UDC: 616.006.48:089.844
DOI: 10.52532/2663-4864-2024-1-71-51-56

RECONSTRUCTION OF A PHARYNGEAL DEFECT IN THE SURGICAL TREATMENT OF LOCALLY ADVANCED LARYNGOPHARYNGEAL CANCER: A LITERATURE REVIEW

D.N. AKHMEDIN[1,2], A.M. KUKANOVA[1], A.T. BEKISHEVA[1,2], N.M. DZHANTEMIROVA[1,2], M.S. MAULETBAYEV[1,2], A.K. MAKISHEV[1,2]

[1]«Astana Medical University» NJSC, Astana, the Republic of Kazakhstan;
[2]«Multidisciplinary Medical Center» SMI on the REM, Astana, the Republic of Kazakhstan

ABSTRACT

Relevance: *In 2022, 370 new cases of newly diagnosed patients with laryngeal cancer and 151 with laryngopharyngeal cancer were registered in the Republic of Kazakhstan, of which 12.1% of laryngeal cancer at stage IV of the disease and 18.9% of laryngeal cancer. The one-year mortality rate for laryngopharyngeal lesions was 40.5%, the ratio between one-year mortality and neglect (stage IV) was 2.3%. For T3-4 laryngopharyngeal cancer, today the only operation of choice is circular resection of the laryngopharynx with laryngectomy and the formation of stomas on the neck. The prospect of disability of patients – the formation of pharyngostomy, esophagostomy, tracheostomy, constant salivation, the need for probe nutrition, etc., causes irreparable psychological damage to the patient's personality. In this regard, the problem of pharyngeal and laryngopharyngeal reconstruction in cancer patients becomes extremely important not only as a stage of rehabilitation, but also as a necessary element in terms of antitumor treatment of this complex category of patients.*

The aim of the study *assessment of the significance of pharyngeal defect reconstruction in the surgical treatment of laryngopharyngeal cancer in order to improve the rehabilitation of cancer patients and optimize antitumor treatment.*

Methods: *Scientific publications were searched in the following databases: PubMed, Medline, eLi-brary, Cochrane Lab, using the scientific search engine Google Scholar. Criteria for inclusion of publications in the literary review: publications in Russian and English; publications included in the PubMed, Medline, e-Library databases; publications with clearly formulated conclusions; publications over the past 10 years. Criteria for excluding publications in the literary review: summaries, reports; articles with paid access; abstracts. A total of 82 sources were found, and 8 sources were included in the analysis.*

Results: *The analysis of the world literature made it possible to widely consider the possibility of performing reconstructive plastic surgery using visceral autografts at the stage of surgical treatment of patients with pharyngeal edema. At the same time, the literature describes significant reductions in the duration of rehabilitation and improvement of the quality of life of patients, as well as a decrease in the level of disability of operated patients.*

Conclusion: *Primary plasty of defects that occur after surgical treatment of laryngopharyngeal cancer, using local tissues, displaced and free flaps, is undoubtedly the most appropriate way to speed up the rehabilitation of patients and improve the quality of life in the shortest possible time.*

Keywords: *laryngopharyngeal cancer, reconstruction of the pharynx and cervical esophagus, viscer-al flap, fasciocutaneous flap, musculocutaneous flap.*

Introduction: In the Republic of Kazakhstan for 2022, there has been an increase in the incidence of malignant neoplasms, with 35,079 new cases being registered for the first time in life (vs. 32,572 cases in 2021). This marks an increase by 2,507 cases, or 7.7% compared to the previous year (vs. an increase by 2,871 cases, or 9.7% a year before) [1]. Regarding laryngeal cancer, the highest standardized mortality rate was observed in men – 152 cases, or 2.2‰ (vs. 2.2‰ in 2021). In women, the mortality rate was considerably lower – 11 cases, or 0.2‰ (vs. 22 cases, or 0.3‰) [1]. It should be noted that in 2022, the proportion of laryngopharyngeal cancer cases diagnosed postmortem out of all new cases was equal to 3 [1]. Despite advances in diagnosis and treatment, there remains a high one-year mortality rate in laryngopharyngeal cancer, with a rate of 20.8% in 2022 (compared to 19.8% in 2021). The correlation rates between one-year mortality and stage IV cancer were relatively unchanged compared to 2021, with rates of 2.8 and 2.3 for laryngeal and pharyngeal cancer, respectively [1].

Preventive screenings were found to be highly effective in detecting laryngopharyngeal cancer among all cancer localizations, with detection rates notably increasing from 27% in 2021 to 47% in 2022. However, despite the overall increase in cancer detection rates, early detection of laryngeal cancer experienced a decline. Specifically, the rate of early detection decreased from 38.6% in 2021 to 19.7% in 2022 [1].

In laryngeal cancer, a 100% verification rate was achieved in 14 regions of the Republic of Kazakhstan, including Abay, Aktobe, Almaty, Atyrau, East Kazakhstan, Zhambyl, West Kazakhstan, Karaganda, Kostanay, Man-

gistau, North Kazakhstan, Turkestan regions, as well as the cities of Astana and Almaty. However, low verification rates were observed in the Kyzylorda region, with 66.7% being the lowest result, followed by the Akmola region with 82.4% and the city of Shymkent with 85.7% [1].

