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Clinical Article

Tongue flap for lip defects: Our experience.

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Abstract

Background: Background: Lip defects following neoplasm surgery are usually complicated. Appropriate reconstruction is vital in improving the quality of life of such patients. In this study, we have assessed the usefulness of the dorsal/lateral tongue flap in cases of lip reconstruction.

Methodology: A retrospective data of patients who reconstructed with either dorsal or lateral tongue flap between November 2015 and June 2018 was collected. Departmental Ethical clearance was done.

Results: A total of four patients who underwent tongue flap reconstruction during this period were analyzed. The size of the defect following excision of the lesion ranged from 3-5.5 cm. There was no partial or total loss of flap in our series. Postoperatively all the patients had adequate mouth opening, good swallowing.

Conclusion: Dorsal or Lateral tongue flap is a simple and reliable flap for lip reconstruction. It helps in providing good functional results with less morbidity.

Keywords

Oral Neoplasm's, Oral Surgery, Surgical Flaps, Tongue Flaps.

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Introduction

The treatment of the lesions of the lip is mostly surgical excision. Lip defects following neoplasm surgery are usually complex. Appropriate reconstruction is vital in improving the quality of life of such patients. As of today, such defects are being increasingly reconstructed with free flaps. In developing countries, because of the increased overall cost, lack of skilled surgeons, and increased operating time, free flaps are less frequently used. Local flaps like the tongue flap can be used in the selective group of patients, i.e. those with moderate size defects[1].

The tongue is an adjacent structure to the excision site and can be used more frequently as it is very vascular, elastic and occupies a central location[1]. Tongue flaps have the advantage of these properties. The principle of tongue flap is equitable redistribution of mucosa from an area with relative abundance on the tongue to an adjoining defect. Dorsally/Laterally based dorsal tongue flaps are a good option for certain selected cases. There is no significant morbidity at the donor site. There is complete primary closure of the donor area, and it is a single staged procedure. This paper aims to assess the usefulness of dorsal or lateral tongue flap in lip reconstruction.

Methodology

Retrospective data of patients who were reconstructed with either dorsal or lateral tongue flap for lip defects between November 2015 and June 2018 was used. Departmental Ethical clearance was taken. The site, stage of the tumour and type of resection were also recorded. The patients were followed up to assess the flap viability and functional outcome.

Inclusion Criteria

1. Lip lesions involving the only vermilion.
2. T1 and T2 lesions.
3. Mobile tongue.
4. Good mouth opening.

Exclusion criteria

1. Lesions involving other areas, commissure.
2. T3 and T4 lesions.
3. Restricted mouth opening or tongue movement.
4. Earlier operated cases.

Procedure

1. The patient was posted under general anesthesia after taking written informed consent.
2. Nasal intubation was done.
3. The lesion was excised, taking adequate margin according to the case.
4. The tongue flap was marked
5. and raised anteriorly, either dorsally or laterally, according to the case.
6. The flap was inserted to defect; donor defect closed primarily.
7. The patient was re-posted for flap detachment and in setting after two weeks.
8. The patient was then extubated.
9. Post-operative follow-up included speech assessment and training.

Results

There were 1 male and 3 females with ages ranging between 42 to 81 years. The lower lip was the most common site of primary cancer with 3 patients. The size of the defect following excision was from 3-5.5 cm in the greatest dimensions. Two patients had T1 lesions, one had T2 lesions, and one patient had verrucous hyperplasia.

Table 1: Patient Characteristics.

Case no.	Age	Sex	Lesion	Stage	Tongue Flap	Complication
1	54	f	Upper lip	T1	Anterior based, dorsal	None
2 Photographs [images 1-4]	48	f	Lower lip	Verrucous hyperplasia	Anterior based, lateral	None

3	42	m	Lower lip	T2	Anterior based, lateral	None
4	81	f	Lower lip	T1	Anterior based, lateral	None

The most common histopathology was moderately differentiated squamous cell carcinoma which was reported in three patients, verrucous hyperplasia in one.

