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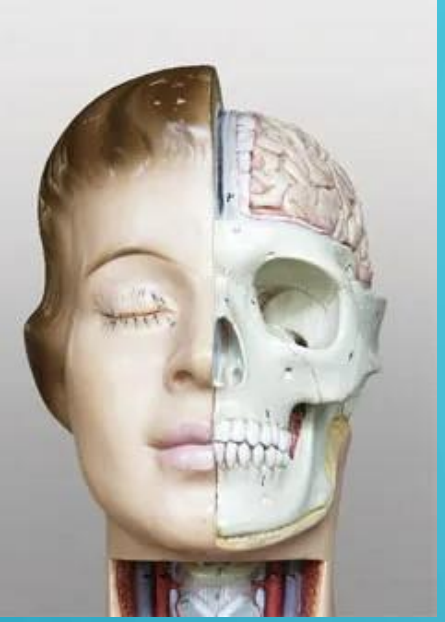
Reconstruction of large defects of the lower lip occurring after wide excision of Squamous cell carcinoma-Case report

Prim. dr. spec. Vladimir Milosev
Department of Maxillofacial Surgery, Clinical Hospital Stip, North Macedonia
Faculty of Medical Sciences, Goce Delcev University, Stip, North Macedonia



INTRODUCTION: Treatment of cancer of the maxillofacial region Surgical treatment of primary tumor

- The challenge for every maxillofacial surgeon is the reconstruction of lip defects, which arise as a result of congenital and acquired defects (oncological excisions, traumatic avulsions, burns or infections) (1,2). The most common cause of the defect is malignant neoplasms of the lips, 95% of which are squamous cell carcinomas. The ratio of involvement of the lower and upper lip is 9:1 (3).
- Malignant lip tumors are treated surgically and postoperatively with radiotherapy in cases where there are poor prognostic indicators, such as multiple positive lymph nodes, extracapsular extension of the tumor, deep invasion of the primary tumor, neurovascular invasion, and if the tumor margins are less than 5 mm (4).
- The choice of surgical technique depends on several factors, including the size and location of the defect, the patient's comorbidities, as well as the surgeon's expertise (5,6).

MATERIALS AND METHODS

The aim of this paper is to present our institutional experiences from the Dept. of Maxillofacial Surgery, Clinical Hospital, Stip, and my clinical results of the reconstruction of a defect of the lower lip in a patient with malignant infiltrative neoplasm of the lower lip developed after surgery. A patient with invasive squamous cell carcinoma of the lower lip is presented. The subject of this paper is the assessment of the functional and aesthetic outcome of different reconstruction methods of full-thickness lip defects.

CASE REPORT

- An 82-year-old patient, who first came to the Department of Maxillofacial Surgery, Clinical Hospital in Štip, a year ago, due to the existence of an ulcerative lesion on the lower lip, about 1.5 cm in diameter. Despite a detailed explanation of the nature of the lesion and the consequences of a possible extension of the lesion, the patient still refused surgical treatment. After a year, the patient returned for examination, due to the rapid growth of the lesion in recent months. During the second examination, a large ulcerative-infiltrative formation was found that completely covers the lower lip, its entire width and thickness, with destruction of the corners of the mouth and infiltration into the buccal mucosa, on the right.

- Ultrasonography and CT scan of the head and neck revealed enlarged lymph nodes on the left side of the neck, stage N2. An indication was set for operative treatment, which includes: removal of the tumor, reconstruction of the lip and dissection of the left side of the neck. The procedure was explained to the patient, after which the written consent of the patient and family was obtained for the high-risk operation (due to age and existing comorbidities – diabetes and CV insufficiency). The operation was performed in GETA.
- The surgery lasted 4 hours and 30 minutes. After radical excision of the lower lip lesion, a full-width lower lip defect was obtained, with excision of the buccal mucosa on the right side.
- Elevated flaps were planned on both sides of the defect and the reconstruction was performed using them. This avoided the creation of a microstoma, which is one of the drawbacks of other techniques in lower mouth reconstruction.
- A Von Bruns nasolabial incision was made on the right, and a combination of the Friesu and Dieffenbach methods was made on the left.

