

## **Surgical Treatment of Lip Cancer in the Oro-Maxillo-Facial Surgery Department of QSUT, Tirana**

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### **Abstract**

**Objective:** We want to report the results of surgical treatment of lip cancer in the Oro-Maxillo-Facial Surgery Department in Q.S.U.T Tirana, in order to determine the efficiency of surgical management in the cases included in the research.

**Methodology:** The study included cases taken from the OMF Surgery Department in the period from January 2011 to January 2016. The target group consists of 56 patients: 11 females, 45 males, mean age 60, range 24 to 79 years who underwent surgery for lower lip carcinoma. We reviewed the data from the clinical features, risk factors, localization of the lesion, regional lymph node status, tumor staging, results of surgical treatment and pathological examination, locoregional recurrence. The mean follow up period was 36 months (range 6-60 months).

**Results:** The study showed male predominance of the lip cancer (80%) mostly after the age of 50. People affected by this pathology were mainly farmers or construction workers who were highly exposed to the direct sunlight. Almost 78% of cases were diagnosed in the early stages T<sub>1</sub>N<sub>0</sub>M<sub>0</sub>. The locoregional recurrence was 12.5%.

**Conclusions:** Lip cancer is a common malignance of the head and neck region. The tumor is highly treatable with excellent cure rates when identified in early stages. Increasing awareness among patients and community in general can help to further lower the incidence of this pathology and improve survival rates. Surgical treatment of the tumor has many advantages and should be the choice for treating lower lip cancer of any stage.

**KEYWORDS:** Lip cancer, risk factors, early diagnosis, surgical treatment

### **INTRODUCTION**

Lip cancer is one of the most easily diagnosed head and neck cancers and usually with a good prognosis. The most common malignancy of the lip is squamous cell carcinoma. This type of cancer is more frequently found in the lower lip (88-98%), with only 2-7% arising from the upper lip and 2-4% at the oral commissures.

### **Epidemiology**

The incidence of the lip cancer throughout the world is up to 30% of all the malignant tumors of the oral cavity. Europe has an annual incidence 12.0 cases per 100,000 population. Men continue to be affected at rates significantly higher than those in women. The incidence for males is 1.85 per 100,000 compared with 0.34 per 100,000 females. Nearly 70% of the newly diagnosed cases are 60 years of age or older.

### **Etiology**

The etiology of lip cancer is not completely understood and direct causes haven't been proved. One third of patients with lip cancer have outdoor occupations. This suggests that the sun exposure may be an etiologic factor. The prevalence of lip cancer is 10 times higher in whites than in those with darker skin and is very rare among blacks. Multiple factors are linked to lip cancer such as: tobacco use, pipe smoking, thermal injury, lip trauma, poor oral hygiene, exposure to chemicals, mechanical irritants, immunosuppression and chronic infections.

### **TNM Classification**

Primary Tumor ( T )

T<sub>x</sub>: Primary tumor cannot be assessed

T<sub>0</sub>: No evidence of primary tumor

T<sub>is</sub>: Carcinoma in situ

T<sub>1</sub>: Tumor 2 cm or less in greatest dimension

T<sub>2</sub>: Tumor more than 2 cm but not more than 4 cm in greatest dimension

T<sub>3</sub>: Tumor more than 4 cm in greatest dimension

T<sub>4</sub>: Tumor invades adjacent structures (e.g., through cortical bone, inferior alveolar nerve, floor of mouth, skin of face, muscles of tongue, maxillary sinus, skin).

Regional lymph nodes (N)

N<sub>x</sub>: Regional lymph nodes cannot be assessed

N<sub>0</sub>: No regional lymph node metastasis

N<sub>1</sub>: Metastasis in a single ipsilateral lymph node, 3 cm or less in greatest dimension

N<sub>2</sub>: Metastasis in a single ipsilateral lymph node, more than 3 cm but not more than 6 cm in greatest dimension; or in multiple ipsilateral lymph nodes, none more than 6 cm in greatest dimension; or in bilateral or contralateral lymph nodes, none more than 6 cm in greatest dimension

N<sub>3</sub>: Metastasis in a lymph node more than 6 cm in greatest dimension

Distant metastasis ( M )

M<sub>x</sub>: Presence of distant metastasis cannot be assessed

M<sub>0</sub>: No distant metastasis

M<sub>1</sub>: Distant metastasis

### **Evaluation**

The clinical presentation of lip carcinoma is quite characteristic, presenting as an exophytic, nodular or ulcerated lesion in the vermilion border, with variable degrees of infiltration of the underlying musculature or invasion of the overlying skin or labial mucosa.

