



## SHORT COMMUNICATION

### SUBMENTAL FLAP FOR RECONSTRUCTION OF CARCINOMA OF TONGUE: REPORT OF A CASE

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#### ABSTRACT

The submental island flap (SIF) is a new alternative in the reconstruction of various head and neck defects. The skin characteristics make the submental region an available flap site for facial and intraoral reconstructions. The flap is simple and reliable, can be used in small to medium defects where complete oncological clearance is assured. Here we present a case of squamous cell carcinoma involving lateral border of tongue treated with wide excision and reconstruction with submental flap

#### INTRODUCTION

Reconstruction of tongue is functionally and aesthetically challenging. Locally available flap is an excellent option for reconstruction of lateral border of tongue. Submental flap has wide skin paddle and predictable perforator which makes it suitable choice for intra oral reconstruction. Submental island flap was first described by Martin *et al.* (1993), in 1993 based on submental artery, branch of facial artery. Flap drained by submental vein which drains to facial vein. Submental flap is a perforator flap with no donor site morbidity. Submental flaps are comparable in their outcome with radial forearm free flap. They carry a good colour match with facial tissue (Faltaous, 1996 and Vural, 2000). They are thin and have a reliable vascular morphology.

#### Case Report

Fifty four year female patient reported to us with non healing solitary ulcer on lateral border of tongue measuring about 1.5x1 cm with everted edges. The ulcer was covered with slough, was indurated and nontender. Clinically no lymph nodes were palpable. The tumour was graded as T1N0M0. Incisional biopsy of lesion suggested squamous cell carcinoma of right lateral border of tongue. Wide excision and supraomohyoid neck dissection was done with preservation of facial artery and vein. Adequate size of the flap was marked at the submental region in continuity with submandibular incision.

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Submental branch of the facial artery was identified at deeper aspect of submandibular gland and was dissected. Anterior belly of digastric was dissected along with the pedicle and flap was harvested containing skin subcutaneous tissue and thin platysma. Flap with pedicle was mobilised, tunnel was created through the floor of the mouth to reach the defect and was sutured. Donor site was closed primarily. Post operative healing was uneventful.

#### DISCUSSION

Submental island flap was first described by Martin *et al* <sup>1</sup>in 1993 based on submental artery, branch of facial artery. Flap drained by submental vein which drains to facial vein. A perforator flap is a single vessel based skin and or subcutaneous tissue flap. Submental flap is a perforator flap with no donor site morbidity. The submental artery, a constant branch 1 to 1.5 mm in diameter at its origin, arises after the facial artery exits from the submandibular gland. It runs medially on the mylohyoid muscle along the under surface of the mandible and runs deep (70 percent) or above (30 percent) the anterior belly of the digastric muscle (Faltaous, 1996). Advantages of flap are ability to close the donor site primarily with hidden scar. Flap has long (up to 8cm) reliable pedicle which provides excellent healing (Vural, 2000). It can be used in previously irradiated patients (Wu, 1998). The flap may not always be predictable due to variations in course of submental artery and surgical errors. Faltaous and Yetman proposed that anterior belly of digastric to be included in the flap as the artery runs deep to the muscle and prevents injury to pedicle (Faltaous, 1996). Yilman *et al* described that inclusion of digastrics is not necessary unless bulky flap is necessary

(Yilmaz, 1997). We preferred to harvest anterior belly of digastric to prevent loss of flap. Another method of harvesting submental flap “sandwich the vessel” method has been described where in mylohyoid is used as protector of the vessel, but oncological clearance of the nodes may be challenging (Amin, 2011).



Figure 1. Incision and resection of lesion on tongue

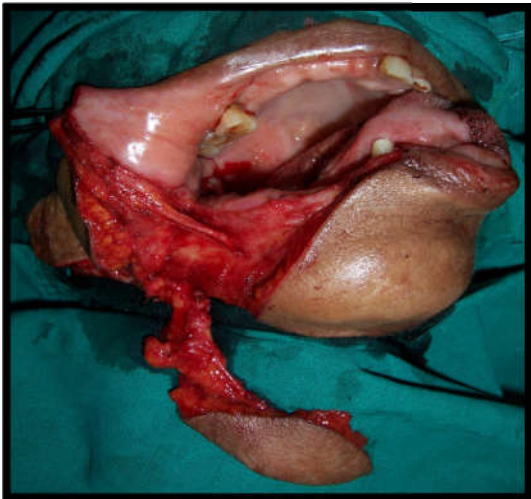


Figure 2. Submental flap with digastric muscle pedicle



Figure 3. Defect reconstructed with submental flap

Earliest reports of use of submental flap for reconstruction of tongue was by Sterne and Hall (Sterne, 1996). Its use is limited

in males due to hairy nature of the flap, in such cases de epithelisation can be done. In cases that require neck dissection for involved lymph nodes, using a flap which transfers contents of submental and submandibular triangles may not be oncologically safe (Ahmad, 2010). Literature recommended that this flap is not suitable for clinical node positive neck (Tassinari, 2010). Since in our case was clinically negative nodes in the neck and prophylactic supra omohyoid neck dissection was planned. Submental flap not advisable in T3-T4 lesions as there is more chance of involvement of site by metastasis (Petsinis, 2009). Complications of this flap are local recurrence, remaining metastatic lymph node and wound dehiscence (Rahpeyma, 2015). Forner *et al.* (2016), have demonstrated that use of the submental island flap as an alternative to radial forearm freeflaps, showing both decreased hospital costs and comparable patient outcomes.

### Conclusions

Submental flap is a valid option for reconstruction of small to medium sized defects of tongue. It should be carefully selected in cases of T1 and T2 lesions with no nodal involvement and meticulous dissection of protect the viability of flap. Oncological clearance should be given the utmost importance.

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