Treatment of patients with tumors in socially and functionally significant areas presents a notable challenge. This challenge arises primarily due to the prevalence of patients with stage III-IV tumor processes, coupled with the insufficient use of the most effective treatment modalities and the rare detection of the disease in the early stages [2]. It is essential to note that only a fraction, specifically 19.1%, of patients with locally advanced processes receive comprehensive treatment. This treatment approach ideally encompasses not only surgical and radiation methods, but also antitumor chemotherapy [3]. However, radio- and chemoresistance is observed in a significant number of patients, further complicating treatment outcomes. For patients who experience recurrent tumors, which occur in 20-40% of cases despite modern treatment methods, surgical intervention remains the main treatment mode [4]. Specifically, in cases of T3-4 laryngopharyngeal cancer, circular resection of the larynx with laryngectomy [5] and the formation of a neck stoma remain the preferred surgical options [6]. These procedures continue to be the operation of choice in current medical practice.

Despite ongoing advances in combined treatment methods for advanced upper aerodigestive tract cancer, it is not uncommon to encounter extensive gaping defects in the laryngopharynx and cervical esophagus as a complication. In numerous cases, organ-preserving surgeries in the larynx and laryngopharynx end with the creation of a planned pharyngo-esophagostomy without subsequent reconstruction [7].

The study aimed to assess the importance of pharyngeal defect reconstruction in the surgical treatment of laryngopharyngeal cancer aims to enhance the rehabilitation of cancer patients and optimize antitumor therapy.

Methods: The literature review incorporated an analysis of oncology service indicators in the Republic of Kazakhstan for 2022, sourced from "Kazakh Research Institute of Oncology and Radiology" JSC under the Ministry of Health of the Republic of Kazakhstan. Additionally, scientific publications were sourced from databases including PubMed, Medline, e-Library, and Cochrane Lab, supplemented by searches through Google Scholar. The search encompassed the last 10 years. *Inclusion criteria comprised publications* in Russian and English languages, availability in PubMed, Medline, and e-Library databases, clear formulation of conclusions, and publication within the last decade. Exclusion criteria included abstracts, reports, articles with paid access, and theses. A total of 82 sources were identified, with 30 sources meeting the inclusion criteria after review.

Results: According to the literature review, distinguishing whether a tumor originates in the pharynx or larynx in cases of disseminated processes that affect both areas can be challenging. The exact diagnosis can only be established by carefully examining the initial clinical signs, preoperative evaluations, and subsequent surgical findings. Persistent hoarseness followed by symptoms of stenosis and pain often suggests a laryngeal origin. On the contrary, if the initial clinical manifestation involves difficulty swallowing solid food followed by respiratory distress, it indicates the presence of a tumor originating in the laryngopharynx and extending into the larynx [8].

Studies by Artemyev et al. have identified two primary factors for distinguishing between pharyngeal-laryngeal tumors (originating in the laryngopharynx with spread to the larynx) and laryngeal-pharyngeal tumors [9]. In the first case, the integrity of the laryngeal mucosa plays a role, while in the latter case, lesions occur in the laryngopharyngeal process. Pharyngeal tumors that penetrate the larynx affect the tissues beneath the mucosa without significant changes to the laryngeal mucosa itself. Even in cases of significant airway narrowing, these tumors typically do not affect the vocal cords for an extended period. Generally, tumors originating from the pharynx affect the posterior portion of the larynx, the interarytenoid region, the aryepiglottic fold, and the adjacent half of the larynx (Figure 1 - photo by the authors). Research has shown that the initial site of tumor development is the first to undergo ulceration and necrosis, helping to understand the direction of the tumor process [8].

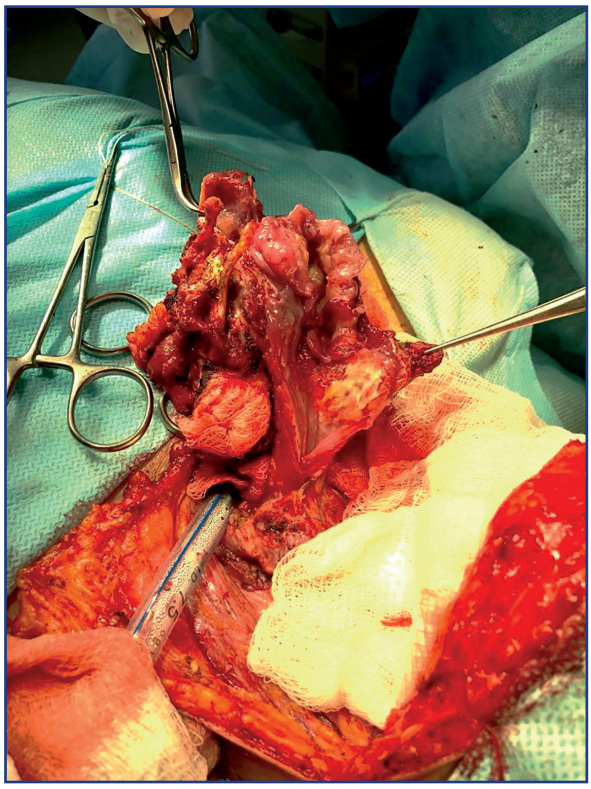

Figure 1 - Laryngopharyngeal cancer
[photo provided by the authors]

Conventional treatment for locally advanced operable laryngopharyngeal cancer involves laryngectomy with partial or circular resection of the pharynx, followed by radiation or chemoradiation therapy [9]. Resected tissues typically include the larynx, laryngopharyngeal mucosa (partially or completely) and often the cervical esophagus if the tumor has spread to a low extent. Due to

the volume of tissue removed, primary pharyngeal tube plasty with local tissues is often not feasible due to tissue deficiency. Consequently, the procedure commonly concludes with suturing the remaining pharyngeal mucosa to the skin, resulting in the formation of a pharyngostoma, or oro- and esophagostoma in the cases of circular resection (see Figure 2).