Well differentiated squamous cell carcinoma is often associated with hyperkeratosis and leukoplakia of the vermilion border of the lip. The factors that should be considered in planning surgical resection and reconstruction of the lips include the tumor stage, lip subsite of origin, patient preference, and histopathologic type and grade of the tumor. When the tumor is detected in an early stage, radiographic evaluation is unnecessary. The advanced tumors that invade the mandible require radiologic evaluation such as

panoramic radiographs and CT scan to determine the bone invasion and the involvement of the inferior alveolar canal.

### Surgical treatment

The goal of lip cancer surgical treatment is long term control of the carcinoma and preservation of the competency and aesthetics of the perioral region. In case of a small primary tumor ,surgery is quicker, maintains blood supply and soft tissue integrity , and leaves little aesthetic or functional impairment. Locally advanced lip cancer requires surgical resection and reconstruction. Management of lip cancer usually include surgery and radiotherapy. The size of the primary lesion determines the extent of the marginal excision. In large lesions,a minimum of 8-10 mm of normal tissue around the lip cancer is recommended. Lip cancers in less than 1 cm in greatest dimension are managed with smaller margins of 5 mm.

The most common techniques used to treat lip cancer are:

- Vermilionplasty with labial mucosal advancement flap
- V-excision, W-excision, Y-excision techniques for small lesions less than 30% of the lip
- Abbe and Eastlander Techniques for lesions 30-60% of the lip
- Fujimori, Karapandzic, Bruns techniques for lesions more than 60% of the lip
- Free flap reconstruction

### METHODS

This was a retrospective-statistical study. We have analysed the medical records of 56 patients (45 males and 11 females) aged 24 to 79 diagnosed with lip cancer undergoing surgical intervention from the period of January 2011 to January 2016. We have analysed the profession, sex and age distribution, tumor staging, pathological examination, the results of surgical treatment and locoregional recurrence.

### RESULTS

The incidence is distinctive in favour of males 80%,which is roughly with the U.S. National Cancer Institute SEERS data 83%.

Gender	Number of patients	Percentage
Male	45	80%
Female	11	20%
TOTAL	56	100%

Tab. 1. Gender distribution of lip cancer

The distribution of patients by age is divided in six groups, in the table 2.

Age	Number of patients	Percentage
21-30	2	3.5%
31-40	3	5.3%
41-50	2	3.5%
51-60	18	32.1%
61-70	18	32.1%
71-80	13	23.2%

TOTAL	56	100%
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Tab. 2. Age distribution of lip cancer

From the results we notice that over 87% of patients affected by lip cancer are over 50 years old.

As to profession of patients the data are presented in table 3.

Profession	Number of patients	Percentage
Farmer	14	25%
Construction worker	8	14.3%
Driver	4	7.2%
Other (indoor jobs)	30	53.5%
TOTAL	56	100%

Tab. 3 . Distribution of lip cancer by profession

The profession is very linked with the pathology due to the exposure to the direct sunlight. Patients who have been exposed for a long period of time to the direct sunlight such as farmers, construction workers and drivers are almost half of the total number.

By the hystopathological aspect the most common tumor was the squamous cell carcinoma, followed by basocellular carcinoma and minor salivary glands tumor. There were no cases of melanomas.

Most cases were diagnosed in early stages  $T_1N_0M_0$  or  $T_2N_0M_0$  almost 78%, but there were also patients presented to the clinic in advance stages such as  $T_2N_2M_0$  or  $T_2N_2M_x$ . Since the major part of the lesions were relatively small in dimensions the most common surgical technique used was V-technique and W-technique.

From the total number of 56 patients who underwent surgery, 7 of them (12.5%) manifested locoregional recurrence within a period of 3 years.

