

MOST COMMON SITE OF SQUAMOUS CELL CARCINOMA IN PATIENTS VISITING SAVEETHA DENTAL COLLEGE

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ABSTRACT:

Background and aim: Oral squamous cell carcinoma (OSCC) is the most common oral malignancy, representing up to 80-90% of all malignant neoplasms of the oral cavity. Although oral cancer incidence is highly variable worldwide, it is accepted that oral cavity ranges from the 6th to the 9th most common anatomical location for cancer, depending mostly on the country (and even specific region in some countries) and gender of the patients

Methodology: This is a retrospective clinical study carried out at Saveetha Dental College, Chennai. This study involves analysis of the most common site of squamous cell carcinoma. The data were taken over a period of 2 years from June 2019 to February 2021. The sample/data were retrieved based on age, site of squamous cell carcinoma, gender. The extracted data were tabulated in MS Excel sheets and were subjected to statistical analysis using SPSS software.

Results: According to the study the most common age group affected with squamous cell carcinoma is 46-55 years (45.45%), followed by 36-45 years (22.73%), followed by 66-85 years (13.64%).

Conclusion: Within the limits of the study, the most common age group affected with squamous cell carcinoma is 46-55 years.

Keywords: innovative technology, novel method, squamous cell carcinoma, malignant, neoplasm, TNM staging.

INTRODUCTION:

Cancers of the oral cavity may involve any single one of these specialized types of tissue or more than one (1). As noted, tissues in this area include bone, teeth, muscle, nerves, a rich supply of blood vessels, numerous salivary glands, and the specialized lining called mucosa (2,3). Although tumors may arise in any of these types of tissues they are most commonly related to changes in the lining of the mouth. The most common cancer of the oral cavity is called squamous cell carcinoma and arises from the lining of the oral cavity (4). Over 95 percent of oral cavity cancers are squamous cell carcinomas and these cancers are further subdivided by how closely they resemble normal lining cells: well differentiated, moderately differentiated and poorly differentiated. The vast majority of oral cancers are squamous cell carcinomas (SCCa) (5). They account for more than 90% of all oral malignant lesions. These lesions are thought to result from multiple genetic alterations that affect cell growth regulation (6). These alterations may be genetically determined or caused by prolonged exposure to environmental factors such as tobacco and alcohol (7,8). Other malignancies that may arise in this area include lymphomas, sarcomas and minor salivary gland tumours (9). Oral squamous cell carcinoma (OSCC) is the most common oral malignancy, representing up to 80-90% of all malignant neoplasms of the oral cavity (10). Although oral cancer incidence is highly variable worldwide, it is accepted that oral cavity ranges from the 6th to the 9th most common anatomical location for cancer, depending mostly on the country (and even specific region in some countries) and gender of the patients (11-14). Oral cancer includes a group of neoplasms affecting any region of the oral cavity, pharyngeal regions and salivary glands. However, this term tends to be used interchangeably with oral squamous cell carcinoma (OSCC), which represents the most frequent of all oral neoplasms. It is estimated that more than 90% of all oral neoplasms are OSCC (15-19). One of the real dangers of this neoplasm is that in its early stages, it can go unnoticed. Usually at the initial stages it is painless but may develop a burning sensation or pain when it is advanced. Common sites for OSCC to develop are on the tongue, lips and floor of the mouth. Some OSCCs arise in apparently normal mucosa, but others are preceded by clinically obvious premalignant lesions, especially erythroplakia and leukoplakia. Usually, OSCC presents as an ulcer with fissuring or raised exophytic margins. It may also present as a lump, as a red lesion (erythroplakia), as a white or mixed white and red lesion, as a non-healing extraction socket or as a cervical lymph node enlargement, characterized by hardness or fixation. OSCC should be considered where any of these

features persist for more than two weeks. Our team has extensive knowledge and research experience that has translate into high quality publications(20),(21),(22),(23),(24–33)(34),(35–37).(38,39)

MATERIAL AND METHODS:

This is a retrospective clinical study, carried out at Saveetha Dental College. This study involves analysing the most common site of squamous cell carcinoma visiting in Saveetha Dental College that was taken over a period of 2 year, from June 2019 to March 2021. Ethical Approval was obtained from the Institutional Review Board. The data was cross verified by 2 examiners. The data were retrieved and examined to assess the micro esthetics in patients reporting for orthodontics treatment.

