



# Advanced Carcinoma of Tongue in a 38-Year-Old Female: A Case Report

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## Abstract

We are reporting a rare case of Advanced Squamous Cell Carcinoma (SCC) of tongue in a 38 year old female. She had an addiction of using Masheri for the last 18 years. The incidence of SCC of tongue before 60 years is very rare. The incidence of SCC of tongue before the age of 35 is around only 2% and the same is around 7% before the age of 45. SCC of tongue is diagnosed at the median age of 61 years. It is most commonly found in males as compared with females around the world and very few cases of SCC of tongue have been reported before the age of 60 years. The survival is poor when the disease presents in advanced stage. She had undergone upfront surgery with reconstruction followed by adjuvant concurrent chemoradiation. We kept her on periodic follow up with us according to our institutional follow up protocol and after one year of completion of treatment she is disease free.

**Keywords:** Advanced squamous carcinoma; Tongue; Female; SCC; CECT

## Introduction

The most frequent intra oral head and neck cancer is the Squamous Cell Carcinoma (SCC) of the tongue. Oral SCC represents the vast majority of cancers of the oral cavity. Around the world, it is especially common in the region of Southeast Asia, and males are more frequently affected than females, with a ratio of approximately 2:1 [1,2]. In India it ranks at the 2<sup>nd</sup> position as SCC of lip and oral cavity and its incidence in Indian males is 13.9% as compared to 4.3% in females [3]. The incidence of SCC of tongue before 60 years is very rare. The incidence of SCC of tongue before the age of 35 is around only 2% and the same is around 7% before the age of 45. SCC of tongue is diagnosed at the median age of 61 years [4]. Though it is most commonly found in males as compared with females around the world, the recent literature of European studies over the last decade has shown an increasing trend of SCC of tongue in females. Most of the times this disease presents in advanced stage where the treatment gets complicated and survival is less. Very few cases of SCC of tongue have been reported before the age of 60 years [5]. The main risk factors for oral SCC are use of smoked and smokeless tobacco, areca nut use, and alcohol. The risk of combined effect of alcohol and tobacco is greater for oral cavity cancer as compared to tobacco and alcohol separately [6]. We are presenting a rare case of advanced SCC of tongue in a 38 year old female. She had an addiction of using Masheri for the last 18 years. Masheri is a smokeless tobacco (i.e. burnt tobacco or pyrolysed tobacco) and it is commonly used in Urban Indian women to clean the teeth [7].

## Case Presentation

38 year old premenopausal lady with no comorbidity with Eastern Cooperative Oncology Group Performance status I (ECOG) who married at the age of 19 years with siblings as an elder son and younger daughter and both were full term normal delivery. She studied up to 12<sup>th</sup> standard. She presented with ulceroproliferative lesion over the dorsal surface of tongue at the left lateral border which was noticed four months before and it was neglected for the next two months. Within these two months, the lesion had crossed the midline and extended to contralateral side and proximally reaching near the tip of tongue. She consulted a local doctor because of severe pain. She was evaluated with tissue biopsy which was suggestive of moderately differentiated squamous cell carcinoma. She presented to our clinic with this biopsy. There was no medical or significant family history in the

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**Figure 1:** Near Total Glossectomy (NTG) with remaining rim of tongue.



**Figure 2:** Pull through NTG with visor incision.

past. There was no history of previous surgery or hospitalization. She had an addiction of applying masheri to clean the teeth for the last 18 years and she used to apply it twice a day.

She is the first person who has been diagnosed with carcinoma in her family since last three generations including both paternal and maternal generations. Her general examination and systemic examination was unremarkable. On local examination, there was an ulceroproliferative growth over left lateral border of tongue with dimensions as 5 cm × 4 cm. It was extended to contralateral side with crossing midline and reached about 2 cm away from the right lateral margin. Proximally, tip was involved by the tumor and posteriorly base of tongue was free. Floor of mouth was free throughout along left side, right side and also proximally. Inferiorly it was extended about 2 cm cranial to suprahyoid as hardness was palpable at suprahyoid region. Protrusion of tongue was absent. Bilateral multiple enlarged lymph nodes were present at level II, III. Left side palpable nodes were present at level IV. Bilateral supraclavicular nodes were normal.