- Due to the invasion of the carcinoma into the buccal mucosa, on the right, and in order to monitor the occurrence of possible recurrences, reconstruction of the oral commissure, on the right, was not performed in the first act. We performed it in the second act. A selective supraomohyoid dissection was performed on the left side of the neck.

- Three preparations were sent for pathohistological evaluation: the first is a change on the lip - an infiltrative lesion on the entire surface of the lower lip, a rectangular incision measuring 7x1.5 cm, with exophytic tumor proliferation measuring 8.5x3x1.5 cm, and the second is a neck dissected with lymph nodes and submandibular salivary gland.

- There were no complications in the postoperative course, the incisions were vital in their entirety, preserved sensibility and motility, satisfactory aesthetic appearance and function. After 10 days, the patient was released for home treatment. Pathohistological findings confirmed a well-differentiated squamous cell carcinoma that reached one peripheral resection margin.

PREDICTORS OF THE OCCURRENCE OF METASTASES OF PRIMARY MALIGNANT TUMORS OF THE MAXILLOFACIAL REGION WHICH ARE EVALUATED IN THIS RESEARCH ARE:

Gender:	**Male**
Patient's age:	**82 years old**
First inspection:	**Clinically visible large cancerous lesion involving the entire lower lip with infiltration of the buccal mucosa on the right**
Type of malignant neoplasm:	**Squamous cell carcinoma**
Tumor size: **Histopathological characteristics:**	**Three samples were sent for pathohistological evaluation: the first is a change on the lip - an infiltrative lesion on the entire surface of the lower lip, a rectangular incision measuring 7x1.5 cm, with exophytic tumor proliferation measuring 8.5x3x1.5 cm, and the second is a neck dissected with lymph nodes and submandibular salivary gland. Microscopic analysis showed a well-differentiated squamous cell carcinoma, no tumor embolism were found in the lymphovascular spaces or perineural spread. In the sample from the right resection margin, a neoplasm spreading in the dermis reaches the resection margin.PTNM = pT3, pN2a, pV1, pPN0, pR1, G1, stage III, M0.5x3x1. 5 cm, and the second is a neck dissected with lymph nodes and submandibular salivary gland**
Lymph node level:	**Ultrasonography revealed enlarged lymph nodes on the left side of the neck, stage N2**
Biochemical analysis:	**Preoperative:** **Neutrophils 18.59** **Lymphocytes 1.77** **Platelets 238** **C reactive protein 16.8** **Sedimentation 90/120** **Postoperativno:** **Neutrophils 4.01** **Lymphocytes 0.65** **Platelets 190** **C reactive protein 29.2** **Sedimentation 40/50**
Surgical treatment : **Defect closure method:**	**Primary excision with supraomohyoid neck dissectionThe operation was performed in the GETA, with nasal intubation. The operation lasted 4 hours and 30 minutes. After radical excision of the lower lip lesion, a full-width lower lip defect was obtained on the right by excision of the buccal mucosa. Elevated flaps were planned on both sides of the defect and reconstruction was performed with them. This avoided the creation of a microstoma, which is one of the drawbacks of other techniques in lower mouth reconstruction. A Von Bruns nasolabial incision was made on the right, and a combination of the Friesu and Difenbach methods was used on the left.**
5-year survival period of patients with metastases in the lymph nodes of the neck (Patient monitoring - medical documentation) Chemotherapy, Radiotherapy.	**The last check-up was performed 6 months after the operation - with normal and correct local findings.**

RESULTS

In the patient, after the radical removal of the tumor, the defect was reconstructed. The patient underwent reconstruction with a combination of the nasolabial flap on the right and the Friesu and Dieffenbach methods on the left. There is a certain degree of hypoesthesia in the nasolabial lobes, while scars and moderate microstoma are evident in patients who underwent Dieffenbach reconstruction.

The patient was satisfied with the functional and aesthetic outcome, and functional (normal diet and speech) and aesthetic results were achieved. In the postoperative period of 6 months, a postoperative photograph was taken, and the patient underwent a comprehensive reevaluation, which included an ultrasound examination of the neck, assessment of aesthetic results, and assessment of static and dynamic functionality of the lip.

