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A STUDY OF ASSOCIATION OF CLINICAL PROFILE WITH HISTOPATHOLOGY OF ORAL SQUAMOUS CELL CARCINOMA

Dr.S.Selvi[1],Dr. N.Andal[2], Dr.V.Ramya[3], Dr.B.Pushpa[4] and Dr.R.Geetha[5]
[1,3]*(Department Of Pathology, Assistant Professor,Kilpauk Medical College, The Tamilnadu Dr.MGR Medical University, India)*
[2,4]*(Department Of Pathology, Professor, Kilpauk Medical College, The Tamilnadu Dr.MGR Medical University, India)*
[5]*(Department of Pathology, Professor and HOD, Kilpauk Medical College, The Tamilnadu Dr.MGR Medical University, India).*

Abstract: *Oral cancer is one of the most common cancer and constitute a major public health problem. The purpose of the study was to evaluate the clinical profile of patients with oral squamous cell carcinoma for gender, age, primary site and histological grading. Four hundred and five biopsy proven cases of oral squamous cell carcinoma were included in this study. It was conducted over a period of two years from Jan 2015 to Dec 2016 in the Department of Oncology Government Royapettah Hospital, Chennai. The peak incidence was seen in forth and fifth decade of life with male to female ratio was about 2.6:1. Well differentiated squamous cell carcinoma was assigned in 86.2% of cases and most common site of involvement was the lateral border of tongue.*

Keywords: *Oral, tobacco, squamous cell carcinoma,tongue.*

I. Introduction

Oral cancer is one of the ten most common cancer. Its high frequency is in central and south east asian countries has been well documented. In Indian subcontinent a high incidence of oral cancer arise in areas of leukoplakia. Oral cancer includes a group of neoplasm affecting any region of the oral cavity, pharyngeal regions and salivary glands. Oral squamous cell carcinoma represents the most frequent of all oral neoplasms. It is estimated that more of 90% of all oral neoplasms are oral squamous cell carcinoma.[1] Oral cancer have a multifaceted etiology.[2] Severe alcoholism, use of tobacco like cigarettes, smokeless tobacco, betel nut chewing and human papilloma virus(HPV) are the most common risk factors for oral cancer.[3,4] Noted that the lateral margin of the tongue as the most frequent intraoral site. A high incidence of oral cancer, arise in areas of leukoplakia. Regardless of the easy access of oral cavity for clinical examination, oral squamous cell carcinoma usually diagnosed in advance stages. The purpose of the study was to evaluate the clinical profile of patients with oral squamous cell carcinoma.

II. Materials And Methods

A retrospective study of 482 patients with oral cavity lesions was carried out in the Department of Oncology, Government Royapettah Hospital, over a period of Jan 2015 to Dec 2016. A total of 405 cases had squamous cell carcinoma of tongue, followed by buccal mucosa, alveolus, palate, lip and floor of mouth were included using purposive sampling technique and histopathologically confirmed oral carcinoma patients were included in this study. Specimen was collected and histopathological report was done in the department of pathology. Lesions with histological findings that were not compatible with OSCC were excluded from the study. The data pertaining to these patients were included such as age, gender, site of the lesion and histologically grading of tumour. The total sample size was grouped into seven age groups ranging from 21 years to 80 years. [Table 3] A statistical analysis was done on the data collected and the results were formulated.

III. Results

Two hundred and ninety four cases (72.6%) of OSCC were observed in male and one hundred and eleven cases (27.4%) were seen in female with a Male: female ratio of 2.6:1 and with the largest number of OSCCs developing in the fourth and fifth decades of life. Among the 405 cases of OSCC, we found 171 cases (42.2%) involving most commonly the tongue, followed by 144 cases (35.6%) buccal mucosa, 40 cases (9.9%)alveolus,23 cases (5.7%)palate, 21 cases (5.2%) lip and 6 cases (1.4%) affecting floor of the mouth.

When anatomical sites were analyzed, the most commonly affected site was the left lateral border the tongue (91 cases, 53.2%), followed by left side of buccal mucosa (74 cases, 51.3%). When histological grading of the squamous cell carcinoma was compared, we noticed that 349 cases (86.2%) were well-differentiated carcinoma, 39 cases (9.6%) were moderately differentiated squamous cell carcinoma, 15 cases (3.7%) were

poorly differentiated carcinoma and 2 cases (0.5%)were undifferentiated carcinoma.[Table 2] We have noticed that one patient diagnosed with OSCC had a synchronous primary carcinoma in the forehead subcutaneous plane and scalp. Despite small tumor size, regional and distant metastatic disease has developed in 6.7% of patients with tumor less than 1cm size.

IV. Discussion

Squamous cell carcinoma can occur anywhere in the oral cavity, but certain sites are more frequent. The carcinoma of the tongue represents 25% to 50% of all cases of OSCC [5] with the lateral borders being the most commonly affected locations. The mortality from squamous cell carcinoma is dependent on primary site in the mouth, with the lowest mortality from lip and floor of mouth cancer and the highest for cancer of the tongue. Cancers in the oral cavity are almost more likely to be localised at the time of diagnosis.

