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"Oral cancer claws clutching the youth" A study of oral cancers at a tertiary care center in central India

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Abstract
Squamous cell carcinoma accounts for 90% of all oral cancers. It may affect any anatomical site in the mouth, but most commonly the tongue and the floor of the mouth. The use of tobacco and betel nut, alcoholic beverages and a diet low in fresh fruits and vegetables are well known risk factors for oral squamous cell carcinoma. Important risk factors related to the carcinoma itself that are associated with a poor prognosis include large size of the tumour at the time of diagnosis, the presence of metastases in regional lymph nodes, and a deep invasive front of the tumour. It usually arises from a pre-existing potentially malignant lesion, and occasionally de novo; but in either case from within a field of pre-cancerized epithelium. It can be attributed to the fact that about two-thirds of persons with oral squamous cell carcinoma already have a large lesion at the time of diagnosis. In the present study we analyzed 100 cases diagnosed as oral squamous cell carcinoma. The most common lesion diagnosed was well differentiated keratinizing quamous cell carcinoma, with buccal mucosa being the most common site affecting predominantly the patients of 30-39 years of age.

Keywords: Oral squamous cell carcinoma, metastasis, tumor

Introduction
Oral cancer can form in any part of the mouth. Most oral cancers begin in the flat cells that cover the surfaces of your mouth, tongue, and lips. Anyone can get oral cancer, but the risk is higher if you are male, use tobacco, drink lots of alcohol, have HPV, or have a history of head or neck cancer. Frequent sun exposure is also a risk factor for lip cancer. Symptoms of oral cancer include white or red patches in mouth, a mouth sore that won't heal, bleeding in mouth, loose teeth, problems or pain with swallowing, a lump in neck or an ear ache.
Tests to diagnose oral cancer include a physical exam, endoscopy, biopsy, and imaging tests. Oral cancer treatments may include surgery, radiation therapy, and chemotherapy. Some patients have a combination of treatments.
The study of the oral cavity is important to identify the pathologies associated with it [1]. Tumor in Latin means *lump* [2]. The tumor or neoplasm serves no useful purpose. Fundamental to its origin, there is loss of responsiveness to the normal growth control. Epidemiological studies have shown that in the United States, over 500,000 deaths are caused every year because of malignant neoplasms. India, which occupies 2.4% of the world's land mass, accommodating about 16.5% of the world population, is estimated to have 6 million cancer patients at any point of time and nearly 2 million new cases every year, which is a major cause of death [3]. Even more anguishing than the mortality is the physical and the emotional trauma caused by these neoplasms. Controlling this dreadful surge is based on learning more about the origin and vulnerabilities of neoplasms. It has led to a great progress in this field [4].
Oral cancer is a highly relevant problem of global public health, especially for dental surgeons. It is located within the top 10 ranking incidence of cancers and despite the progress in research and therapy, survival has not improved significantly in the last years, representing a continuing challenge for biomedical science.
A large percentage of populations have uses both smoked and smokeless tobacco together [5, 6].
In a study conducted by Vora *et al*. alcohol, tobacco, and paan use and its relation to oral cancer threat among Asian males in Leicester, it was found that 7% of first-generation Hindu

males chewed paan containing tobacco that is strongly associated with oral cancer [7].

Materials and methods

This retrospective study was conducted for 1.5 years from Dec. 2016-May 2017 in Histopathology section of Department of Pathology, Gajra Raja Medical College, Gwalior. The records of data of 100 patients, who were diagnosed as having oral cancer, were retrieved, compiled and summarized using frequency distribution and percentage proportion.

Results

Table no1, 2, 3, 4 shows the age group wise distribution, site and type of lesion diagnosed at our centre.