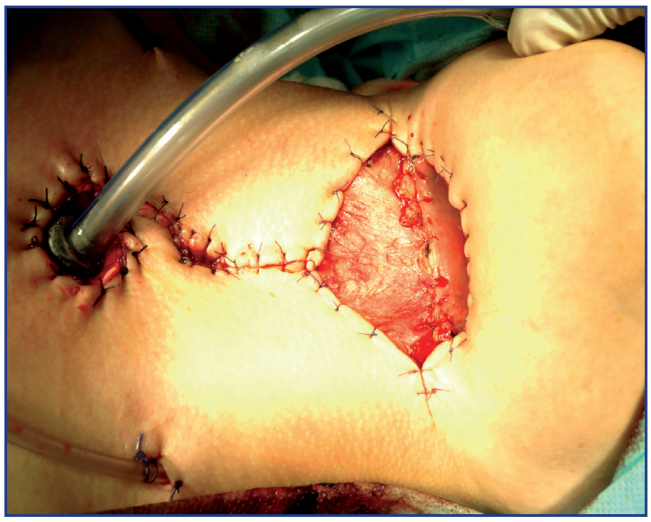

Figure 2 – Esopharyngostoma [photo provided by the authors]

The quality of life of these patients is significantly reduced due to prolonged tube feeding (delayed plasty is typically performed 3-6 months after radiation treatment after surgery) and an extensive oroesophagostoma, which requires regular hygienic care [8].

The primary objective of laryngopharyngeal reconstruction is to restore the natural passage of food from the oral cavity to the stomach, as well as to address aesthetic concerns. The plastic surgeon is tasked with the challenge of replacing defects in the internal lining of the laryngopharynx and the external neck coverings in a single stage while maintaining adequate lumen in the reconstructed section of the digestive tract [10]. The choice of reconstruction method depends on the size of the pharyngeal defect, the extent of esophageal involvement (circular and partial resection), lesions of adjacent structures, and the surgeon's preference. The literature extensively discusses various techniques to restore pharyngeal continuity, including the use of gastroesophageal flaps (Figure 3), small and large intestine fragments. For defects involving the pharynx and cervical esophagus, the jejunum and radial flap are among the most commonly used methods [11, 12].

Surgeons have increasingly turned to using displaced skin and fat flaps from various thoracic regions for reconstruction of the pharynx and cervical esophagus, opting for tissues that are not affected by radiation therapy.

The deltopectoral flap offers several advantages, including the ease of forming a large flap size, its thin and flexible structure that closely matches the texture and color of the head and neck tissues. The flap harvesting does not affect the muscular structures of the chest and shoulder, and the donor area can be concealed under clothing, avoiding exposure. However, drawbacks of the deltopectoral flap include possible deformation of the covering tissues in the donor area, particularly in women, which can lead to scar deformation of the breast and nipple, and increased hairiness in men, resulting in hair growth in the reconstructed area, causing discomfort. Furthermore, experience has revealed the susceptibility of the flap's adipose tissue to infection and the susceptibility of saliva lytic enzymes.

Currently, the most justified approach involves using free skin facial flaps, such as radial (Figure 5) and anterolateral femoral flaps. This approach is associated with reduced trauma, improved rehabilitation, and satisfactory functional outcomes [13,14].

In the study by Kumar et al. [14], published in 2023, the clinical and functional results of the pharyngeal reconstruction with jejunum and cutaneous fascial flaps (radial and anterolateral femoral) were analyzed. Parameters such as duration of hospitalization, stay in the intensive care unit, presence of fistulas, necrosis, stricture formation, as well as swallowing and the tracheoesophageal speech function were evaluated. The findings indicate excellent clinical and functional outcomes, with minimal damage to the donor site and rapid rehabilitation observed with the use of the anterolateral femoral flap.

In a study by Balasubramanian et al., it was observed that patients who received cutaneous fascial flaps showed superior rehabilitation in terms of speech and swallowing recovery compared to those who underwent jejunum reconstruction [15].

According to Razdan et al., the use of a radial flap enables patients to attain speech capabilities comparable to those who underwent installation of a tracheoesophageal shunt following standard laryngectomy [16].

The use of a free fascial flap from the flexor surface of the forearm, harvested with a vascular pedicle of the radial artery, was pioneered in China in 1978. This 'Chinese flap' was detailed in 1981-1982 [17]. The graft demonstrates good tolerance to prolonged periods of anoxia (up to 8 hours) and can be recommended for trainee microsurgeons. However, it is essential to perform an Allen test preoperatively to rule out forearm artery anomalies that can impede flap harvesting, ensuring the preservation of the upper limb blood supply.