INCLUSION CRITERIA:

- Age
- Gender
- Site
- The patient diagnosed with squamous cell carcinoma

EXCLUSION CRITERIA:

- An incomplete record in the system.

A total of 66 patients in which sampling bias was minimized with the verification of photos and cross-verification, selected and data were collected and assessed for age, gender, site of squamous cell carcinoma. Oral cavity cancers are classified into the following subsites : (1) buccal mucosa; (2) upper alveolus and gingival; (3) lower alveolus and gingival; (4) hard palate; (5) tongue; and (6) floor of mouth. Collected data was tabulated in the excel sheet. The data was imported and transcribed in the statistical analyses package for social sciences version 23(SPSS) IBM corporation. Chi square test was done. Analysis was based on quantitative variables and frequencies for categorical variables. P value less than 0.05 was considered to be statistically significant.

RESULTS AND DISCUSSION:

The vast majority of oral cancers are squamous cell carcinomas (SCCa). They account for more than 90% of all oral malignant lesions. These lesions are thought to result from multiple genetic alterations that affect cell growth regulation. These alterations may be genetically determined or caused by prolonged exposure to environmental factors such as tobacco and alcohol. According to the study 71.21% of patients are male and 28.79% female (FIG 1). According to the most common site for squamous cell carcinoma is lateral border of the tongue (34.85%), followed by buccal mucosa (33.33%), followed by hard palate (16.57%), followed by floor of the mouth and upper alveolar and gingiva (6.06%) (FIG 2), followed by lower alveolar and gingiva, which is constant with previous study(40)(41). The buccal mucosa is the mucosa that lines the inner surface of the lips and cheeks. Buccal SCCa are usually low grade cancers and are most commonly found in the lateral walls of the buccal cavity. These lesions spread along the submucosal surface and may eventually involve skin. Primary malignant tumours of the hard palate are rare. The hard palate has one of the highest concentrations of minor salivary glands in the upper aerodigestive tract. It is therefore not surprising that a large number of malignant neoplasms in this location are tumours of salivary gland origin (adenoid cystic carcinoma and mucoepidermoid carcinoma). Nearly all tongue tumours occur on the lateral and undersurface. Tumours tend to remain in the tongue but show well defined routes of infiltration in neglected cases. Anterior third tumours invade the floor of the mouth. Middle-third lesions invade the musculature of the tongue and subsequently floor of the mouth. Floor of the mouth SCCa most commonly arise within 2 cm of the anterior midline. These carcinomas spread in a manner predictable by the anatomic location of the floor of the mouth.

According to the study, the most common age group affected with squamous cell carcinoma is 46-55 years (45.45%), followed by 36-45 years (22.73%), followed by 66-85 years (13.64%) and 20-35 years (7.58%) (FIG 3), which is constant with previous (41). According to the study the most common site for male patients was lateral border of the tongue (24.24%) and the most common site for females was buccal mucosa (12.12%), followed by lateral border of the tongue (10.61%) (FIG 4), which is constant with previous literature (1).

CONCLUSION:

Within the limits of the study, the tumors in males mostly affected the border of tongue, floor of mouth/ventral tongue and alveolar mucosa/gingiva, while they were more frequent on the buccal mucosa/buccal sulcus in females. OSSC is mostly seen in male than females. The clinical relevance of the included studies, and the lack of adequate comparable studies, the applications of the current study's results should be considered with caution. On the basis of this study, there is a need for more evidence-based research in the area of the most common site for squamous cell carcinoma. Dentists and health workers should give more emphasis on this by performing oral cancer screening, raising levels of knowledge, and rectifying misconceptions about oral cancer.

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CONFLICT OF INTEREST:

None declared.