She has been evaluated with Contrast Enhanced Computerized Tomography (CECT) of oral cavity, neck, thorax, abdomen and pelvis. CECT findings were same as clinical findings and inferior extension was found reaching up to suprahyoid region. There was no bone involvement and no distant metastasis.

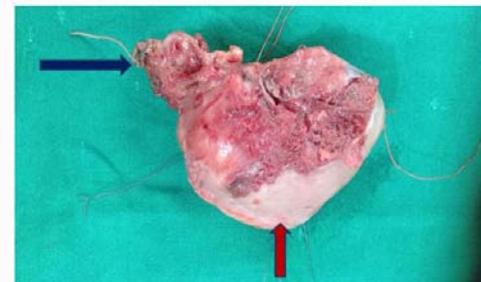
She has been planned with curative intent after discussing the case in our multidisciplinary tumor board. Surgical resection was planned after proper dental and anesthetic evaluation. The procedure was planned as pull through near total glossectomy with bilateral selective



**Figure 3:** ALT flap marking over left thigh.



**Figure 4:** Intra oral viable flap.



**Figure 5:** Specimen of NTG (Red arrow - left lateral border, blue arrow - tonsilo-lingual sulcus).

lymph node dissection and reconstruction with free Anterolateral Thigh (ALT) flap. Procedure was started with visor incision and tumor was addressed with both, intra-oral and suprahyoid approaches (Figure 1). Pull through near total glossectomy was completed with adequate macroscopic clear margins (Figure 2). Base of tongue was free but tumor had an extension at suprahyoid region which was removed en bloc with tongue specimen. Left side Selective Neck Dissection (SND) was completed with removal of lymph nodes from level I to V with preservation of Internal Jugular Vein (IJV), Spinal Accessory Nerve (SAN), Common Carotid Artery (CCA). Right side SND was completed with removal of LNs from level II to III with preservation of IJV, SAN, and CCA. ALT flap of size around 6 cm × 5 cm was harvested from left thigh (Figure 3). Reconstruction was completed with vascular anastomosis with artery to facial artery and vein to tributaries of internal jugular vein. Patient was extubated next day after confirmation of viability of flap (Figure 4). She was shifted to ward on 2<sup>nd</sup> postoperative day.

She had been started with Ryle's tube feeding with oral care with regular physiotherapy and subcutaneous heparin once a day. During this stay in ward, she had been taken care by speech and swallowing

therapist. So she learned speech and swallowing therapy also. On 4<sup>th</sup> postoperative day, flap was found congested and it was non-viable so we decided to re-explore. Patient was shifted to operating room on the same day. Intra operative we found that both anastomotic vessels were blocked with long segment thrombus. We did thrombectomy and reanastomosis was done. But still there was no perfusion in the flap so we changed our decision and planned to harvest ALT flap from contralateral thigh. Non-viable flap was debrided and reconstruction was completed with free contralateral ALT flap. For the next seven days, postoperative course was uneventful. She was discharged on 12<sup>th</sup> postoperative day of first surgery with Ryle's tube in situ. During follow up visits, Ryle's tube was removed as she was able to swallow liquid diet.

Final histopathology report was suggestive of moderately differentiated squamous cell carcinoma of tongue measuring 5.2 cm × 3.5 cm × 3.2 cm and involving bilateral cervical lymph nodes of which nine were positive out of total 62 lymph nodes with extranodal extension in one lymph node. All resected margins were clear (Figure 5) with presence of lymphovascular invasion with depth of invasion 2.8 cm. AJCC 8<sup>th</sup> edition staging was Stage IV B (pT4a pN3b M0/G2/LVI+/ENE+). She has been planned with adjuvant concurrent chemoradiation after discussion in multidisciplinary tumor board. After 25 days of completion of surgery, she received adjuvant treatment and tolerated well. She has been in follow up every three months for the first two years as per our institutional protocol. After one year of completion of treatment she is disease free.

