

## **Squamous cell carcinoma of tongue in an adolescent: Case Report and review of literature**

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**Abstract:** Squamous cell carcinoma (SCC) of the tongue is an uncommon clinical entity among the children and teenagers. Most commonly, squamous cell carcinoma of the head & neck presents during the fifth and sixth decade of life in patients with a long history of tobacco and alcohol use. At our center, we diagnosed SCC of tongue (Stage III) in 13-year boy who was on anti-Koch's therapy. He received 6 cycles of chemotherapy without any adverse effects. But 2 months after completion of chemotherapy, he died due to multi-organ failure because of extensive distant metastasis. The rarity of this lesion in young patients implies that clinicians might not include it in the differential diagnosis. In general, carcinoma of the oral cavity in young people is reported to be particularly aggressive and carry a poor prognosis.

**Keywords:** Squamous cell carcinoma, Tongue, adolescent, chemotherapy.

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### **INTRODUCTION**

Squamous cell carcinoma (SCC) represents about 90-95% of all malignancies of the oral cavity. Mainly it is seen in the tongue, especially on the lateral posterior border [1]. Usually it affects men after 5<sup>th</sup> decade of life. Adults with habit of tobacco chewing, areca nut and alcohol consumption are at high risk for development of oral cancers [2, 3]. SCC of oral cavity is observed rarely in the pediatrics, adolescent and young age group below 40 years. In this age group, the role of influence of carcinogenic substances, mainly alcohol and tobacco is controversial. According to some researchers, the substances, recognized as carcinogenic in older patients, may also contribute to the etiology of SCC in youngsters [3, 4]. While some researchers reports that many patients in spite of never smoking or drinking alcoholic beverages or with very short duration of exposure to these agents get malignant transformation [5, 6]. Disease progression, prognosis and loco regional recurrence of Squamous cell carcinoma in youngsters is also controversial matter. Younger patients are considered to have more aggressive disease course compared to their older counterparts [4, 7, 8]. Some investigators, nevertheless, have observed a similar prognosis for both evaluated age groups [2, 9].

Oral malignancies in pediatrics age group constitute approximately 3% of all tumors –like growths in the oral cavity, jaws, and salivary glands in

all age groups. The overwhelming majority of these tumors are benign. Few studies on oral – maxillary lesions in children and adolescents are available, but reports on malignant neoplasms are scarce in literature. In the present report, we discussed a case of adolescent SCC of tongue with review of literature.

### **CASE REPORT:**

A 13-year-old boy from moderate socio-economic status and rural area was referred at our center with complaint of pain and swelling in left mandibular region and history of excessive salivation. He was a diagnosed case of tuberculosis and was on anti-Koch's treatment (AKT) since last 3 months. On acquisition of history in detail, he had cervical lymphadenopathy since last 6 months, for which he consulted local physician, underwent lymph node biopsy and on histopathology diagnosed as case of tuberculosis and receiving AKT. Again he observed swelling and pain in left mandibular region for which he has been referred to our center.

On physical examination, patient was afebrile with all vital parameters within normal range. There was a swelling on left side over mandibular region. Cervical lymph nodes on left side and submandibular lymph nodes were enlarged, hard and palpable. In oral cavity, there was a single but extensive ulcerative lesion of size 3x1.5 x1 cm with irregular surface in the floor of mouth. Floor of mouth was erythematous, with 1-2

bleeding points. Edge and base of lesion was firm on palpation, borders and surrounding area was hard indicating large infiltration. His baseline laboratory parameters including complete blood count, liver and renal function tests were within stipulated range. After correlating medical history and clinical examination findings, incisional biopsy of the lesion was taken and specimen sent for histopathology examination. On microscopic examination, section showed tumor tissue comprised of round to oval cells having round to oval hyper chromatic nuclei and moderate cytoplasm. There was presence of mitoses and large areas of necrosis. Inflammatory exudates were present in stroma. These findings revealed the diagnosis of well-differentiated SCC of floor of mouth. It was in the stage II (T2N1M0) as per the mouth cancer TNM classification criteria of the UICC/AJC (American Joint Committee for cancer staging).

We started chemotherapy with Carboplatin 200 mg and Paclitaxel 100 mg every 21 days. He completed 6 cycles without any adverse events. 2 months after completion of all cycles of chemotherapy, he was brought to our center in unconscious state by the relatives. On examination, he had distant metastasis in liver and lungs. He was shifted in intensive care unit. He had multi-organ failure and died on third day.

#### DISCUSSION:

Oral carcinoma is an extremely rare clinical entity in children. It is eighth common malignancy statistics wise, affecting all age group with male preponderance. Well-known risk factors for oral SCC are smoking, alcohol consumption, chewing tobacco and areca nut, immune-compromised status, dietary habits and infection with human papilloma virus. In pediatric age group, there is no role of carcinogenesis due to personal habits. But genetic predisposition, oral hygiene, socioeconomic status, feeding habits and previous viral infection could contribute to the development of oral SCC in youngster patients [2, 7, 8]. In our case, patient was on AKT, which might be the only risk factor of compromised immune status. Otherwise he did not have any significant personal and family history. If examination of oral cavity could have been done at the time of diagnostic work up of tuberculosis, our patient could have diagnosed at early stage.

In our case of 13-year-old boy with oral SCC, prognosis was very worse. Sidell D *et al.*; reported SCC of oral cavity in 6-year-old child [8]. Various studies documented controversial reports about aggressiveness of the disease in young patients. But some researchers found no difference in prognosis of young and old patients, while some propose aggressive management in pediatric age group because of aggressive nature of the tumor. Pediatric patients can present with various intraoral lesions that require accurate diagnosis, prompt management and possible referral for dental evaluation.

Periodic checkup of oral cavity can help to easily diagnose common and rare abnormalities affecting children. Recent advances in the field of healthcare sector have brought new insights into the etiopathogenesis and management of periodontal diseases of children. This will improve the prognosis of oral malignancies in pediatric and young age group. Early detection of these oral conditions may be lifesaving.

SCC of the oral tongue in young adults has therefore been a subject of several studies. There has been inconsistency in the literature regarding outcomes in young adults with oral tongue squamous cell carcinoma SCC is the most frequent malignant lesions of head and neck in adults. But it affects less than 4% patients at young age below 40 years [8-11]. There are no studies about oral cavity SCC in pediatric patients except for isolated case reports. Early reports of poor prognosis in young adults, combined with these reports of aggressive disease in pediatric patients, have led to the conclusion that oral SCC is aggressive condition in young patients [12]. In the pediatric population, poorer prognosis has also been attributed to delay in diagnosis and unknown etiological risk factors. Because malignant disease may not be suspected in children, adolescent and young adults, symptoms may be neglected and biopsies not performed in a timely fashion. Oral SCC in children and adolescents poses various technical challenges during diagnosis, management and follow up of the patients. Also there are emotional concerns with patients and parents, which need special precautions in management of such patients. Fortunately, oral cancer is seen rarely in children but the overall incidence of childhood cancer is rising.

#### CONCLUSION:

In the present case report, we reviewed different etiological factors, differential diagnosis and course of oral SCC in children. Our patient first had cervical lymphadenopathy, then diagnosed as SCC of floor of mouth. He completed 6 cycles of chemotherapy, but disease progressed very fast with distant metastasis and the patient died. While evaluating oral lesions in children also, physicians and dentists should think of possibility of malignant conditions even though prevalence is low. Aggressive nature of the disease results in poor outcome. Hence diagnosis at early stage is very important step in pediatric age group, which is relatively low risk group for development of oral cancers.

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