



**QUALITY OF LIFE OF PATIENTS WITH LARYNGEAL DEFECTS AT THE STAGES  
OF REHABILITATION TREATMENT**

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**Annotation.** This study explores the quality of life of patients suffering from laryngeal defects during various stages of rehabilitative treatment. It examines physical, psychological, and social factors influencing patients' well-being and adaptation to post-treatment conditions. The research highlights the importance of comprehensive rehabilitation programs aimed at improving functional outcomes and enhancing overall life satisfaction. Findings suggest targeted interventions can significantly improve patients' quality of life, emphasizing multidisciplinary approaches in medical and psychological care.

**Keywords:** Quality of life, laryngeal defects, rehabilitation, post-treatment, patient well-being, functional recovery, psychological adaptation, multidisciplinary care

**Introduction.**

Laryngeal diseases, in particular malignant neoplasms, occupy a significant place in the structure of oncological pathology of the head and neck. According to the World Health Organization, more than 180 thousand new cases of laryngeal cancer are registered annually in the world, with the highest incidence among men aged 50–70 years. In the CIS countries, the incidence rate fluctuates between 8 and 12 cases per 100 thousand people.

The main method of treatment remains surgical intervention, which is often accompanied by partial or complete resection of the larynx. Despite advances in microsurgery, laser technology and organ-preserving operations, a significant proportion of patients undergo laryngectomy, which leads to the formation of volumetric defects and severe functional disorders.

Such operations are inevitably accompanied by the loss of key functions: breathing, voice and swallowing. Patients face problems of social isolation, inability to communicate, dietary restrictions and decreased professional activity. All this significantly affects their psycho-emotional state and quality of life. In recent decades, quality of life has been considered an important criterion for assessing the effectiveness of treatment in clinical medicine. There are many studies in the world literature devoted to this problem. Thus, according to European Head and Neck Society (2021), up to 70% of patients after laryngectomy experience significant difficulties in social adaptation even a year after the operation. At the same time, comprehensive rehabilitation, including surgical recovery, speech therapy and psychotherapy, can reduce the negative impact of the operation.

There are a number of standardized methods for assessing quality of life. The most commonly used are the EORTC questionnaires QLQ - C 30 and QLQ module - H & N 35, which reflect the physical, emotional and social state of patients. To assess the voice function, the VHI -30 questionnaire is used ( Voice Handicap Index ), and for swallowing analysis – the EAT -10



questionnaire ( Eating Assessment Tool ). Their use allows to objectify data and conduct dynamic observation.

The aim of the study is to evaluate the dynamics of the quality of life of patients with volumetric defects of the larynx at the stages of restorative treatment.

### **Materials and methods.**

The study included 50 patients who had undergone surgical treatment for malignant tumors of the larynx with the formation of defects of various sizes. The age of the patients ranged from 32 to 70 years; the average age was 56.4 years. Men predominated (68%), which corresponds to world statistics.

Inclusion criteria: confirmed malignant neoplasm of the larynx, resection or reconstructive intervention, patient consent to participate in the study. Exclusion criteria: presence of distant metastases, severe concomitant diseases in the decompensation stage, refusal of rehabilitation measures.

Patients were divided into three groups depending on the method of reconstruction: 1. Primary plastic surgery using autografts (skin, cartilage, muscle-cutaneous flaps). 2. Secondary reconstructive interventions performed several months after the main treatment. 3. Prosthetics (voice prostheses, airway endoprotheses). EORTC questionnaires were used to assess the quality-of-life QLQ - C 30, QLQ - H & N 35, VHI -30 and EAT -10. The study was conducted at three time points: 2-3 weeks after surgery, 6 months and 12 months. Statistical data processing was performed using descriptive statistics, comparative analysis and Student's t-test.

### **Results**

In the early postoperative period, all patients demonstrated a significant decrease in quality of life. According to the EORTC scale QLQ - C 30 average physical functioning score was 38 points, social functioning score was 24 points. More than 90% of patients experienced serious breathing difficulties, and 100% had aphonia. According to the EAT -10 scale, the average value was 28 points, which indicates severe swallowing disorders.

Positive dynamics were observed after 6 months. The average physical functioning score increased to 54 points, social functioning score to 47. The most noticeable improvement was observed in the prosthetics group, where patients reported restoration of the ability to verbal communication. According to the VHI -30, the average score in this group decreased from 92 to 46 points, which reflects a significant improvement in voice quality.

Swallowing function was gradually restored: the average score on the EAT -10 scale decreased to 15 points. However, about 28% of patients continued to experience difficulty eating solid foods, and 18% reported episodes of liquid aspiration.

After 12 months, the results improved even more. The average physical functioning score reached 72 points, social – 68, emotional – 74. More than 80% of patients did not need a permanent tracheostomy. Voice function in patients with prostheses allowed them to maintain everyday communication. According to VHI -30, the average value was 32 points, which corresponds to moderate limitations. Swallowing function also improved: the average EAT -10 score decreased to 8 points, which indicates mild impairment.



### **Discussion**

Our study showed that the quality of life of patients with laryngeal defects has a clear recovery dynamics and depends on the chosen reconstruction method. The best indicators of social adaptation are achieved with the use of voice prostheses, which is consistent with the data of foreign authors ( Mendenhall et al ., 2019). At the same time, respiratory function is most effectively restored using cartilage transplants, which form a stable framework for the larynx. Swallowing function remains the most difficult to restore. Even after a year, some patients experience difficulties in eating. Similar data are provided by Japanese researchers ( Yoshida et al ., 2020), who note that up to 25% of patients require dietary modification 12 months after surgery.

Particular attention should be paid to the psycho-emotional state of patients. According to psychological questionnaires, in the first months after surgery, more than half of the patients showed signs of depression and anxiety. The inclusion of psychotherapeutic support and speech therapy correction allowed for a significant improvement in emotional well-being indicators by the end of the first year.

An important limitation of the study is the relatively small sample and heterogeneity of reconstruction methods. Nevertheless, the results obtained confirm the need for an individualized approach. In the future, promising areas are the development of bioprostheses and the use of 3D printing technologies , which will allow the most accurate reproduction of the anatomical structures of the larynx.

### **Conclusion**

The quality of life of patients with laryngeal defects after surgical treatment remains significantly reduced in the early postoperative period. However, as rehabilitation measures are carried out and the patient adapts to new conditions, a pronounced positive trend is observed.

The most effective restoration of voice function is achieved with the use of voice prostheses, respiratory function - with cartilaginous transplants, swallowing - with skin-muscle flaps. Comprehensive rehabilitation with the participation of surgeons, speech therapists, psychologists and physical therapists is of paramount importance. Thus, the quality of life should be considered as a key criterion for the effectiveness of treatment of patients with laryngeal defects. A personalized approach to the choice of a reconstruction method, supplemented by modern rehabilitation programs, can significantly improve social adaptation and patient satisfaction with the treatment results.

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