

## Surgical Approaches To The Cervical Lymph Nodes In The Treatment of Oral Squamous Cell Carcinomas

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### ABSTRACT

**Introduction:** About 90 per cent of all malignant tumors of head and neck area fall on the “squamous cell carcinoma” of mucous and skin coverings of that area, having the high probability of regional metastasis. When using the surgery for such pathology the selection of intervention method on regional lymphatic apparatus is still negotiable.

**Material and methods:** 35 patients with the various types of neck dissection have been examined. The efficiency of the methods was assessed base on the clinical and radiologic indicators.

**Results:** it was revealed that functional neck dissection is the most optimal one during the malignant diseases in the oral cavity and the maxillofacial area.

**Conclusion:** According to our research work functional dissection of neck lymph nodes are recommended in case of patients with cN0. This will help to have a better post operation treatment for patients.

**Key words:** oral cancer–neck dissection–functional neck dissection–cervical lymph nodes

### 1 INTRODUCTION

It is known that, 5-8% of all tumors in the body include neck tumors. Nearly 90 percent of them constitute carcinomas, which develop from the squamous cell of mucosa of upper digestive and respiratory system or from head and neck skin. In the treatment of cancer in the maxillofacial area, the surgery treatment is the first way to treat, and it is divided into 2 ways. The first is the tumor zone, and the second is the neck zone. Which has a very big probability of metastases [1] [2] [3, 4].

Currently, there is no disagreement among the specialists about the method of removal of primary tumor by surgical way. Depending on the stage of disease in the neck, if not detected preoperative regional metastases cN<sub>0</sub> and the patients with clinical metastases cN<sub>0</sub>, appears contentions issues in the application of surgical methods [5–9]. If we consider the facts, in which the head and neck tumors pose a risk of metastases the neck, area it turns out that However one of the most Important question is about localized cancers, which have a large percentage of probability of metastasis even in clinical no cases. There by, currently in the head and neck oncologic surgery the most important and disputed question is an approach with preventive treatment methods of the neck in the patients on the cN<sub>0</sub> stage.

Recently, the main issue for discussion among the specialists is about neck dissection in the patients on this stage, if there is what kind of dissection better [10–14] [15].

This we would like to share with our research experience in the direction of the solving this issue.

### 2 MATERIALS AND METHODS

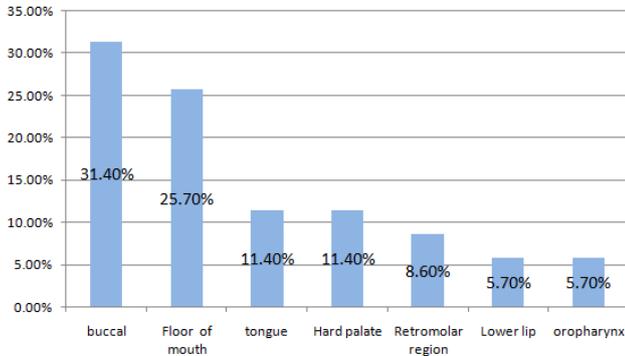
35 patients who had carcinomas in the maxillofacial area were operated during 2016-2018 in the maxillofacial surgery department of Educational Surgical Hospital of Azerbaijan Medical University. [16] (31,43 %)- of patients refer to the female gender, 24 (68,57%)- to male gender. Patients are classified by type and location of the tumor as follows:

Patients, who belonging to the different age groups, indicators of age hesitate between.

The average age was 50 years and more. There were conducted clinical-radiographic inspections before the operation, and there were carried out the treatment by NCCN protocol (The national comprehensive Cancer Network version 2011). Among the patients only 2 (mucoepidermoid carcinoma of parotid gland and carcinoma of squamous epithelium of the face skin). Had no intervention on the neck. 34

**Table 1.**

Tumor localization	The number of patients	percent
Buccal	11	31.40%
Floor of mouth	9	25.70%
Tongue	4	11.40%
Hard palate	4	11.40%
Retromolar region	3	8.60%
Lower lip	2	5.70%
Oropharynx	2	5.70%



**Figure 1.**

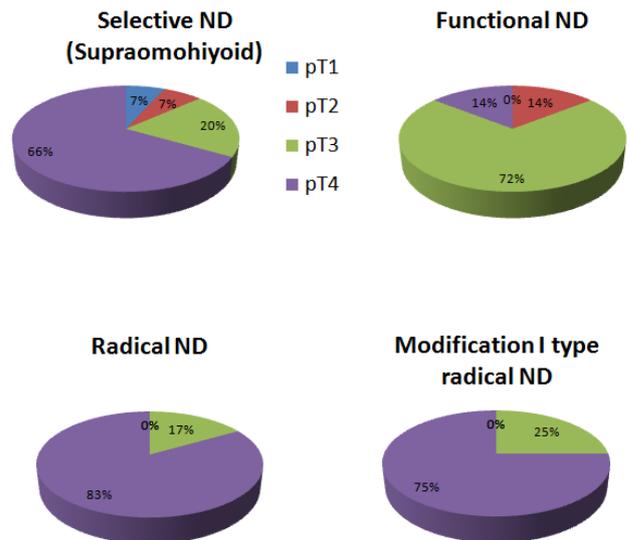
patients had surgical intervention during their first and the second operation. Depending on the primary tumors type, size and localization, during the first examination, according to the position of regional lymph nodes, were chosen different types of neck dissection. During the first examination of all patients, conducted contrast enhanced computed tomography and were used MRI examination to determine the condition of the cervical lymph nodes, which follow the rules of protocol.

