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# Early Invasive Squamous Cell Carcinoma of the Tongue - A Case Report

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**Abstract: Oral cancer is the sixth most common cancer for both sexes in the general population. The lateral border, the ventral surface of the tongue and the lips are the most commonly affected areas, followed by floor of the mouth , the gingiva, the alveolar mucosa and the palate. Oral Squamous cell carcinoma (OSCC) occurs more frequently in men than in women and usually around 60yrs of age. The prognosis for OSCC depends in large measure, on the site involved, the clinical stage at the time of diagnosis, the width of the tumor at its greatest diameter, the patients access to adequate health care, and patients ability to cope and mount an immunologic response.**

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## Introduction

Oral cancer is the sixth most common cancer for both sexes in the general population. Squamous cell carcinoma is defined as "a malignant epithelial neoplasm exhibiting squamous differentiation as characterized by the formation of keratin and/ or the presence of intercellular bridges"(Pindborg J.J,et.al.1977)[1].It is the most common neoplasm of the oral cavity. Although it may occur at any intraoral site, certain sites are more frequently involved than others. The lateral border, the ventral surface of the tongue and the lips are the most commonly affected areas, followed by floor of the mouth , the gingiva , the alveolar mucosa and the palate[2]. Oral squamous cell carcinoma (OSCC) occurs more frequently in men than in women and usually around 60yrs of age[3]. Clinically, almost all oral cancers, except those in the earliest stages have two very characterstic features in the form of ulceration and an indurated margin.

## Case Report

A 32 yrs old male patient reported with the complaint of ulcer on right side of the tongue associated with pain .One yr back, patient noticed trauma to right side of tongue from lower right teeth. Patient went to dentist and underwent biopsy twice in one year duration which was diagnosed as epithelial hyperplasia. Patient had habit of Gutka chewing, 1-2 packets for last 10 yrs.

**Figure 1: Intraoral view showing an ulcer on lateral border of tongue**

On intraoral examination an ulcerative growth was seen on right lateral border of tongue 1x1x1 cm ,irregular in shape with indurated and raised margins. (Figure 1).

An incisional biopsy was done & soft tissue mass measuring 6mm X 2mm, irregular in shape, creamish white in colour was received. Incisional biopsy revealed (Fig 2) hyperplastic stratified squamous epithelium with its basal end proliferating and pushing downwards as large islands. (Fig 3) A part of these large islands showed cellular and nuclear pleomorphism with enlarged hyperchromatic nuclei. The epithelium around these areas were showing loss of cohesiveness and nucleoli count was abnormal, some showing 6-7 nucleoli. The connective tissue was very minimal in the given section.