Table 1: Site of lesion

S. no	Site Of Lesion	Number Of Cases	Percentage
1.	Buccal Mucosa	44	44
2.	Tongue	24	24
3.	Retromolar Trigone	23	23
4.	Cheek	03	03
5.	Vallecula	02	02
6.	Lip	04	04

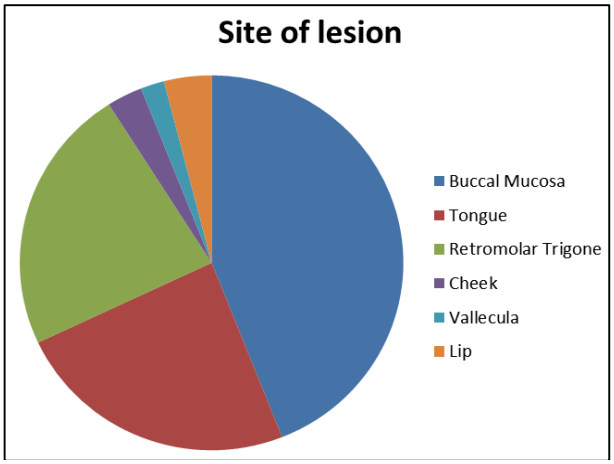


Table 2: Male Female preponderance

S. no	Gender	Number Of Cases	Percentage
1.	Male	81	81
2.	Female	19	19

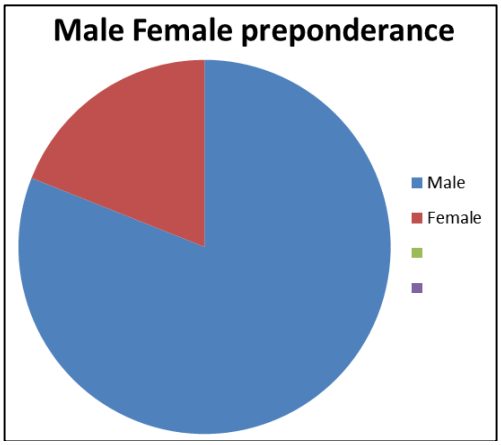


Table 3: Histopathological diagnosis of the cases

S. no	Diagnosis	Number Of Cases	Percentage
1.	Well Differentiated Keratinizing Squamous Cell Carcinoma	59	59
2.	Moderately Differentiated Keratinizing Squamous Cell Carcinoma	32	32
3.	Poorly Differentiated Non Keratinizing Squamous Cell Carcinoma	09	09

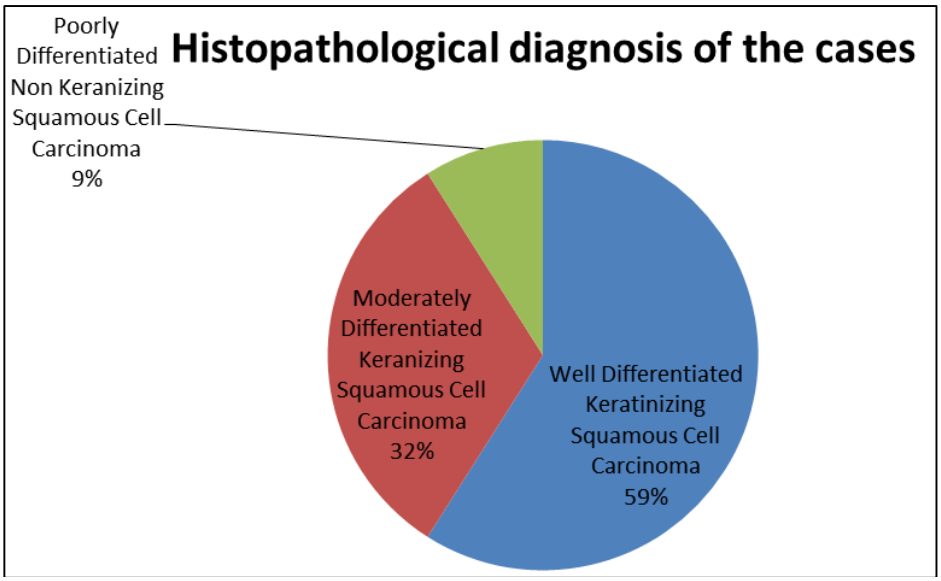
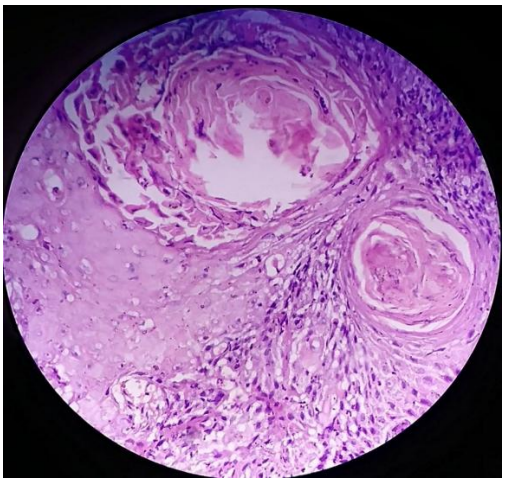