## DISCUSSION

Lip cancer is a common malignancy of the head and neck region which is encountered often in daily practice. It affects mostly men (80%). This significant difference might be due to occupational and behavioural differences between the sexes: a higher percentage of men working outdoors or taking part in outdoor leisure activities. Sun exposure is a well established risk factor for development of lip cancer. This helps explain why 90% of this pathology occur on the vermillion of the lower lip, since it has a higher level of sun exposure compared to the upper lip which is shield by the nose and is angled slightly downwards.

In accordance with other studies and literature, we found an increase in lip cancer incidence with increasing age. Age is a significant risk factor and can be a result of accumulation of molecular changes due to external exposure factors such as tobacco, or as a part of the biological ageing process that has been shown to be linked to

accumulation of DNA damage. This mutation is caused mostly by ultraviolet radiation. Tumor development is a result of failure to repair these mutations.

Tumor stage and histopathological type of the tumor are two important factors that determine the surgical procedure required. Since most of the patient detected this pathology in early stages, lesion dimensions were small and there were no metastatic lymph nodes and the major part of the tumor was squamous cell carcinoma, the implemented techniques were mostly V-excision and W-excision techniques.

#### Clinical case nr.1



*Fig. 1. a.Clinical presentation b.Pre-surgery evaluation c.V-excision surgery technique d.6 weeks after surgery*

#### Clinical case nr.2



*Fig. 2 a.Clinical presentation b.Pre-surgery evaluation c.Post-operative view*

### CONCLUSIONS

- Lip cancer is the most common malignant lesion of the oral cavity and the second most common malignancy of the head and neck overall, after cutaneous malignancy.
- It affects mostly the male gender after the fifth decade of life.
- Squamous cell carcinoma has a higher incidence followed by basocellular carcinoma and minor salivary gland tumor.
- Sun exposure is the most important risk factor since according to our study, other studies and literature almost half of the patients with lip cancer are subjects to long time ultraviolet radiation exposure. This is the main reason why lip cancer is found in high rate in Albania due to our sunny climate.
- The lower lip, especially the external part of it is more affected by this pathology than the upper lip, due to the vulnerable positioning toward sunlight.

- Early diagnosis of lip cancer is crucial in preventing severe functional and aesthetic deformities, locoregional recurrence and death.
- Surgical treatment of lip cancer is the first choice to be implemented since it has a high rate of success almost 85%. Radiotherapy has limited potentials since it can be applied only for small lesions.
- Contemporary surgical techniques give us the opportunity to eliminate this pathology with very good functional and aesthetic results.
- Locoregional recurrence of lip cancer among patients included in this study was in low rate (12.5%). This is related to the surgery performed in early stages and in some cases combined with radiotherapy.

## REFERENCES

1. Isufi R., Qendro A., Bardhoshi E. *Kirurgjia Orale dhe Maksilo-Faciale*. 1<sup>st</sup> edition. pp 641-678, Tirane 2010.
2. Isufi R. *Kirurgjia Maksilo-Faciale*. Tirane 2006
3. Miloro M., Ghali G. E., Larsen P. E., Waite P. D., *Peterson's Principles of Oral and Maxillofacial Surgery – Third Edition* Shelton, Connecticut, USA, pp 727-743, 2011
4. Hupp J., Ellis E., Tucker M., *Contemporary Oral and Maxillofacial Surgery – Sixth Edition*, St. Louis, Missouri 2014.
5. Kesting M. *Oral Cancer Surgery: A Visual Guide*, Munich, Germany 2015.
6. Langdon J., Patel M., Ord R., Brennan P., *Operative Oral and Maxillofacial Surgery – Second Edition*, pp 307-315, London, 2011.
7. Miloro M., Kolokythas A., *Managment of Complications in Oral and Maxillofacial Surgery*, pp 267-280, Chicago 2012.
8. Haggerty C., Laughlin R., *Atlas of Operative Oral and Maxillofacial Surgery*, California USA 2015, pp 431-434
9. Fonesca R. J., *Oral and Maxillofacial Surgery*, Philadelphia, Pennsylvania 2000.
10. Cerezo L., Liu F., Tsang R., *Squamous cell carcinoma of the lip, analysis of the Princess Margaret Hospital experience*. Radiotherapy Oncology 1993; 28: 142-7