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GRAPHS:

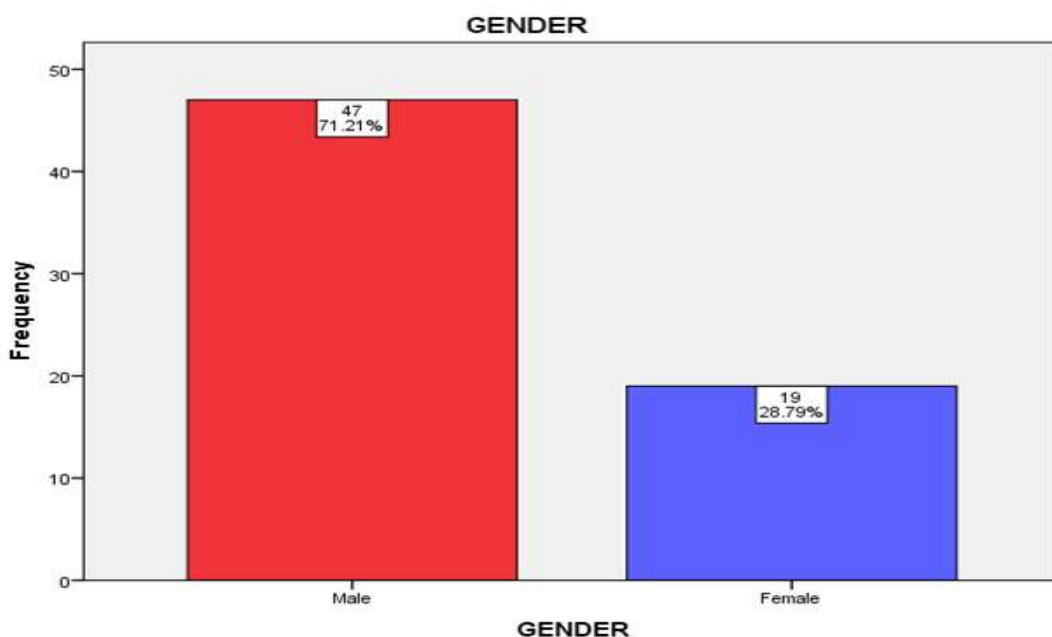


FIG 1: The bar graph shows the distribution of gender, 71.21% Male and 28.79% Female where red denotes Male and blue denotes Female.

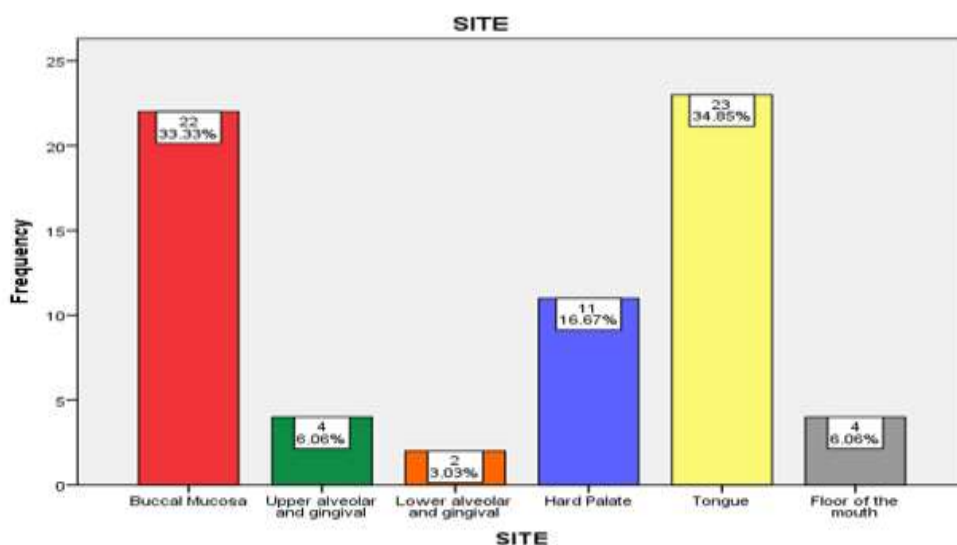


FIG 2: Bar graph depicting the subsite of oral cancer among patients visiting the dental college. Y-axis represents the frequency of oral cancer patients over a year and X-axis represents the subsite of oral cancer, where red denotes Buccal mucosa (33.33%), Green denotes Upper alveolar and gingiva (6.06%), Orange denotes lower alveolar and gingiva, Blue denotes hard palate (16.67%), Yellow denotes tongue (34.85%) and grey denotes floor of the mouth (6.06%).

