showed site of tumor, maximum number patients presented with carcinoma of cheek 27 (48.2%) followed by tongue 13 (23.2%) patients. Only 1 (1.7%) patient came with retro-molar involvement. Figure-3 showed tumor size, highest number of patients presented with tumor stage was T3 22 patients (39.2%) followed by T2 19 (33.9%) patients. Figure-4 showed frequency of lymph node involvement, 35 (62.5%) patients came with lymph nodes positive while 21 (37.5%) came with no lymph node. Table-II showed neck node involvement, level I was the most frequent level involved, it was involved in 28 patients (50%) followed by level II 22 (39.2%) patients.

DISCUSSION

Oral cavity squamous cell carcinoma is highly prevalent in worldwide and leading cause of death in South-Asia. In Pakistan, it is the commonest cancer in male and in female second most common cancer[11] after breast cancer. Small lesion usually asymptomatic or present with vague symptoms and with minimal findings on examination which causes late diagnosis[12] If patient have history of tobacco, naswar or gutka and high index of clinical suspicious need proper workup for early diagnosis.[13] In oral cancer, neck nodes are the first site is affected by metastasis. Neck node metastasis is the most important prognostic factor in head and neck squamous cell carcinoma of oral cavity.[14,15] On account of this widely demonstrated fact, management of neck disease in oral cavity cancers has been considered as one of the most important aspects of treatment. Presence of neck nodes effects the prognosis of patient.[16] On account of this widely demonstrated fact, management of neck disease in oral cavity cancers has been considered as one of the most important aspects of treatment. This study is to find the most frequent site of oral cancer and pattern of lymph node involvement in our population.

In current study, 56 patients were selected for this study. The incidence of oral cavity carcinoma in male is higher in male as compare to female. Male were 37 (66%) and female were19 (33.92%). Male and female ratio was 1.94:1. According to Mahmud Asif et.al study male female ratio is 4.11.[12] Khaleel ME study also showed male preponderance.[17] This is may be due to high prevalence of tobacco use and betel quid chewing among men is common in Pakistan, both are strongly associated with squamous cell carcinoma of oral cavity. The maximum number of patients were between the ages of 41-50 years

24 patients (42.8%). In Mahmud Asif study, the maximum number of patients were between the age of 31-50 years of age (58.5%). Another study also shows the mean age of squamous cell carcinoma of oral cavity was 47.[18] Both study support the current study. Second common age group was noted between the 51-60 years of age 15 patients (26.7%). The site of squamous cell carcinoma oral cavity varied throughout the world. The current study showed the buccal cavity was the most frequent site of squamous cell carcinoma of oral cavity, which was 27 patients (48.2%) followed by tongue 13 patients (23.2%). Local study showed the most frequent site of oral squamous cell carcinoma is buccal mucosa about 50% followed by tongue[10,18,13], while in western study tongue is the most frequent site of oral squamous cell carcinoma.[19] The main reason of oral squamous cell carcinoma of buccal mucosa in Pakistan is chewing habit of betel quid, areca nut and tobacco, they all contain carcinogens and also continuously damage the oral mucosa. These causes chronic inflammation of oral mucosa and damage DNA, leading to malignant transformation.[20] Most of the patients presented with primary tumor T2, followed byT3, which had 19 (33.9%) and 22 (39%) patients' respectively. Study conducted in Karachi shows highest number of primary tumor is T3 34% followed by T2 28%.[18] Delayed presentation may be due to lack of awareness about the symptoms from the patients' side and also misinterpretation of diagnosis when present as a minor oral ulcer.[21] According to Morelatto et.al, both doctors and patients are responsible for delay diagnosis and management.[22]

The presence of cervical lymphadenopathy is an independent predictor of poor survival.[23] So the management of cervical node metastasis is of paramount importance in the treatment of oral cavity squamous cell carcinoma. In current study, the incidence of lymph node involvement in oral squamous cell carcinoma was noted in 35 patients (62%) while 21 patients (37.5%) were No in examination. Level I was the most frequent level involved in lymph node metastasis 28 patients (50%) followed by level II, 22 patients (39.28%), only in 3 patients (5.3%) level IV was involved. In Nithya study, level II was the most commonly involved site (63.3%).[13] But local study showed the most frequent level is level I (44%) followed by level II (32%)[18] which is closed to the current study. In above study, most of the patients presented at stage T II and T III with positive lymph node on examination. This is due to lack of awareness from patients' side and also misdiagnosed from the health professional. Early referral to otorhinolaryngologist and educate patient to consult Otorhinolaryngologist as earliest for early diagnosis and appropriate treatment plan.

CONCLUSION

Due to lack of awareness, patients refer to otorhinolaryngologist late. Minor ulcers which are not responding to treatment should refer to otorhinolaryngologist as early as possible to prevent unnecessary morbidity and mortality.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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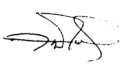
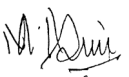
1	Itrat Jawaid	Final approval, Conception, Design, Critical revision, Guarantor.	
2	M. Asim	Guarantor of article, Collector of data, Drafting of article.	
3	Faheem Ahmed Khan	Conception & Design, Analysis & interpretation of data, Drafting for article.	
4	S. Khalid A Ashrafi	Analysis & interpretation of data, Critical revision of article, final approval.	
5	Asif Uddin Abbasi	Drafting of article, Analysis interpretation of data.	
6	Hina Iqbal	Collection & assembly of data, Interpretation of data, Revision.