**Table 2.** According to the results of the pathohistological examination, the neck dissection performed according to the T and N stages.

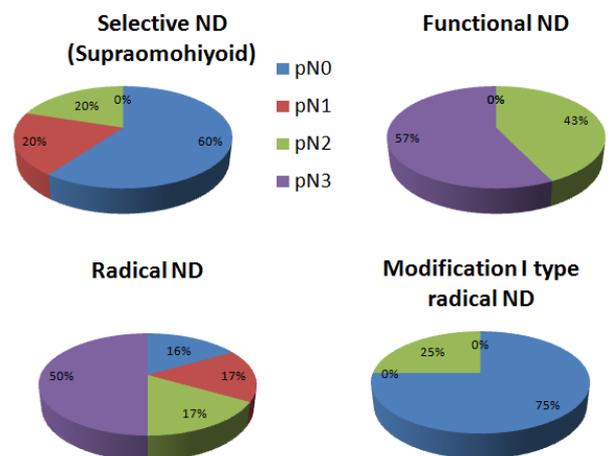
	pT1	pT2	pT3	pT4
Selective ND (Supraomohiyoid)	1 (6.7%)	1 (6.7%)	3 (20.0%)	10 (66.7%)
Functional ND	-	1 (14.3%)	5 (71.4%)	1 (14.3%)
Radical ND	-	-	1 (16.7%)	5 (83.3%)
Modification I type radical ND	-	-	1 (25.0%)	3 (75.0%)

**Table 3.**

	pN0	pN1	pN2	pN3
Selective ND (Supraomohiyoid)	9 (60.0%)	3 (20.0%)	3 (20.0%)	-
Functional ND	-	-	3 (42.9%)	4 (57.1%)
Radical ND	1 (16.7%)	1 (16.7%)	1 (16.7%)	3 (50.0%)
Modification I type radical ND	3 (75.0%)	-	1 (25.0%)	-



**Figure 2.**



**Figure 3.**

### 3 RESULTS

25 investigated patients had a surgery only once, 10 of them had twice and more. 7 of the patients refer to them had SCC of floor of mouth, 4 SCC of Buccal mucosa, 1- retromolar mucous membrana carcinoma, 1- SCC of lower lip, and 2 had carcinoma of minor salivary glands.

Four among the above group had their first operation without intervention to the neck, it was just removed the primary tumor.

On the next examination of these patients, it appeared lymphadenopathy on their neck, subsequently they had to the surgery for dissection.

During the first operation of other patients were carried out removing the primary tumor and ipsilateral dissection of the neck.

The causes of re-operation in these patients are local recurrence or the appearance of contralateral lymphadenopathy.

Note during the operation the in patients who had done frozen section examination, with intact incision edges showed locoregional recurrence

In those patients, who were found clinical and X-ray cervical metastasis, during the first operation the primary tumor was removed, and executed the neck radical dissection.

In those patients who weren't found clinical and X-ray cervical metastasis during the first operation, not only removed the primary tumor, as well as depending on the location and size of tumor, was carried out elective, modified neck dissection or neck area was under the clinical observation.

Among the examined patients it was carried out radical neck dissection 4-functional neck dissection, in 4- modification the first type of radical neck dissection, and it was implemented elective neck dissection in 12 patients (supraomohyoid, suprahyoid and lateral neck dissection)

If the same time the neck dissection N-3 patients was bilateral, and it was implemented selective neck dissection in contralateral zone.

During the first clinical examination 6(66,7%) of 9 patients who were executed radical neck dissection were found lymphadenopathy, and was confirmed during his to pathological examination.

Among 3 patients, 2 of them didn't have clinical lymphadenopathy, but it was confirmed during the histopathological examination.

One operated patient with a diagnosis of tongue cancer (T<sub>3</sub>) didn't have clinical and pathological lymphadenopathy.

One of four patients, who were carried out neck dissection during the first examination on the neck, was detected lymphadenopathy, which connects with oropharyngeal carcinoma.