If adjacent structures such as skin and subcutaneous tissue are affected, or in the presence of previous radiation therapy, restoration of the continuity of the pharynx and esophagus may require resection of the affected structures with subsequent plastic replacement of the defect. In such cases, the most commonly used method involves a skin-muscle flap with inclusion of the pectoralis major muscle [18, 19].

Ratushny M.V. [7] described the work of Rebrikova, who used bioengineered flaps to reconstruct oropharyngeal defects in 28 patients. The procedures included autotransplantation of 3 microsurgical flaps from the fibers of the rectus abdominis muscle, 20 displaced muscle or skin-muscle flaps with inclusion of the large pectoral muscle, 2 displaced flaps with inclusion of the latissimus dorsi muscle, and 3 displaced muscle flaps of the cheek. In all cases, au-

tologous mucosa was implanted on the fascial layer of the flaps. This technique of reconstruction with composite autologous bioengineered flaps has been proven effective and has successfully addressed defects in the pharyngeal, oropharyngeal, and oral cavities in 96.4% of cases.

Discussion: In 35.4% of cases of laryngopharyngeal cancer and 32.2% of laryngeal cancer, intraoperative restoration of the pharyngeal tube is feasible through maximal preservation of the unaffected mucosa on the opposite side of the tumor, along with its mobilization and plastic formation of neopharynx. However, when faced with extensive processes, surgeons face a dilemma: whether to perform primary replenishment of the pharyngeal tissue deficit by prolonging the operation time and forming displaced or free flaps to close the defect, or opt for pharyngostomy, pharyngo-esophagostomy and secondary plasty, typically performed 1-2 months after operative radiation therapy. The choice of the latter method is often motivated by somatic concerns of the patient, the reluctance to delay the operation, and the simplification of postoperative observation with respect to recurrence. In our experience, we emphasize the importance of prioritizing primary plasty over delayed approaches when the surgeon has the necessary experience and technical capabilities. Prolonged reliance on tube feeding can weaken the patient's organism due to weight loss and the development of vitamin and immune deficiencies, indirectly contributing to disease recurrence. Numerous studies report 5-year survival rates of 10-28% for advanced laryngopharynx tumor processes. Therefore, it is arguably preferable to save the patient from months of tube feeding and subsequent plastic surgery, offering a better quality of life. Regular patient follow-up and standard investigative methods (such as fibroscopy, neck ultrasound, computed tomography, and magnetic resonance imaging) aid in accurately detecting disease recurrence.

These aspects require the introduction of various primary reconstruction techniques for post-resection defects of the laryngopharynx and cervical esophagus into widespread clinical practice.

Conclusion: In the cases of advanced laryngopharyngeal tumors, physicians must decide between primary plasty and delayed reconstruction. Primary plasty offers the advantage of improving the patient's quality of life by avoiding prolonged tube feeding and subsequent surgeries. Consistent follow-up and standard investigative methods aid in identifying disease recurrence. The adoption of various primary reconstruction methods into common clinical practice will notably improve treatment outcomes.

References:

1. Kaidarova D.R., Shatkovskaya O.V., Ongarbaev B.T., Seisenbaeva G.T., Azhmagambetova A.E., Zhylkaydarova A.Zh., Lavrent'eva I.K., Sagi M.S. Pokazateli onkologicheskoj sluzhby Respubliki Kazaxstan za 2022 god (statisticheskie i analiticheskie materialy) / pod red. D.R. Kajdarovoj. – Almaty: KazNIIOiR, 2023. – 434 s [Kaidarova D.R., Shatkovskaya O.V., Ongarbaev B.T., Seisenbaeva G.T., Azhmagambetova A.E., Zhylkaidarova A.Zh., Lavrentyeva I.K., Sagi M.S. Indicators of the oncological service of the Republic of Kazakhstan for 2022 (statistical and analytical materials) / ed. D.R. Kaidarova. – Almaty: KazNIIOiR, 2023. – 434 p. (in Russ/Kaz/En)]. https://onco.kz/wp-content/uploads/2023/09/pokazateli_2022_web.pdf

2. Petrova G.V., Kaprin A.D., Starinskij V.V., Grecova O.P. Zabolevaemost' zlokachestvennymi novoobrazovaniyami naseleniya Rossii // Onkologiya. Zhurnal im. P.A. Gercena. – 2014. – №3(5). – S. 5-10 [Petrova G.V., Kaprin A.D., Starinsky V.V., Gretsova O.P. Incidence of malignant neoplasms in the Russian population // Oncology. Journal named after P.A. Herzen. – 2014. – Vol. 3(5). – P. 5-10 (In Russ.)]. https://www.mediasphera.ru/issues/onkologiya-zhurnal-im-p-a-gertsena/2014/5/522305-218X2015051?lang=ru

