Dynamics of quality of life of patients as a method of evaluating surgical treatment outcome in oral and oropharyngeal cancer

Relevance: Study of the quality of life indicators is an important part of a comprehensive analysis of new diagnosis, treatment, and prevention methods. It can serve as an additional criterion for selecting individual therapy or rehabilitation, examining the ability to work, and identifying psychological problems.

Purpose of the study: The authors took a clinical case to demonstrate the use of monitoring of the quality of life indicators for the assessment of surgical and reconstructive treatment outcome for oral and oropharyngeal cancer.

Results: The anticancer treatment effects were reflected in the physical functioning score according to the EORTC QLQ-C30 questionnaire (reduced to 80 points) and some symptomatic scores according to the EORTC QLQ-C30 and EORTC QLQ-H & N35 questionnaires. Medical rehabilitation measures resulted in positive dynamics of physical functioning scores according to the EORTC QLQ-C30 questionnaire (increase to 93.3 points) and symptomatic scores according to the EORTC QLQ-H & N35 questionnaire related to nutrition. At that, the patient has stopped having difficulty eating in public places; his body weight increased. The absence of pain and refusal to take analgesics also testified to successful treatment and improved quality of life.

Conclusion: A subjective assessment of the various quality of life aspects in a particular patient provides valuable information about the individual response to the conducted treatment.

Keywords: oral and oropharyngeal cancer, quality of life (QoL), surgical treatment, EORTC QLQ-C30, EORTC QLQ-H & N35.
**Clinical observation:**

Patient G., 58 years old, applied to the Oncology Department of Head and Neck Tumors of N.N. Aleksandrov Republican Scientific and Practical Center of Oncology and Medical Radiology complaining of pain when swallowing, a painful ulcer in the soft palate on the left. An objective examination in the area of the mucous membrane of the soft palate and the anterior palatine arch on the left revealed an infiltrative-ulcerative tumor, painful on palpation, measuring 4.0 × 3.5 cm with a transition to the posterior third of the tongue (Figure 1). The palpation and instrumental diagnostics revealed no regional lymph node lesion. After a comprehensive examination, the patient was diagnosed with "squamous cell carcinoma of the mucous membrane of the soft palate with spread to the root of the tongue on the left T3N0M0, stage III".

![Image of clinical observation](image)

**Figure 1 – Replacement of a post-resection defect of the lateral pharyngeal wall with a muscle-fascial pectoral flap**

According to national standards, at the first stage, the patient underwent surgical treatment in the volume of resection of the soft palate, the oropharynx lateral wall, the root of the tongue on the left, and fascial sleeve excision of the neck tissue on the left.

**Surgical intervention:** The lower tracheotomy and intubation of the trachea were followed by a horizontal incision of the neck soft tissues; the larynx was mobilized. The pharynx was opened in the region of the left pyriform sinus after transection of the trachea. Resection of the oropharynx tissues with the tumor was performed, having retreated to 2 cm within the healthy tissue from the visible borders of the tumor. A skin incision was made on the anterior chest wall along the inferolateral contour of the pectoralis major muscle; a skin-fat flap was separated. A portion of the pectoralis major muscle covered with fascia was mobilized on the pectoral feeding vessels, in shape and size corresponding to the postoperative pharyngeal defect. The mobilized flap was moved to the site of the postoperative pharyngeal defect through the subcutaneous tunnel, and the flap was positioned vertically in the plane of the defect and sutured with the fascial surface to the pharyngeal mucosa with the formation of an anterolateral pharyngeal wall and a pharyngoesophageal fistula (Figure 2). The skin of the neck was sutured in layers over the formed anastomosis and the wound of the donor area. Active suction drains and a nasogastric tube were installed.

The postoperative period was uneventful. Postoperative wounds healed by primary intention. The nasogastric tube was removed on Day 10 post-surgery. Removal of sutures and decannulation performed on Day 14 post-surgery.

The speech therapist consulted the patient on Day 12 post-surgery. Due to the existing post-resection articulation apparatus defect, the patient was offered an individual speech disorder correction program which included a complex of breathing and articulation exercises. The speech therapist supervised the performance of exercises and instructed the patient to continue exercising at home.