Table 4: Age group wise distribution

S. no	Age Group (in years)	Number Of Cases	Percentage
1.	<20	01	01
2.	20-29	10	10
3.	30-39	30	30
4.	40-49	28	28
5.	50-59	15	15
6.	≥60	16	16



Microscopic picture of Well differentiated Keratinizing Squamous cell carcinoma in Buccal Mucosa (H&E X40x)

Discussion

The Oral Squamous Cell Carcinoma (OSCC) is derived from an epithelial dysplasia, characterized by a neoplastic proliferation mechanism which destroys subepithelial basement membrane locally [8]. The ability to metastasize is directly associated with the degree of tumor differentiation of the cancer cells [8]. The International Classification of Tumors of the WHO classifies oral cancers as well differentiated tumors, moderately differentiated and poorly or undifferentiated [9]. Another frequently studied histological feature is the invasion (degree of cohesion between invading cancer cells), which is measured as a good prognostic factor in OSCC [10]. The atypical subtype included most of the HPV-positive cases being positive for Biomarker for Head and Neck Squamous Cell Carcinoma (HNSCC) [11]. These subtypes-added to HPV infection status- have been validated using independent datasets in The Genome Cancer Atlas (TGCA) reports [12].

The incidence of Oral Carcinoma varied greatly from 0.5/100,000 in Syria [13] to 10/100,000 in the Southern parts in Saudi Arabia [14] with great regional variations among Saudi population in the same study. Two studies from Saudi Arabia [14] and Yemen [15] found a higher prevalence of Oral Carcinoma among females. Furthermore, in Sudan, a high presentation of overlapping lesions that exceeded one anatomical area to invade the adjacent one was observed [16]. Oropharynx was associated with the highest distribution of lesions among Arabs population residing in Israel [17]. The clinical features of oral Cancer were documented by some studies; swelling and/or ulceration were the most common clinical symptoms among Oral Cancer patients [18]. White mucosal patches and lumps were less frequently encountered [19].

In the present study the commononest site of oral squamous cell carcinoma was buccal mucosa followed by tongue, retromolar trigone, cheek, vallecula and lip. Males showed

predominance of oral cancer than females. The most common diagnostic lesion was well differentiated keratinizing squamous cell carcinoma, followed by moderately and poorly differentiated non keratinizing type. The most common age group prone to oral cancer was 30-39 years and least was less than 20 years, with a male preponderance. In our study group the youngest patient was 16 years old and the eldest was 75 years old males. The youngest patient did not report any history of smoking or drinking. OSCC can occur even at a young age and must be considered in the differential diagnosis of the suspicious lesion even in young patients [20]. 41 out of 100 cases in our study were in patients less than 40years of age,a matter of concern.

Some authors consider the lesion to be particularly aggressive in the young, thus having a worse prognosis when compared to that of older patients. Some studies have shown that young patients tend to present a greater locoregional recurrence rate and smaller survival rate, [21, 22].

A careful history taking helps to generate a complete differential diagnosis and all diagnostic possibilities are considered prior to establishing a definitive diagnosis. In addition, history also provides estimates of prognosis and aids in the treatment selection. The extent and severity of the disease process are assessed by determining the duration, type, and rate of progression of symptoms, and the functional impairment experienced by the patient also helps us in identifying specific co-morbidity.

Conclusion

Regardless of advances in cancer treatment, the survival rates of patients suffering from head and neck cancer has not improved significantly. Old Habits Die Hard. More stress should be placed on education programmes to the public so that they don't adopt the habit of smoking. Passive Smoking danger has to be emphasized mainly in families. These findings suggest that the key to prevent oral cancer is to educate the mass in the primary level to quit the etiological factors. Mortality and morbidity of oral cancer can be considerably reduced if detected in early stages.

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