The patient was scheduled to preoperative chemotherapy and radiotherapy. After this treatment the patient had a scar in the area of primary tumor, it wasn't found lymphadenopathy on the clinical and X-ray examination of the neck on the second stage it was executed functional neck dissection, and on the histopathological examination, were confirmed metastasis (N-3) to the lymph nodes. Another one patient had reoperation which was connected with relapse of the primary tumor and radiologically was found lymphadenopathy, which was confirmed during the histopathological examination.

The other 2 patients didn't have lymphadenopathy during the clinical neck-radiographic examination, however it was conducted the functional neck dissection due to the large size of the primary tumor (T<sub>3</sub>-T<sub>4</sub>), and confirmed as a result of histopathological examination. [17]

It was executed modification I radical neck dissection in 4 patients. Only in one patient (diagnosis: carcinoma of the mucosa in the left retromolar area T<sub>4</sub>) was found lymphadenopathy which was confirmed in the result of histopathological. Other 3 clinically and radiographically examined patients didn't have lymphadenopathy which was confirmed in the result of histopathological examination.

Carcinoma of mucosa in the area of floor of mouth modification I radical neck dissection in 12 patients 3 of the

patients had reoperation it wasn't clinically found and radiographically confirmed lymphadenopathy. After the first operation it was confirmed lymphadenopathy in's patients on their histopathological examination.

The patient who were taken to reoperation, 3 of them executed suprahyoid, and in 1 suprahyoid neck dissection and wasn't found clinically and radiographically confirmed lymphadenopathy.

2 of 3 reoperated patients had T<sub>4</sub>, and one-T<sub>2</sub>. 2 patients had carcinoma of the buccal mucosa, 1 had carcinoma of the lower lip.

The patient who had carcinoma T<sub>4</sub> on the cheek, was performed total resection with buccal mucosa and skin, and recovered with pectoral major myocutaneous flap, it was performed supraomohyoid neck dissection, and histopathologically lymphadenopathy wasn't detected.

After 3,5 month later in the patient clinically and radiologically were detected metastasis to the ipsilateral parotid gland and patient again was taken to the total parotidectomy operation:

After removal of the primary tumor, 2 months later was discovered lymphadenopathy in the ipsilateral jugulodigastric (zone II) area. The patient requested the proposed operation.

In patients who underwent radical neck dissection histopathological findings showed that operational research got success and proved themselves (75% of patients had pN<sub>+</sub>).

In patients who were carried out elective neck dissection clinical and radiological examinations less consistent with histopathological findings (58% of patients had pN<sub>0</sub>), and patients got postoperative adjuvant radiotherapy.

In patients who were carried out modification radical neck dissection, clinical and radiological examinations less consistent with histopathological findings (25% of patients had pN<sub>+</sub>), in patients in an approach to the neck, was allowed more radicalism.

In all patients who were carried out functional neck dissection histopathologically was installed N<sub>+</sub>, and patients got postoperative adjuvant radiotherapy, its seen by the results, in the treatment of patients, who had malignant tumors in the oral and maxillofacial area, in approach to the cervical zone, the most efficient way to treat it is neck dissection than cancer observation.

#### 4 DISCUSSION

Principle approach to the neck, during the planning of surgery, depends on the location of the primary tumor, clinical condition of neck and X-ray diagnostic estimate of the neck. [18]

In cN<sub>0</sub> patients before the treatment of the neck area should be considered following factors [19]:

1. How many clinically ho patients dont have cancer cells on the cervical lymph nodes and how many can have hidden metastasis?
2. How many patients in the most date stages, are revealed clinically confirmed lymph-nodes?

3. How many patients with clinically confirmed cervical metastasis in the late examination can be completely cured by the way of surgical treating?

4. If preventive treatment is applicable for these patients, which is more effective method and what treatment is the best in respect that the minimum exacerbation of the treatment, to avoid from the metastatic cervical lymph nodes and distant metastasis?

In the treatment of the patients  $CN_0$  in their cervical area, applying the basic surgical treatment, videlicet, the neck dissection [20].

Until recently used standard neck dissection, as well as classical radical neck dissection but it has turned out that the radical neck dissection leads to the complication and has performed into double side nevertheless increases the risk of mortality as well as in the result of recent research it revealed that his way also leads to the cancer effects and thereby the neck radical dissection can be conventional wisdom in these cases [21]:

1. In  $N_3$  cases
2. In the cases of multiple metastatic lymph nodes of several levels
3. If there is suspicion of metastasis, which is not parallel with the primary tumor location
4. In the cases of recurrence, before, selective neck dissection
5. In the cases of recurrence, before radiotherapy
6. In the cases of recurrence, before chemotherapy
7. If found or suspected extracapsular extension
8. In the cases of skin infiltration

## 5 CONCLUSION

At the end we can consider that in patients with oral cancer neck dissection of lymph nodes has very important role. According to our research work functional dissection of neck lymph nodes are recommended in case of patients with  $cN_0$ . This will help to have a better post operation treatment for patients.

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