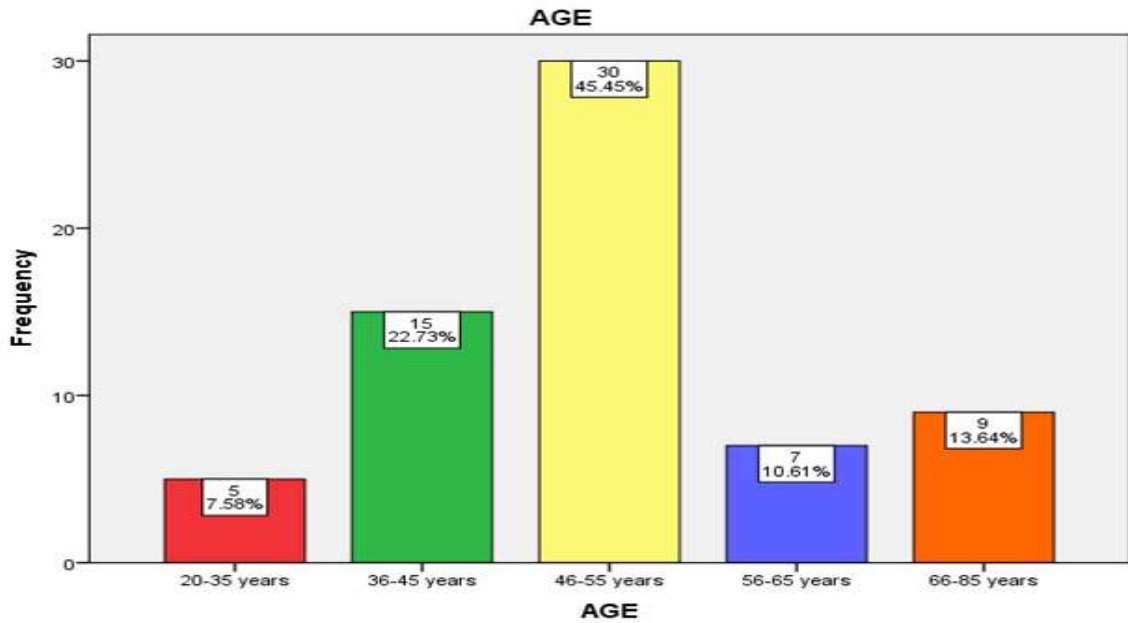


FIG 3: The bar graph shows the distribution of age, where age group 20-35 years - 7.58% (RED), age group 36-45 years - 22.73% (GREEN), age group 46-55 years- 45.45% (YELLOW), age group 56-65 years- 10.61% (BLUE), age group 66-85 years-13.64% (ORANGE).