3. Chizhevskaya S.Yu. Sovremennye podxody povysheniya e'ffektivnosti kombinirovannogo lecheniya i ocenka kachestva zhizni bol'nyx rakom gortani i gortanoglotki: Avtoref. dis. … dok. med. nauk: 14.01.12. – Tomsk: FGBU «Nauchno-issledovatel'skij institut onkologii» SO RAMN, 2013. – 47 s [Chizhevskaya S.Yu. Modern approaches to increasing the effectiveness of combined treatment and assessing the quality of life of patients with cancer of the larynx and hypopharynx: Author's abstract. dis. ...doc. honey. Sciences: 01/14/12. – Tomsk: Federal State Budgetary Institution "Research Institute of Oncology" SB RAMS, 2013. – 47 p. (in Russ.)]. https://medical-diss.com/medicina/sovremennye-podhody-povysheniya-effektivnosti-kombinirovannogo-lecheniya-i-otsenka-kachestva-zhizni-bolnyh-rakom-gortani-

4. Gordon K.B., Gulidov I.A., Semyonov A.V., Radzhapova M.U., Sevryukov F.E. Rannie rezul'taty luchevoj terapii mestnorasprostranyonnogo raka organov golovy i shei v rezhime uskorennogo frakcionirovaniya // Radiaciya i risk (Byulleten' NRE'R). – 2018. – №27(2). – C. 107-116 [Gordon K.B., Gulidov I.A., Semenov A.V., Rajapova M.U., Sevryukov F.E. Early results of radiation therapy for locally advanced head and neck cancer in the accelerated fractionation mode // Radiation and risk (NRER Bulletin). – 2018. – Vol. 27(2). – P. 107-116 (in Russ.)]. https://doi.org/10.21870/0131-3878-2018-27-2-107-116

5. Kaprin A.D., Reshetov I.V., Ratushnyj M.V., Kravcov S.A., Polyakov A.P., Matorin O.V., Sevryukov F.E., Filyushin M.M., Vasil'ev V.N., Rebrikova I.V. Mikroxirurgicheskaya rekonstrukciya tkanej golovy i shei visceral'nymi autotransplantatami, sformirovannymi iz mini-dostupa // Opuxoli golovy i shei. – 2015. – №2. – S. 14-19 [Kaprin A.D., Reshetov I.V., Ratushny M.V., Kravtsov S.A., Polyakov A.P., Matorin O.V., Sevryukov F.E., Filyushin M.M., Vasiliev V. N., Rebrikova I.V. Microsurgical reconstruction of head and neck tissues with visceral autografts formed from a mini-access // Tumors of the head and neck. – 2015. – Vol. 2. – P. 14-19 (in Russ.)]. https://doi.org/10.17650/2222-1468-2015-5-2-14-19

6. Ratushnyj M.V., Polyakov A.P., Sidorov D.V., Troickij A.A., Matorin O.V., Sevryukov F.E., Filyushin M.M. Mikroxirurgicheskaya rekonstrukciya ae'rodigestivnogo trakta tolstokishechno-podvzdoshnym autotransplantatom u bol'nogo rakom gortanoglotki // Onkologiya. Zhurnal im. P.A. Gercena. – 2014. – №4. – S. 34-42 [Ratushny M.V., Polyakov A.P., Sidorov D.V., Troitsky A.A., Matorin O.V., Sevryukov F.E., Filyushin M.M. Microsurgical reconstruction of the aerodigestive tract with a colon-ileal autograft in a patient with laryngopharyngeal cancer // Oncology. P.A. Herzen Journal. – 2014. – Vol. 4. – P. 34-42 (in Russ.)]. https://cyberleninka.ru/article/n/mikrohirurgicheskaya-rekonstruktsiya-aerodigestivnogo-trakta-tolstokishechno-podvzdoshnym-autotransplantatom-u-bolnogo-rakom

7. Ratushnyj M.V., Reshetov I.V., Polyakov A.P., Kravcov S.A., Rebrikova I.V., Babaskina N.V. Rekonstruktivnye operacii na glotke u onkologicheskix bol'nyx // Onkologiya. Zhurnal im. P.A. Gercena. – 2015. №4(4). – S. 57-63 [Ratushny M.V., Reshetov I.V., Polyakov A.P., Kravtsov S.A., Rebrikova I.V., Babaskina N.V. Reconstructive operations on the pharynx in cancer patients // Oncology. P.A. Herzen Journal. – 2015. – Vol. 4(4). – P. 57-63 (in Russ.)]. https://doi.org/10.17116/onkolog20154457-63 Ostrinskaya T.V., Zhumankulov A.M., Anisimova A.V. Rekonstrukciya postoperacionnyx defektov pri opuxolyax gortanoglotki i shejnogo otdela pishhevoda // Opuxoli golovy i shei. – 2017. – №7(3). – S. 39-46 [Ostrinskaya T.V., Zhumankulov A.M., Anisimova A.V. Reconstruction of postoperative defects in tumors of the hypopharynx and cervical esophagus // Tumors of the head and neck. – 2017. – Vol. 7(3). – P. 39-46 (in Russ.)]. https://doi.org/10.17650/2222-1468-2017-7-3-39-46

