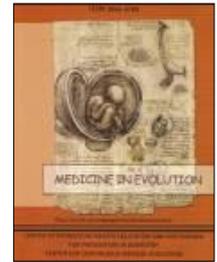


RECONSTRUCTION OF LARGE DEFECTS OF LIPS FOLLOWING RESECTION FOR ORAL SQUAMOUS CELL CARCINOMA



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ABSTRACT

Large lower lip defects are very difficult to reconstruct and obtain an aesthetic appearance and an acceptable function.

The reconstructive aims are to restore the oral lining, the external cheek, oral competence, and function (i.e., articulation, speech, and mastication). This study presents the authors' approach to simultaneous reconstruction of complex defects with an modified Camille Bernard flap. This procedure was used in 10 patients.

All patients regained normal or near-normal speech and had an acceptable appearance. The modified Camille Bernard flap allows the reconstruction of the lower lip with a functioning oral sphincter; the technique can be recommended for patients who need large lower lip resection. It provides functional recovery of the reconstructed lower lip synchronizing with the remaining upper lip.

Keywords: lip defects, oral squamous cell carcinoma.

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INTRODUCTION

The most frequent type of lip carcinoma is squamous cell carcinoma (SCC), accounting for approximately 90% of all lip malignancies. Presently, surgery and/or radiotherapy are considered the standards of care for SCC of the lip¹. Lips have important functional and aesthetic roles in daily living. They are the focal point of the lower face, with several aesthetic units intricately controlled by a complex series of muscles². Several key factors including exceptional anatomy makes reconstruction of the lower lip especially challenging.

The aim of reconstruction is always reinstatement or preservation of function and aesthetics³. Aesthetic considerations include suitable symmetry and normal anatomic proportions, presence of a philtrum, normal oral commissures, and establishment of a vermilioncutaneous white border^{4,5}. In case of larger lip defects, lip reconstruction is challenging.

In this paper we present long term objective lip assessment following lip reconstruction using the modified Camille Bernard flap⁶.

MATERIALS AND METHODS

The medical records of 10 consecutive cases of lip carcinoma who were treated by the authors between June 2003 and June 2005 at the Oro-Maxillo-Facial Surgery Clinic, "Carol Davila" University of Medicine and Pharmacy,

Bucharest were reviewed. Each patient was asked if any subjective symptoms such as numbness, drooling, speech and mastication problems occurred.

The lip appearance was rated by the following parameters:



Fig. 1: Lip appearance evaluation a. the intercommissural distance at rest; the intercommissural distance with a wide grin; c. the intercommissural distance in a purse position; d. soft tissue gap of the lips

Lip elasticity (Figure 1 a-c) was assessed using the lip elasticity index

$(A3-A2 / A1) \times 100$, where A1 is the intercommissural distance at rest while

the patient is swallowing, A2 is the intercommissural distance with a wide grin, and A3 is the intercommissural distance in a purse position. The index value for each patient was compared with normal values ⁷.

Soft tissue gap of the lips (Figure 1 d) is defined as the straight line distance between the wet-dry line in the centre of the upper lip and the wet-dry line in the centre of the lower lip while the mouth is opened as widely as possible.

The value for each patient was compared with normal values.

Symmetry of positions of the right and left commissure was evaluated by

the helix-commissure distance was taken for the injured and uninjured commissure at rest and with wide grin.

Patients with a difference of 4 mm or more were considered to have asymmetric commissure positions.

Assessment of sensation of the commissure was carried out using the static two point discrimination test. Sensibility values of the affected commissure in each patient were compared with the values of the contralateral commissure.

The strength of the orbicularis oris muscle was evaluated by the possibility of whistling.

RESULTS

None of the patients had any subjective symptoms and all were happy with the cosmetic appearance of the lips (Figure 2).

Objective assessment of lip parameters showed the following. All patients obtained lip elasticity values within the normal range. Five patients (50%) had values below the normal range. At rest, all patients were considered to have

symmetric commissure positions. However, with a wide grin, the injured commissure moved to a lesser extent when compared to the uninjured commissure leading to asymmetry in four patients. Five patients (50%) had slightly worse sensibility of the injured commissure than of the contralateral side. All patients maintained the possibility of whistling.



Fig. 2: Pre and postoperative appearance of a patient with malignant tumor of the lower lip that includes ipsilateral commissure (T2NoMx)

DISCUSSION

To date, long term objective lip assessment following tumour excision and reconstruction using modified Camille Bernard method has not been reported. The 50% of patients who had a soft tissue gap value below the normal range did not have any aesthetic or functional problems because the values were only a few below the normal means of the corresponding sex and age groups.

The fact that the commissure positions were symmetric at rest in all patients, but not with wide grin, indicates that asymmetry was due to inadequate movement of the injured and scarred commissure rather than improper location of the commissure itself (Figure 3).

Guidelines for finding the location of oral commissure before reconstruction are done in the rest position. If a normal commissure remains, measure

ments are taken from the midline to the normal side and then transposed to the affected side. If one does not have this option, then perpendiculars from the media limbus are used as guide lines (Figure 4).

Although none of the patients had any subjective sensory complaint abnormalities of the lips, 50% of patients were found objectively to have slightly higher two point discrimination and pressure threshold values. This suggests that in our patient group, sensory recovery after reconstruction was incomplete, but was still adequate enough to mask any subjective feelings of alteration of sensory function.

Finally, maintained whistling capacity indicated that the insult to the orbicularis oris muscle in our patients was not sufficient to affect its sphincteric power.



Fig. 3: Postoperative appearance after reconstruction one month and 10 months after surgery. There is discrete asymmetric position of the two corner of lips



Fig. 4: Establish the commissures position in the modified Camille Bernard method.

CONCLUSIONS

Our study demonstrates a satisfactory long term outcome following tumour excision and reconstruction using modified Camille Bernard method.

In subtotal lower lip loss, modified Camille Bernard flap showed satisfactory results and is a good option in these cases.

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