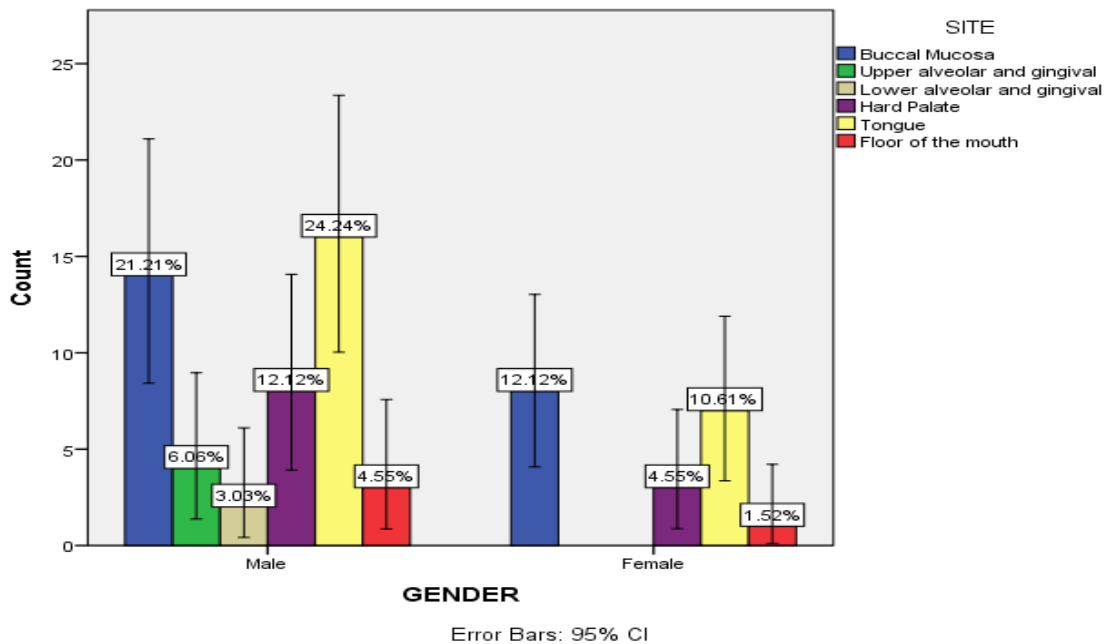


FIG 4: The error bar graph represents the association between the gender and site of squamous cell carcinoma. X axis represents gender and Y axis represents the percentage of tooth shape. Chi square test was done and the association was found to be significant. Pearson's Chi Square value : 3.112, df : 5 ; p-value = 0.683 (> 0.05), hence statistically not significant.

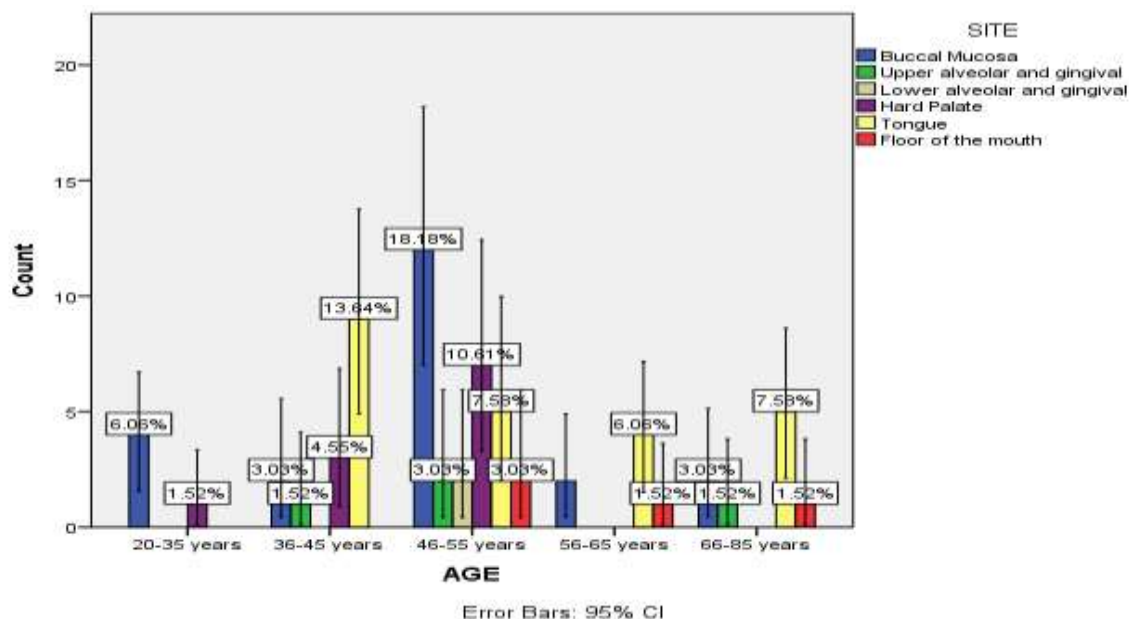


FIG 5: The error bar graph represents the association between the age and site of squamous cell carcinoma. X axis represents gender and Y axis represents the percentage of tooth shape. Chi square test was done and the association was found to be significant. Pearson's Chi Square value : 24.788, df : 20 ; p-value = 0.210 (> 0.05), hence statistically not significant.

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