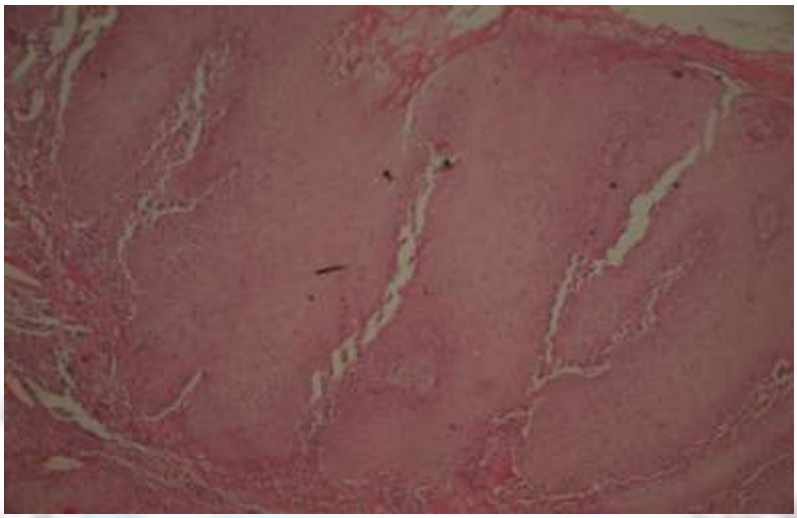

**Fig 2: H & E 10X Showing Hyperplastic Epithelium with bulbous rete ridges**

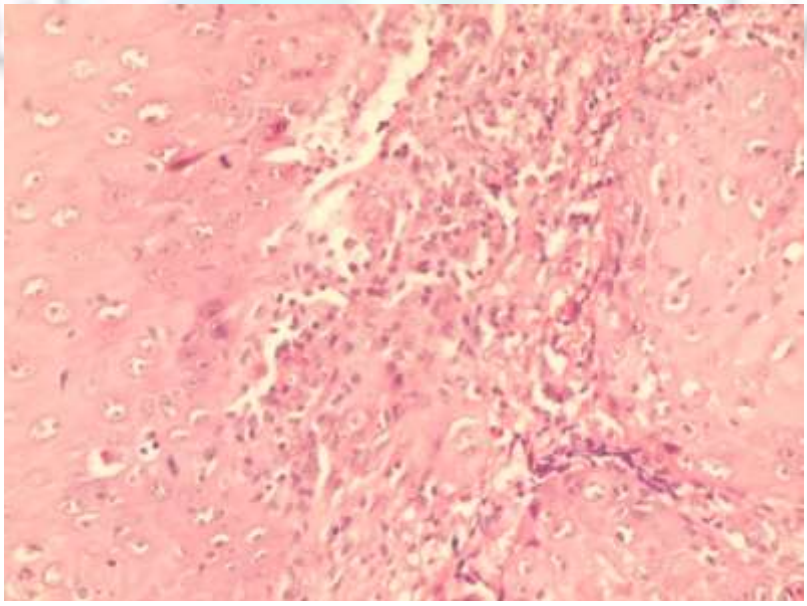

**Fig 3: H& E 40X view showing nuclear pleomorphism with enlarged hyperchromatic nuclei**

The features were suggestive of Severe Epithelial Dysplasia. The patient then underwent excision of the lesion with a margin of 8mm normal tissue, specimen measuring 1.5X 1.5 cm irregular in shape, white superior surface & brownish inferior surface was received from the excisional biopsy. The section showed epithelial cells arranged in the form of islands & sheets in the connective tissue stroma. Epithelial cells were showing various dysplastic features such as cellular & nuclear pleomorphism, increase in the number of nucleoli & prominent nucleoli. Also the formation of small & large keratin pearls was evident within the epithelial islands.Numerous engorged feeder ducts were seen in the stroma & also a

dense chronic inflammatory cell infiltrate was seen. Invasion was seen up to the muscle tissue. The margin of the tumor showed certain dysplastic features such as increase in number of nucleoli & prominent nucleoli. Tumor free margin was evident at three high power fields from the site of invasion.

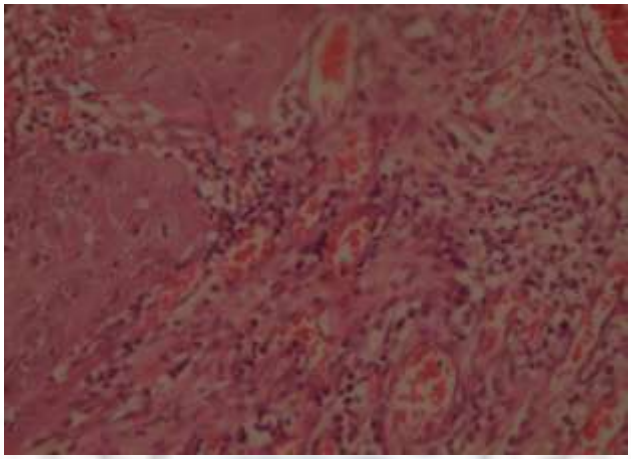

**Fig 4: H& E 40X view showing invasion in the form of epithelial strands**

The diagnosis of Early Invasive Squamous Cell Carcinoma of the Tongue with margins free from invasion was given.

## Discussion

Squamous cell carcinoma represents about 90% of oral cancers and accounts for 3-5% of all cancers. Incidence of tongue cancer in India is second highest in the world[4]. About half of the patients afflicted die within five years of diagnosis, while surviving patients may be left with severe esthetic and/or functional compromise[5].

