

# A Recurrent Case of Oral Squamous Cell Carcinoma

Hemalatha V.T<sup>1</sup>, Sindhu P<sup>2</sup>

<sup>1</sup>Assistant Professor, <sup>2</sup>Post Graduate, Department of Oral Medicine and Radiology, Sree Balaji Dental College and Hospital, BIHER

## Abstract

More than 90% of all oral cancer is Oral Squamous cell carcinoma. Exposure to environmental factors such as tobacco, betel quid and areca nut in combination with genetic predisposition leads to gene mutations and carcinogenesis. They often manifest as ulcerated exophytic masses or tumor in the oral cavity. A combination of surgical procedure, radiotherapy and chemotherapy is implemented in the management of Oral Squamous cell carcinoma. However it is associated with high rate of recurrence which may be more aggressive and invasive in nature. This article discusses a case of recurrent oral Squamous cell carcinoma, its manifestation and therapeutic approach.

**Keywords:** Oral Squamous cell carcinoma, recurrence, gene mutations, carcinogenesis.

## Introduction

“A mass of tissue formed as a result of abnormal, excessive, uncoordinated, autonomous and purposeless proliferation of cells even after cessation of stimulus for growth which caused it” is termed as Neoplasm. Such conditions when affecting the oral cavity, salivary glands, pharyngeal region fall under the category Oral Cancer. In India, more than 90% of all oral cancer is Oral Squamous cell carcinoma<sup>[1]</sup>.

The international agency for research on cancer predicted that India’s incidence of cancer will increase from 1 million in 2012 to more than 1.7 million in 2035. The lifetime risk for mortality from cancer in India for both males and females is 61%. Every one hour about 5 people die every day in India because of oral cancer and the same number of people dies from cancer in oropharynx and hypo pharynx<sup>[2, 3]</sup>.

Tobacco use in both smoke or smokeless form and alcohol are the leading risk factors that play a role in etiopathogenesis of oral cancer. Every year 1.3 million deaths are attributable to tobacco use in South-East Asia region<sup>[4]</sup>. Betel quid and areca nut chewing are also other contributing factors. Gene mutation and impaired ability to repair such DNA damage gives rise to oral cancer<sup>[5]</sup>. Further, patients with the following conditions are highly susceptible to developing oral Squamous cell

carcinoma:

- HIV affected individuals
- Other viral infections: Human Papilloma Virus<sup>[5]</sup>, Epstein Barr virus, Hepatitis C virus
- Precancerous disorders like leukoplakia, erythroplakia, oral submucous fibrosis etc.
- Individuals with genetic predisposition of cancer.
- Ultraviolet or ionizing radiation exposure

Exposure to environmental factors such as tobacco, betel quid and areca nut in combination with genetic predisposition leads to multiple molecular events and genetic damage<sup>[1, 6]</sup>. Such chronic exposure leads to DNA damage and genetic mutations. Excessive activation and amplification of oncogenes along with inhibition of tumor suppressor genes lead to autonomous cell proliferation<sup>[7]</sup>.

Ulcerated exophytic masses and tumors are the clinical manifestations. Buccal mucosa is the common site of involvement in south-east Asia. Other sites of involvement are tongue, floor of the mouth, ventral surface of tongue, alveolar mucosa, gingiva and lower lip. About 80% of patients exhibit cervical lymph node

metastasis [1, 8].

The therapeutic approach for the initial stages include surgical excision along with radiotherapy and a combination of surgical procedure, radiotherapy and chemotherapy is implemented in the late stages of oral Squamous cell carcinoma. The overall survival rate decreases as the carcinoma stage increases, from 75 to 90% for Stage I to 10–22% for Stage IV. The present treatments improve the quality of life of oral cancer patients but the overall survival rate of 5 years has not improved in the past decades [8, 9].

Oral Squamous cell carcinoma is associated with high rate of recurrence which may be more aggressive and invasive in nature. The primary site of tumor, thickness, cell differentiation, nodal involvement and surgical margins dictate the prognosis of tumor. About 1/3<sup>rd</sup> of the patients experience with recurrence which is highly unpredictable.

Cervical lymph node metastasis, extra-capsular spread and histological status of surgical site margin are the predictive factors for recurrence. In spite of advanced therapy such patients exhibit very low survival rate [10].

### Case Presentation

A 38 year old male patient reported to the Department of Oral Medicine and Radiology with a complaint of ulcer like lesion in the lower left jaw and neck region along with watery pus discharge for the past one month. Patient gave no history of diabetes, hypertension or any other medical disorder. On recording detailed history patient revealed a small ulcer that developed on the left buccal mucosa before two years and biopsy was performed for the same. Histopathological report revealed a well differentiated Oral Squamous cell carcinoma and combination of therapy was provided to the patient. Radiotherapy was initiated followed by surgical excision of the lesion and skin graft was placed in the left buccal mucosa region. Left modified radical neck dissection was performed and pathological staging was pT1/N3b/Mx (Stage IV B). Patient had received chemotherapy and was under follow up. However patient started to develop a ulcerated lesion in the chin and left side of neck region along with pus discharge for the past one month. The pain was sharp and continuous in nature. Patient had habit of cigarette smoking (8 per

day) for eight years and had quit for the past two years.

Extra-oral examination revealed a solitary ulcerative lesion on the left lower border of mandible, roughly oval in shape and approximately 2 × 3 cm in size with an erythematous, indurated base and everted margins. Another solitary ulcer approximately 2 × 2 cm in size was present in the mid-line neck region. Both the ulcers revealed pus discharge.

Intra-orally a graft is evident in the posterior left buccal mucosa along with hair follicles, measuring approximately 5 × 3 cm in size. The graft extends from the upper to lower gingivobuccal sulcus and well into the retromolar region.



**FIGURE 2: Malignant Ulcer in left lower border of mandible**



**FIGURE 3: Thigh flap placed in left posterior buccal mucosa.**



## Discussion

Cause of OSCC in this patient could be related to his tobacco history (Cigarette smoking) along with possible genetic factors. The patient had reported for treatment in the late stages of oral cancer (Stage IV B). Patient was subjected to combined treatment approach: chemotherapy, radiotherapy and left modified radical neck dissection. The reason behind recurrence in this case was cervical node metastasis, perineural invasion and extensive infiltration of tumor cells. Current management strategies involve surgery combined with radiotherapy or adjuvant concomitant chemotherapy. Taxanes, anthracyclines, platinum and antimetabolites are the common chemotherapy drugs used for advanced oral cancer. Patients with recurrence are usually evaluated for surgery or re-irradiation and when they are not potential candidates for the procedure, chemotherapy is the treatment of choice. Recent combination of drugs though administered does not significantly improve the disease prognosis. Mechanism of drug resistance at the tumor microenvironment and cellular level is major limitation in chemotherapy. Recurrent cases often develop cross-resistance to a wide range of unrelated drugs. Further research in biological and molecular mechanisms of carcinogenesis will help in development of specific targeted therapies [8].

## Conclusion

Patients diagnosed with Oral Squamous cell carcinoma at the late stages undergo significant morbidity and mortality. Surgical excision of the lesion, chemotherapy and radiotherapy are the conventional therapeutic approach for Oral Squamous cell carcinoma. However surgical dissection leads to significant disfigurement of face and reduces quality of life. Induction chemotherapy and adjuvant concomitant chemotherapy helps improve the survival rate. Patient

awareness, early diagnosis of the disease, targeted therapies will help improve the disease prognosis and survival rate.

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