Gross appearance correlates with the clinical presentation of OSCC. The cut surface of the carcinoma is usually grey white, [Fig 1] sometimes with areas of necrosis and hemorrhage. The tumors vary in size from less than 1cm to 5-6cms.There are two basic histological behaviour either minimally invasive or widely invasive squamous cell carcinoma. Adipose tissue and skeletal muscle has little resistance to local invasion, with the time periosteum and bone cortex are breached, then the marrow is invaded by tumor. Lymph node involvement correlates with tumor size, depth of invasion and primary tumor site. Increased risk of nodal metastases with the more posterior site and tumor grade. Lung, bone and liver are the most common site for distant metastases from OSCC.

The microscopic features are similar to squamous cell carcinoma arising in other mucosal site. Dysplastic squamous epithelium or insitu carcinoma may be seen at the edge of early lesion. Infiltration of the stroma is assessed by an increase in tumour cell size, pleomorphism, irregularity and loss of epithelial stromal junction, stromal desmoplasia and inflammation. High mitotic activity, infiltrative borders, lymphatics and vascular invasion indicates aggressive behaviour. OSCC may be graded according to their degree of differentiation, mitotic activity and other factors. Grade I carcinomas are the most differentiated and Grade III, the least differentiated. The higher the grade the worse is the prognosis. Well differentiated carcinoma form broad bands and nests. The tumor cells have abundant eosinophilic cytoplasm, intercellular bridges and prominent keratinisation either as single cell keratinisation or keratin whorls. [Fig2] Grade II squamous cell carcinoma resembles squamous epithelial cells, but there is less evidence os squamous differentiation and less keratinisation than those in Grade I carcinoma. Grade III has infrequent keratinisation, cellular pleomorphism, increased mitosis, bizarre tumor giant cells and even mitotic spindling are prominent. Otherwise, poorly differentiated squamous cell carcinoma have sheets of uniform cells either small, large or spindle cell type.

Prognosis dependent on several factors, stage of carcinoma, site of primary tumor and histological grade. The stage of oral carcinoma is assigned by using TNM classification. Pathological stage I carcinoma are upto 2cm in greatest diameter. Stage II carcinoma are larger upto 4cm in diameter. Stage III carcinoma are greater than 4cm diameter or have single ipsilateral lymph node involvement, whereas Stage IV carcinoma invades adjacent structures such as soft tissue and cortical bone and exhibit more extensive lymph node involvement. Epidemiology studies have shown that the sites of occurrence for oral cancer differ widely. Tongue, buccal mucosa, alveolus, palate, lip and floor of the mouth are in an ascending order of occurrence of OSCC in the oral cavity.[6,7] The worldwide epidemiological studies done on tongue squamous cell carcinoma.[Table 4] Mehrota et al.[8] found 42.6 %, Agarwal et al [9]found 16.2% and Shenoi et al.[7] found 18.3% cases involving tongue ,while Selvamani et al.[10] found 54 cases (14.1%) involving tongue OSCC in his study. In our study, we found that 171 OSCC cases (42.2%) were involving tongue. This variation could be due to various factors like level of exposure to carcinogens, geographic region set up, socioeconomic status and community awareness.

Albuquerque et al [11] found 59.7% involving lateral borders of the tongue were the most frequent carcinoma. These results are similar to present study results, as we also found a most frequent site to be the lateral border of tongue and accounts for about 42.2%, 171 cases out of 405 studied.

V. Conclusion

Largest number of Oral squamous cell carcinoma noted in the fourth and fifth decades of life with a male to female ratio was 2.6:1. The most common primary site of occurrence of squamous cell carcinoma was the lateral border of tongue followed by buccal mucosa, alveolus, palate, lip and floor of mouth respectively.

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S.NO	SITE	NO OF CASES	PERCENTAGE
1	Tongue	171	42.2%
2	Buccal Mucosa	144	35.6%
3	Alveolus	40	9.9%
4	Palate	23	5.7%
5	Lip	21	5.2%
6	Floor of mouth	6	1.4%
	TOTAL	405	

Table 1: Primary Site Of Oral Squamous Cell Carcinoma N=405

Table 2: Histological Grading Of Squamous Cell Carcinoma Cases Studied N= 405

State Of Differentiation	Number Of Cases	Percentage
Well Differentiated	349	86.2%
Moderately Differentiated	39	9.6%
Poorly Differentiated	15	3.7%
Undifferentiated	2	0.5%
Total	405	

Table 3: Age Distribution Of Patients with Oscc (N%)

AGE GROUP	MALES	FEMALES	TOTAL
21-30 yrs	16 (3.9)	4 (1.0)	20(4.9)
31-40 yrs	41(10.1)	11(2.7)	52(12.8)
41-50 yrs	94 (23.2)	29(7.2)	123(30.4)
51-60 yrs	77 (19.0)	39(9.6)	116(28.6)
61-70 yrs	54 (13.3)	25(6.2)	79(19.5)
71-80 yrs	12 (3.0)	3(0.7)	15(3.7)
TOTAL	294(72.6)	111(27.4)	405 (100)

OSCC- oral squamous cell carcinoma

Table 4: Comparison Of Studies Of Oscc

REFERENCES	(TONGUE) OSCC %	YEAR
Mehrota et al[8]	129 cases (42.6)	2003
Agarwal et al[9]	18 cases (16.2)	2011
Shenoi et al[7]	54 cases (18.3)	2012
Selvamani et al[10]	54 cases (14.1)	2014
Present study	171 cases (42.2)	2017

Fig 1; Gross Picture -Carcinoma Tongue- involving left lateral border

Fig 2- Hpex10- Well Differentiated Squamous Cell Carcinoma