Oral squamous cell carcinoma (OSCC) typically occurs in elderly men during the fifth to eighth decades of life. The incidence of OSCC in young adults accounts for 0.4 to 3.6% of all cases of this disease[2]. The risk of intraoral cancer increases with increasing age with a male preponderance. Our case was seen in younger age group.

The most common site of intraoral carcinoma involvement is the tongue, usually the postero lateral and ventral surfaces[6]. In our patient the site of involvement was similar. The lateral borders and base of the tongue are the most 'cancer-prone' areas and, along with the floor of the mouth, make up the common intraoral sites for cancer in most populations. It has been suggested that this site predilection for intraoral cancer is due to the pooling of carcinogens in saliva in these food channels and reservoirs (Chen et al, 1990) or 'gutter zones' (Johnson and Warnakulasuriya, 1993). This theory has been referred to as Lederman's hypothesis [2].

The cause of oral OSSC is believed to be multifactorial. Extrinsic factors implicated are, tobacco smoke, alcohol, syphilis, poor oral hygiene and sunlight (vermilion cancers only). Intrinsic factors include systemic or generalized disorders such as malnutrition, general resistance and iron-deficiency anemia[6]. In our case we observed, history of tobacco intake with exclusion of other etiological factors mentioned above. Constant trauma from the adjacent teeth to the site was evident. In a study by Gibbel, around 4.8% of the lingual carcinomas occurred in juxtaposition to ill fitting dentures, carious teeth, thus stressing the role of trauma as a risk factor[13], but any recent study does not support such hypothesis.

Tobacco and alcohol are the two most important known risk factors for the development of oral cancer. In the present case also, the patient was a habitual gutkha chewer.

The risk of OSCC from long-term SLT use is elevated for some products, and much of this risk has been attributed to the presence of TSNAs. There are four principal compounds: N-nitrosonornicotine (NNN), 4-methyl-N-nitrosamino-1-(3-pyridyl)-1-butanone (NNK), N-nitrosoanatabine (NAT), and N-nitrosoanabasine (NAB). Only two TSNAs, NNN and NNK, are considered to be potential carcinogens[7]. Continuous local irritation by pan masala, gutkha or areca nut can lead to injury-related chronic inflammation, oxidative stress and cytokine production. Oxidative stress and subsequent Reactive Oxygen Specimen (ROS) generation can induce cell proliferation, cell senescence or apoptosis, depending upon the level of

ROS production. During chronic exposure, these events can lead to preneoplastic lesions in the oral cavity and subsequently to malignancy[8].

Family history of head and neck cancer can be attributed as another risk factor for oral cancer. It has been suggested that the ability to repair DNA damaged by tobacco carcinogens, such as benzo-[a]-pyrene diol epoxide, is defective in some patients with head and neck cancer. Some patients might show an increased susceptibility to chromosome damage by mutagens[9].Family history was positive in distant relative.

Lymph node metastasis occurs with greater frequency in the tongue[1]. The entire cervical chain of nodes may eventually become involved[13]. Cervical lymph node metastasis was found in 35.6% of T1 and T2 tumours and 62.35% of T3 and T4 tumours[14].In addition to cervical lymphnode metastasis distant metastasis is seen in 14.5% of cases[13].

The prognosis for OSCC depends in large measure, on the site involved, the clinical stage at the time of diagnosis, the width of the tumor at its greatest diameter, the patients access to adequate health care, and patients ability to cope and mount an immunologic response. The lesion was initially diagnosed by previous physicians as a epithelial hyperplasia but was confirmed as OSCC on histopathologic evaluation. Early lesions are often asyptomatic and slow growing. An early diagnosis would lead to better prognosis.

## Conclusions

This case was previously misdiagnosed as epithelial hyperplasia which was probably due to choosing incorrect site for biopsy, thus in case of small ulcers like these, proper care should be given to select the representative site for biopsy. In young patients with OSCC, the search for predisposing factors should assign greater weight to familial antecedents of malignant neoplasm. This is important to save time & ensure early treatment which improves the prognosis in especially younger patient like in the present case.

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