## Discussion

The incidence of SCC of tongue is more in males with preponderance in 6<sup>th</sup> to 7<sup>th</sup> decades of life and there is debate about the etiological factors [5]. The most common risk factors i.e. smoking and drinking are usually found in elderly people and the same is not found in young population. The etiology of SCC of tongue is variable. In some of the cases, the etiology may be due to ill-fitting dentures, filling of the fractured tooth, chronic mechanical trauma due to sharp teeth [8]. Some of the premalignant conditions in long run may change to malignant growth like leukoplakia, erosive lichen planus and atrophic glossitis [9]. Sometimes other factors which were also having an association with tongue carcinoma are infection with viruses like herpes simplex, human papillomavirus. Other contributing etiologies are like genetic alteration, immune deficiency, and long term irregular dietary habits [10]. In the present case, the only possible etiological factor is long term exposure to tobacco which may be the only reason for malignant transformation.

Though the incidence of cases found before the age of 35 is around only 2% and the same before 45 is around 7%, there is an increasing trend in prevalence of SCC of tongue [11]. The present case is 38 year old female so making it a rare combination of age and sex for the occurrence of tongue carcinoma. The dissemination of carcinoma tongue is mostly local and the occurrence of distant metastasis is very rare. Most commonly the tongue carcinoma spreads by lymphatic route. Frequently involved lymph nodes are sub-mental and sub-mandibular followed by deep group of cervical lymph nodes [12]. Carcinoma tongue is considered as one of the most aggressive cancer among the subtype of intra oral head and neck cancers. The reason for this may be its rich lymphatic supply with muscular attachments which helps in giving the tongue an extreme mobility and finally this accelerates in dissemination of tumor cells [13]. The present case had enlarged bilateral multiple cervical lymph nodes. Out of total 62

lymph nodes, 9 nodes were found as metastatic with one node at left level II had an extra nodal extension. She has been advised adjuvant concurrent chemoradiation in view of moderately advanced stage of the disease with extra nodal extension.

The most common location of the carcinoma tongue is over the lateral border. This lady had the lesion over left lateral border which had gradually increased in size within a period of 4 months [14]. The best diagnostic method for carcinoma tongue is tissue biopsy in the form of punch biopsy or incision biopsy [15]. In the present case, initial treating clinician took incision biopsy and she was referred to our clinic for further management with the biopsy report. The multimodality treatment for carcinoma of tongue includes surgery, radiotherapy, chemotherapy, and combined modalities [16]. The primary therapeutic modality for most of the intra oral head and neck cancer is surgery. The selection of the upfront treatment modality depends on many factors like tumor stage, its location, multiplicity, bone involvement, pathological features, histology grade, depth of invasion, cervical lymph node status, patient's previous medical or surgical treatment and general condition [17]. The prognosis of the advanced tongue carcinoma is poor. In the present case also prognosis is poor and chances of recurrences are more in spite of completion of all treatment modalities. There are some of the independent factors which affect the prognosis of the disease like tumor crossing the midline, cervical lymph node positivity with presence of extra nodal extension, presence of lympho-vascular invasion, residual tumor, recurrence and completeness of surgical resection [18]. Long term follow up is crucial in this scenario. We have also kept her on periodic follow up to prevent any chances of recurrences.

## Conclusion

The present case is a very rare case of advanced carcinoma of tongue in a 38 year old female. As there is an increasing trend of prevalence of SCC of tongue, measures should be taken to plan and implement tobacco and alcohol abuse cessation programs.

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