8. Artem'ev S.S., Radzhabova Z.A., Nazhmudinov R.A., Kotov M.A., Artem'eva E.V., Radzhabova M.A. Rezul'taty lecheniya pacientov s mestnorasprostranennym rakom orofaringeal'noj oblasti // Med. Alfavit. – 2020. – №20. – S. 46-48 [Artemyev S.S., Radzhabova Z.A., Nazhmudinov R.A., Kotov M.A., Artemyeva E.V., Radzhabova M.A. Results of treatment of patients with locally advanced cancer of the oropharyngeal region // Med. Alphabet. – 2020. – Vol. 20. – P. 46-48 (in Russ.)]. https://doi.org/10.33667/2078-5631-2020-20-46-48

9. Xodorkovskij M.A., Petrov B.V., Skorynin O.S., Xodorkovskij M.M. Vyorichnyje rekonstrukcii pri postresektsionnyx defektax tkanej golovy i shei // Golova i sheja. – 2015. – Vol. 3. – S. 59 [Khodorkovsky M. A., Petrov B. V., Skorynin O. S., Khodorkovsky M. M. Secondary reconstructions for post-resection tissue defects of the head and neck // Head and Neck.

– 2015. – Vol. 3. – P. 59 (in Russ.)]. https://hnj.science/wp-content/uploads/2020/08/3-2015-1.pdf

10. Anthony J.P., Singer M.I., Mathes S.J. Pharyngoesophageal reconstruction using the tubed free radial forearm flap // Clin. Plast. Surg. – 1994. – Vol. 21. – P. 137-147. https://pubmed.ncbi.nlm.nih.gov/8112007/

11. Chew K.Y., Kok Y.O., Ong W.L., Tan B.K. Coverage of anterior mediastinal tracheostomy with bipedicled anterolateral thigh flap // JPRAS Open. – 2021. – Vol. 28. – P. 4-9. https://doi.org/10.1016/j.jpra.2021.01.007

12. Gasteratos K., Vlachopoulos N., Kokosis G., Goverman J. Efficacy and Safety of Microsurgical Pharyngolaryngeal and Pharyngoesophageal Reconstruction: A Systematic Review of the Literature // Plast. Reconstr. Surg. Glob. Open. – 2023. – Vol. 11(4). – P. 4958. https://doi.org/10.1097/GOX.0000000000004958

13. Kumar V., Kalwani R., Bindu A., Mathews S., Mantri M., Jaiswal D., Shankhdhar V.K. Comparison of Functional Outcomes of Intestinal Flaps Vs Tubed Fasciocutaneous Flaps for Circumferential Pharyngoesophageal Defects-an Indian Perspective // Indian J. Surg. Oncol. – 2023. – Vol. 14(3). – P. 668-676. https://doi.org/10.1007/s13193-023-01723-x

14. Balasubramanian D., Subramaniam N., Rathod P., Murthy S., Sharma M., Mathew J., Thankappan K., Iyer S. Outcomes following pharyngeal reconstruction in total laryngectomy – Institutional experience and review of literature // Indian J. Plast. Surg. – 2018. – Vol. 51(2). – P. 190-195. https://doi.org/10.4103/ijps.IJPS_79_17

15. Razdan S.N., Albornoz C.R., Matros E., Paty P.B., Cordeiro P.G. Free Jejunal Flap for Pharyngoesophageal Reconstruction in Head and Neck Cancer Patients: An Evaluation of Donor-Site Complications // J. Reconstr. Microsurg. – 2015. – Vol. 31(9). – P. 643-6. https://doi.org/10.1055/s-0035-1556872

16. Marra C., Pinto V., Benanti E., De Maria F., Pinelli M., Spaggiari A., De Santis G. Radial forearm flap versus antero-lateral thigh flap in oral soft tissue reconstruction: update and statistical analysis on our 77 consecutive cases for an objective selection criteria // Acta Biomed. – 2023. – Vol. 94(5). – P. 2023252. https://doi.org/10.23750/abm.v94i5.15174

17. Escandón J.M., Santamaría E., Prieto P.A., Duarte-Bateman D., Ciudad P., Pencek M., Langstein H.N., Chen H.C., Manrique O.J. Reconstruction of Pharyngolaryngeal Defects with the Ileocolon Free Flap: A Comprehensive Review and How to Optimize Outcomes // Arch. Plast. Surg. – 2022. – Vol. 49(3). – P. 378-396. https://doi.org/10.1055/s-0042-1748652

18. Hanubal K.S., Chheda N.N., Dziegielewski P.T. Neopharyngeal Stricture following Laryngectomy // Semin. Plast. Surg. – 2022. – Vol. 37(1). – P. 31-38. https://doi.org/10.1055/s-0042-1759796

АҢДАТПА

КӨМЕЙ-ЖҰТҚЫНШАҚТЫҢ ЖЕРГІЛІКТІ ІСІГІН ХИРУРГИЯЛЫҚ ЕМДЕУДЕ ЖҰТҚЫНШАҚ АҚАУЫН ҚАЛПЫНА КЕЛТІРУ: ӘДЕБИЕТКЕ ШОЛУ

Д.Н. Ахмедин[1,2], А.М. Куканова[1], А.Т. Бекишева[1,2], Н.М. Джантемирова[1,2], М.С. Маулетбаев[1,2], А.К. Макишев[1,2]

[1]«Астана Медициналық уУниверситеті» ҚеАҚ, Астана, Қазақстан Республикасы;
[2]«Көпсалалы медициналық орталық» ШЖҚ МКК, Астана, Қазақстан Республикасы