The patient was discharged in a satisfactory condition on Day 15 post-surgery. Before discharge, the patient’s chewing, swallowing, and speech functions were assessed, and the index of nutritional risk was calculated. According to the patient, painful sensations persisted in the postoperative wound area in the oral cavity and oropharynx, which caused difficulties when opening the mouth and swallowing food. An objective study showed a restriction of opening the mouth to 3-4 cm (I degree of impairment), nutrition was performed mainly by sipping, the nutritional deficiency not revealed (NRI was 101.3). The speech impairments were manifested in a slight decrease in speech tempo (up to 110 words per minute) and the pronunciation of hissing sounds.
Keratinizing squamous cell carcinoma G1, with damage to the oropharynx tissues, the root of the tongue, and signs of microvascular invasion, was verified by histological examination of the operating material. The tumor did not involve the regional lymph nodes, the submandibular salivary gland, or clipping margins. In the postoperative period, the oral cavity and neck were irradiated from 2 sides (total focal dose of 50 Gy, single focal dose of 2 Gy).

No signs of tumor recurrence were observed within 36 months after the cancer treatment.

At the control examination three months later, the mouth opening was still limited as per degree I but was painless. The patient experienced difficulties in taking solid food due to secondary edentulism, so he consumed grated food. However, there was no nutritional deficiency; the NRI was 107.2. The speech rate increased to 115-120 words per minute; speech intelligibility exceeded 90%, indicating mild speech function violations.

The treatment of patients with head and neck tumors, especially with locally advanced tumors, is multicomponent and long-term. The resulting breathing, swallowing, and speech functional disorders limit working abilities, leading to temporary or permanent disability. The patient was sent for a medical and social examination following the regulatory requirements [6] and was assigned the disability group II for one year. Following the examination, he was offered an individual medical rehabilitation program.

A year upon completion of anticancer treatment and medical rehabilitation, an objective study found that opening the mouth was painless and was performed in full; there were no difficulties in eating; there was no nutritional deficiency; the patient gained weight; the acoustic characteristics of the voice and speech intelligibility were practically not differed from the normative indicators of a healthy person [7]. After the examination, the medical and rehabilitation expert commission assigned the patient to the disability group III instead of II. The patient re-joined to work as an electrical engineer. The patient G. QoL analysis using the EORTC QLQ-C30 (Figure 2) and EORTC QLQ-H&N35 (Figure 3) questionnaires reflects the patient’s condition dynamics during the observation period.

Thus, the general state of health before treatment, according to the patient’s subjective assessment according to the EORTC QLQ-C30 questionnaire, corresponded to 50 out of 100 points, which may be due to the presence of a malignant neoplasm and emotional perception of the disease (anxiety about functional and aesthetic outcomes of treatment, preservation of social status). At this stage, no significant violations upon any functional scales of the questionnaire were registered. With a more detailed assessment of the status of patient G. using the EORTC QLQ-H&N35 questionnaire, attention is drawn to the presence of tumor symptoms of this localization: difficulty opening the mouth, dysfunction of swallowing and speech, salivation, pain that requires relief with analgesics.

The consequences of anticancer treatment were reflected in the scoring of the physical functioning scale of the EORTC QLQ-C30 questionnaire (reduced to 80 points) and some symptomatic scales of both questionnaires. According to the questionnaires, the patient developed fatigue and sensory disturbances, aggravated difficulties in eating in public places, problems in the sexual sphere, and persistent disturbances in opening the mouth and salivation and...
speech function three months after the surgical treat-
ment. However, a decrease in dysphagia and the fre-
quency of taking analgesics was noted, indicating
positive changes in QoL, taking into account the com-
parison of the questionnaire results using both ques-
tionnaires.