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Picture 1. Preoperative condition

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Picture 2 -1 Surgical treatment

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Picture 2-2 Surgical treatment

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Picture 4. Postoperative condition

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Picture 5 - Local findings of the patient 3 months after operative treatment

DISCUSSION

The most reliable way of treating cancer of the lower lip is its wide surgical excision. The first goal of the procedure is to remove the cancer in its entirety, and the second is to restore the function and aesthetic appearance of the newly formed lip, which should resemble a healthy lip as much as possible.

The best results in reconstructions are achieved by using the remaining and surrounding tissues. Such a "like for like" replacement principle is called the Gillise principle and should be used wherever possible, due to minimal donor site morbidity and tissue matching in texture and color.

To date, no single surgical technique provides all the requirements for ideal reconstruction of lip defects that affect more than one third (12). These include preservation of sensibility with adequate sulcus depth, oral capacity, wide oral commissure, and preservation of adjacent esthetic features.

CONCLUSION

- Lips play a key role in facial aesthetics. In order to achieve the best aesthetic and functional results, it is necessary for the surgeon to choose the most appropriate method of reconstruction. In the process of treatment planning, the surgeon should take into account the characteristics of the defect such as: the remaining tissue after tumor ablation, the elasticity of the skin and, most importantly, the patient's decision.
- It is important to involve the patient in the process, with a detailed explanation of the specifics of the operation and its consequences, because the results of the reconstruction can be far from satisfactory for the patient. Therefore, the size of the defect, its localization, the ability of the surgeon and the patient's expectations play a key role in choosing the reconstruction technique.
- The case report showed that the combination of several local incisions is an excellent alternative for the reconstruction of large defects of the lower lip.

REFERENCE

- 1. Baumann D, Robb G. Lip reconstruction. Semin Plast Surg.2008;22(4):269-80. http://dx.doi.org/10.1055/s-0028-1095886.PMid:20567703.
- 2. Eskiizmir G, Baker S, Cingi C. Nonmelanoma skin cancer of the head and neck: reconstruction. Facial Plast Surg Clin North Am. 2012;20(4):493-513. http://dx.doi.org/10.1016/j.fsc.2012.08.003. PMid:23084301.
- 3. Anvar BA, Evans BC, Evans GR. Lip reconstruction. PlastReconstr Surg. 2007;120(4):57e-64e. http://dx.doi.org/10.1097/01.prs.0000278056.41753.ce. PMid:17805106.
- 4. David L. Tumors of the Lips, Oral Cavity and Oropharynx. In: Mathes S, editor. Plastic Surgery. 2 edition ed. Philadelphia:: Saunders Elsevier; 2006; pp. 159-80.
- 5. Bae YC, Kim SH, Hwang SM i sur. Treatment og squamous cell carcinoma on lower lip. J Korean Soc Plast Reconstr Surg 1998;25:278–85.
- 6. MeCarn KE, Park SS. Lip reconstruction. Facial Plast Surg Clin North Am 2005;13:301–14.
- 7. Ebrahimi A, Maghsoudnia GR, Arshadi AA. Maghsoudnia GR, Arshadi AA. Prospective comparative study of lower lip defects reconstruction with different local flaps. J Craniofac Surg. 2011;22(6):2255-9. http://dx.doi.org/10.1097/SCS.0b013e318232786d. PMid:22075831.
- 8. Dieffenbach JF. Chirurgische erfahrungen, besonders ueber die wiederherstellung zerstoerter theile des menschlichen koerpers nach neuen methoden. Bedim: T.C.F. Enslin; 1829.
- 9. Bernard C. Cancer de la levre inferieur opere par un procede nouveau. Bull Soc Chir Paris. 1853;3:357-60.
- 10. Webster RC, Coffey RJ, Kelleher RE. Total and partial reconstruction of the lower lip with innervated musclebearing flaps. Plast Reconstr Surg Transplant Bull. 1960;25(3):360-71. http://dx.doi.org/10.1097/00006534-196004000-00007. PMid:13843351
- 11. Cupp CL, Larrabee WF JR. Reconstruction of the lips. Oper Tech Otolaryngol--Head Neck Surg. 1993;4(1):46-53. http://dx.doi.org/10.1016/S1043-1810(10)80106-X.
- 12. Eskiizmir G, Baker S, Cingi C. Nonmelanoma skin cancer of the head and neck: reconstruction. Facial Plast Surg Clin North Am. 2012;20:493–513.