Өзектілігі: *2022 жылы Қазақстан Республикасында алғаш рет көмей обыры және 151 көмей обыры бар науқастардың 370 жаңа жағдайы тіркелді, оның ішінде аурудың IV сатысында көмей обырының 12.1% және көмей обырының 18.9%. Көмейдің зақымдануы кезіндегі бір жылдық өлім – жітім көрсеткіші 40,5%, бір жылдық өлім-жітім мен қараусыз қалу (IV кезең) арасындағы арақатынас – 2,3% құрады. Т3-4 көмей-жұтқыншақ қатерлі ісігі кезінде бүгінгі таңда ларингоэктомиямен және мойын стомасының пайда болуымен көмей-жұтқыншақтың дөңгелек резекциясы ғана таңдау операциясы болып қала береді. Пациенттерді мүгедектікке ұшырату перспективасы-фарингостоманың, эзофагостоманың, трахеостоманың қалыптасуы, үнемі сілекейдің ағуы, түтікпен тамақтану қажеттілігі және т.б., науқастың жеке басына орны толмас психологиялық зиян келтіреді. Осыған байланысты онкологиялық науқастарда жұтқыншақ пен көмейді қалпына келтіру проблемасы оңалту кезеңі ретінде ғана емес, сонымен қатар пациенттердің осы күрделі санатындағы ісікке қарсы емдеу түрғысынан қажетті элемент ретінде өте маңызды болып табылады.*

Зерттеудің мақсаты. *Онкологиялық науқастарды оңалтуды жақсарту және ісікке қарсы емдеуді оңтайландыру мақсатында оның таралуы мен өлімі туралы статистикаға сүйене отырып, көмейдің қатерлі ісігін хирургиялық емдеуде жұтқыншақ ақауын қалпына келтірудің маңыздылығын бағалау.*

Әдістері: *Ғылыми басылымдар Google Scholar ғылыми іздеу жүйесі арқылы PubMed, Medline, e-Library, CochraneLab дерекқорларында іздестірілді. Іздеу тереңдігі – 115 жыл. Әдебиеттік шолуға жарияланымдарды енгізу критерийлері: орыс және ағылшын тілдеріндегі басылымдар; PubMed, Medline, e-Library дерекқорларына енгізілген басылымдар; тұжырымдары нақты тұжырымдалған басылымдар; соңғы 10 жылдағы жарияланымдар. Әдеби шолуда жарияланымдарды алып тастау критерийлері: қысқаша мазмұнды баяндамалар; ақылы қолжетімді мақалалар; тезистер. Барлығы 82 дереккөз табылды. Жарияланымдарды қарап шыққаннан кейін әдебиет шолуына 8 дереккөз енгізілді.*

Нәтижелері: *Әлемдік әдебиеттерді талдау жұтқыншақтың қатерлі ісіктері бар науқастарды хирургиялық емдеу сатысында висцералды автотрансплантаттарды қолдану арқылы реконструктивтік пластикалық хирургиялық әдістерді қолдану мүмкіндігін кеңінен қарастыруға мүмкіндік берді. Сонымен бірге, әдебиеттерде оңалту кезеңінің айтарлықтай қысқаруы және пациенттердің өмір сүру сапасының жақсаруы, сондай-ақ операция жасалған науқастардың мүгедектік деңгейінің төмендеуі сипатталады.*

Қорытынды: *Көмей-жұтқыншақ қатерлі ісігін хирургиялық емдеуден кейін пайда болған ақауларды жергілікті тіндерді, ығысқан және бос тін кесінділерін пайдалана отырып, біріншілік пластика жасау науқастардың оңалтуын жеделдету және қысқа мерзімде өмір сүру сапасын жақсартудың ең қолайлы әдісі екені сөзсіз.*

Түйінді сөздер: *көмей-жұтқыншақ қатерлі ісігі, жұтқыншақтың және жұтқыншақ пен өңештің мойын бөлігінің реконструкциясы, висцералды тін кесігі, фасцио-тері кесігі, бұлшықет-тері кесігі.*

АННОТАЦИЯ

РЕКОНСТРУКЦИЯ ДЕФЕКТА ГЛОТКИ В ХИРУРГИЧЕСКОМ ЛЕЧЕНИИ МЕСТНО-РАСПРОСТРАНЕННОГО РАКА ГОРТАНОГЛОТКИ: ОБЗОР ЛИТЕРАТУРЫ

Д.Н. Ахмедин[1,2], А.М. Куканова[1], А.Т. Бекишева[1,2], Н.М. Джантемирова[1,2], М.С. Маулетбаев[1,2], А.К. Макишев[1,2]

[1]НАО «Медицинский Университет Астана», Астана, Республика Казахстан;
[2]ГКП на ПХВ «Многопрофильный медицинский центр», Астана, Республика Казахстан

Актуальность: *В 2022 году в Республике Казахстан было зарегистрировано 370 новых случаев впервые выявленных больных с раком гортани и 151 случай – с раком гортаноглотки, из них 12,1% рака гортани было на IV стадии заболевания, а 18,9% – рака гортаноглотки. Показатель одногодичной летальности при поражении гортаноглотки составил 40,5%, соотношение между одно-*

годичной летальностью и запущенностью (IV стадия) – 2,3%. При раке гортаноглотки Т3-4 на сегодняшний день операцией выбора остается лишь циркулярная резекция гортаноглотки с ларингоэктомией и формированием стом на шее. Перспектива инвалидизации пациентов (формирование фарингостомы, эзофагостомы, трахеостомы, постоянное слюнотечение, необходимость зондового питания и т.д.) наносит непоправимый психологический ущерб личности пациента. В связи с этим проблема реконструкции глотки и гортаноглотки у онкологических больных становится ключевым фактором не только как этап реабилитации, но и как необходимый элемент в плане противоопухолевого лечения этой сложной категории пациентов.