After the treatment, the QoL in terms of general health
improved from 75.0 points three months after surgery to
83.3 points a year upon completion of the anticancer treat-
ment and medical rehabilitation. The physical function-
ing score under the EORTC QLQ-C30 questionnaire has
increased to 93.3 points. The symptomatic scores under the
EORTC QLQ-H&N35 questionnaire related to the patient’s
nutrition have also improved: the score for disturbances in
opening the mouth decreased from 66.7 to 33.3 points, the
swallowing function disorder – from the initial 50.0 points
to 16.7 points three months after surgery and 8.3 points one
year after the completion of treatment. The patient stopped
experiencing difficulties when eating in public places, and
his body weight increased. Several researchers mention the
absence of pain and refusal to take analgesics as clinically
significant symptoms that indicate a successful treatment
and improvement of the cancer patients’ QoL [8, 9].

**Conclusion:** A subjective assessment of various aspects
of a patient’s QoL provides valuable information about the
individual response to treatment. This clinical case shows
the possibility of using QoL indicators as an index of success
of cancer patients’ surgical treatment with plastic replace-
ment of a post-resection defect. Comparing the results of an
objective study and a patient’s subjective assessment of QoL
using standardized questionnaires EORTC QLQ-C30 and EOR-
TC QLQ-H&N35 showed identical dynamics of changes in
the patient’s condition at different stages: before the start
of treatment and three and twelve months after the end of
cancer treatment. Analysis of indicators of functional and
symptomatic scales of these questionnaires gives an insight
into the role of various factors affecting QoL. It helps assess
the treatment results and plan measures for patients’ reha-
bitation and achieving an acceptable QoL level.

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Treatment of Cancer QLQ-C30: a quality-of-life instrument for use in
Ауыз қуысы мен ауыз жүктіш ішкіреталардың ісінің хирургиялық емдіктерінің багалуына элдің пациенттердің сүру сапасына даярданың қосымша өлшемі бола алады.

Эфектілі: Емір сүру сапасының ортадағы құрылымдары және қамтылығын әрекеттеп ететін сапасының динамикасы. Емір сүру сапасы жаттықтаның жұмыс істеге, психологиялық және өмір сүру сапасының динамикасы.

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Ауыз қуысы мен ауыз жүктіш ішкіреталары

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ТУЖЫРЫМ

Зерттеу дайындарындагы болушылдік взаимоотношения пациента с клиникой и трудовой деятельностью в целом, а также сложности в адаптации к новой жизни после лечения.

Резюме: Оценка качества жизни пациентов после хирургического лечения рака полости рта и ротоглотки методом полного оценки EORTC QLQ-C30 и EORTC QLQ-H&N35. Полученные результаты показывают, что качество жизни пациентов улучшилось после проведенного хирургического лечения.

Динамика качества жизни пациентов как метод оценки результатов хирургического лечения рака полости рта и ротоглотки

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Актюарность: Изучение показателей качества жизни пациентов является неотъемлемой частью комплексного анализа новых методов диагностики, лечения и профилактики и может служить дополнительным критерием для подбора индивидуальной терапии или индивидуальной программы реабилитации, экспертизы трудоспособности, выявления психологических проблем.

Цель исследования: на клиническом примере продемонстрировать возможность оценки результатов хирургического лечения рака полости рта и ротоглотки с пластическим замещением пострезекционного дефекта путем изучения качества жизни в динамике.

Результаты: Последствия противоопухолевого лечения отразились на бальне оценке показателей шкалы физического функционирования опросника EORTC QLQ-C30 (снижение до 80 баллов) и некоторых симптоматических шкал стандартизированных опросников EORTC QLQ-C30 и EORTC QLQ-H&N35. После проведения медицинской реабилитации отмечалась положительная динамика показателей шкалы физического функционирования опросника EORTC QLQ-C30 (увеличение до 93,3 балла), симптоматических шкал опросника EORTC QLQ-H&N35, связанных с питанием. При этом, пациент перестал испытывать затруднения при приеме пищи в публичных местах, также отмечалось увеличение массы тела. Об успешном лечении и улучшении качества жизни свидетельствовало отсутствие болевого синдрома и отказ от приема анальгетиков.

Заключение: Субъективная оценка различных аспектов качества жизни у конкретного пациента позволяет получать ценную информацию об индивидуальном ответе на проводимые лечебные мероприятия.

Ключевые слова: рак полости рта и ротоглотки, качество жизни, хирургическое лечение, EORTC QLQ-C30, EORTC QLQ-H&N35.