The flap elevation time was between twenty to thirty minutes. Resident doctors performed all the flaps surgery under supervision. There was no partial or total flap loss in our series. All the patients had adequate mouth opening, good movement of the tongue, good swallowing and unhampered speech following surgery. The patient and clinician subjectively assessed swallowing and speech results. No complications were observed postoperatively after 2 weeks.

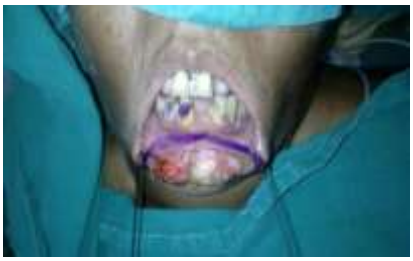

Figure 1: Preoperative
This is a 48 years old female who came with a lesion on her lower lip. An outside biopsy performed reported it to be a Verrucous hyperplasia. After proper pre-operative workup and attainment of written informed consent, the patient was taken up for wide local excision and reconstruction by a lateral tongue flap.

Figure 2: Post excision defect
After wide local excision, the defect is shown in figure 2. It is nearly the whole lower lip; the commissures are spared.

Figure 3: Flap marking
A decision was made to do an anteriorly based lateral tongue flap. The flap markings are as shown in the image. The flap was divided, and in setting was done after two weeks.

Figure 4: Post-operative
Postoperatively the patient had adequate mouth opening, good swallowing.

Discussion

Lip defects following oncological surgery are usually quite complicated. These defects are being increasingly reconstructed nowadays with free flaps. Free flaps cannot be offered to every patient as it has increased overall cost, less skilled surgeons, along with an increased operating time. Also, these free flaps have donor site morbidity. Local flaps such as the tongue flap can be used in mild to moderate size defects. Vascularized flaps (tongue flap and free flaps) can overcome problems related to split skin graftings into these areas. There is a dire need for trained microvascular surgeons to perform free flaps surgery efficiently with an increased operating time.

The advantage of tongue flap is that it is quick and easy to harvest and can be done as a single-stage procedure in some cases. In our series, it took around 20 to 30 minutes for resident doctors to harvest the flap. Lexer has described the use of lateral tongue flap for retromolar trigone in 1909[2]. But it was Klopp who popularized the use of posterolateral tongue flap for the soft palate and tonsillar lesions[3]. Guerrero–Santos[4] et al., Bakamjian[5] and McGregor[6] described the tongue flap for palatal and lip defects. Hiranandani7 had described the use of tongue flaps for pharyngeal defects. Som and Nussbaum described lateral tongue flap for the floor of the mouth[8]. Jackson had described the use of dorsal tongue flap for palatal defects[9]. Calamel described the use of anterior based dorsal tongue flap for defects of the floor of the mouth[10].

Various types of tongue flap dorsal anteriorly or posteriorly based, dorsal transverse flap, flaps from tongue tip dorsal and ventrally orientated, ventral tongue flaps. Palatal defects are closed with tongue flaps that are anteriorly based. Tongue flaps from the tip are used for lip reconstruction and floor mouth reconstruction. Posteriorly based dorsal tongue flap is used following marginal mandibulectomy, soft palate, tonsil or buccal mucosa wide excision.

One of the concerns with the use of tongue flaps is speech alteration along with swallowing difficulty[11]. Some surgeons fear interference with articulation; however, this fear is unwarranted[12]. Swallowing mainly depends on the bulk of the posterior third of the tongue. Dorsal or lateral tongue flaps do not cross the circumvallate papillae, so swallowing is usually not affected.

Conclusion

The dorsal or lateral tongue flap is a simple and reliable flap for lip reconstruction. It helps in providing good functional results with less morbidity.

Conflicts of Interest

None.

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