***Цель исследования** – оценка значимости реконструкции дефекта глотки в хирургическом лечении рака гортаноглотки с целью улучшения реабилитации онкологических больных и оптимизации противоопухолевого лечения.*

***Методы:** Поиск научных публикаций был произведен в следующих базах данных: PubMed, Medline, e-Library, Cochrane Lab, при помощи научной поисковой системы Google Scholar. Критерии включения публикаций в литературный обзор: публикации на русском и английском языках; публикации, включенные в базы PubMed, Medline, e-Library; публикации с четко сформулированными выводами; публикации за последние 10 лет. Критерии исключения публикаций в литературный обзор: резюме, доклады, статьи с платным доступом, тезисы. Всего было найдено 82 источника, в анализ включено 30 научных публикаций.*

***Результаты:** Анализ мировой литературы позволил широко рассмотреть вопрос о возможности выполнения реконструктивно-пластических операций с использованием висцеральных аутотрансплантатов на этапе хирургического лечения больных с ЗНО глотки. В литературе описываются значительные сокращения сроков реабилитации и улучшения качества жизни пациентов, а также снижение уровня инвалидизации оперированных больных.*

***Заключение:** Первичная пластика дефектов после хирургического лечения рака гортаноглотки с использованием местных тканей, перемещенных и свободных лоскутов представляет собой наилучший способ обеспечения быстрой реабилитации пациентов и повышения качества их жизни.*

***Ключевые слова:** рак гортаноглотки, реконструкция глотки и шейного отдела пищевода, висцеральный лоскут, кожно-фасциальный лоскут, кожно-мышечный лоскут.*

***Transparency of the study:** Authors take full responsibility for the content of this manuscript.*
***Conflict of interest:** Authors declare no conflict of interest.*
***Financing:** Authors declare no financing of the study.*
***Authors' input:** contribution to the study concept – Makishev A.K., Akhmedin D.N.; study design – Akhmedin D.N., Bekisheva A.T., Kukanova A.M.; execution of the study – Akhmedin D.N., Mauletbayev M.S.; interpretation of the study – Akhmedin D.N., Bekisheva A.T.; preparation of the manuscript – Akhmedin D.N., Kukanova A.M., Makishev A.K.*
Authors' data:
Akhmedin Darkhan Nagyskhanovich (corresponding author) – assistant at Oncology department, "Astana Medical University" NpJSC; oncologist, "Multidisciplinary Medical Center" SMI on REM, Astana, the Republic of Kazakhstan, tel. +77018338211, e-mail: darhan_ah@mail.ru, ORCID ID: 0000-0002-1343-1681;
Kukanova Asiya Maratovna – Ph.D. student, assistant at Oncology Department, "Medical University Astana" NpJSC; junior researcher, National Laboratory Astana, the Republic of Kazakhstan, tel. +77002996714, e-mail: kukanova.a@amu.kz, ORCID ID: 0000-0001-6775-2993;
Bekisheva Aizhan Tanirbergenovna – Ph.D., Associate Professor, Oncology Department, "Astana Medical University" NpJSC; oncologist, "Multidisciplinary Medical Center" SMI on REM, Astana, the Republic of Kazakhstan, tel. +77472942644, e-mail: 19860317@mail.ru, ORCID ID: 0000-0001-7292-8033;
Dzhantemirova Nazgul Maratovna – Ph.D. student, assistant at Oncology Department, "Astana Medical University" NpJSC; oncologist, oncologist of "Multidisciplinary Medical Center" SMI on REM, Astana, the Republic of Kazakhstan, tel. +77475769705, e-mail: dhantemirova.nm@gmail.com, ORCID ID: 0000-0001-9430-4299;
Mauletbaev Marat Serikovich – PhD, Associate Professor, Oncology Department, NAO "Astana Medical University" NpJSC; oncologist, "Multidisciplinary Medical Center" SMI on REM, Astana, the Republic of Kazakhstan, tel. +77015543152, e-mail: mauletbaev@mail.ru, ORCID ID: 0000-0003-4243-3595;
Makishev Abay Kairgojinovich – Doctor of medical sciences, Professor, Head of Oncology Department, "Astana Medical University" NpJSC; oncologist, "Multidisciplinary Medical Center" SMI on REM, Astana, the Republic of Kazakhstan, tel. +77015225412, e-mail: makishev.a@amu.kz, ORCID ID: 0000-0001-9430-4299.

***Address for correspondence:** Akhmedin D.N., Department of Oncology, "Medical University Astana" NpJSC, Manas St. 17, Astana 010000, the Republic of Kazakhstan.*