

MONITORING OF INFLAMMATORY MARKERS IN EARLY AND LATE POSTOPERATIVE PERIODS AFTER SURGICAL INTERVENTION FOR BENIGN VASCULAR NEOPLASMS OF THE NASAL CAVITY



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БУРУН БЎШЛИГИДАГИ ХАВФСИЗ ҚОН ТОМИР ЎСМАЛАРИНИ ЖАРРОҲЛИК ЙЎЛИ БИЛАН ОЛИБ ТАШЛАШДАН КЕЙИН ЭРТА ВА КЕЧКИ ОПЕРАЦИЯДАН КЕЙИНГИ ДАВРЛАРДА ЯЛЛИГЛАНИШ КЎРСАТКИЧЛАРИНИ КУЗАТИШ

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МОНИТОРИНГ ВОСПАЛИТЕЛЬНЫХ ПОКАЗАТЕЛЕЙ В РАННЕМ И ПОЗДНЕМ ПОСЛЕОПЕРАЦИОННОМ ПЕРИОДАХ ПРИ ХИРУРГИЧЕСКОМ ВМЕШАТЕЛЬСТВЕ ПО ПОВОДУ ДОБРОКАЧЕСТВЕННЫХ ВАСКУЛЯРНЫХ НЕОПЛАЗИЙ ПОЛОСТИ НОСА

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Резюме. Бурун бўшлигидаги хавфсиз қон томир ўсмаларини жарроҳлик йўли билан олиб ташлаш ушбу патологияни даволашнинг асосий терапевтик ёндашувларидан бири ҳисобланади. Шу билан бирга, операциядан кейинги давр кўпинча турли даражадаги яллигланиш реаксияларининг ривожланиши билан тавсифланади, бу ўтказилган даволашнинг самарадорлигини потенциал равишда пасайтиради ва беморларнинг субъектив фаровонлигига салбий таъсир кўрсатади. Жарроҳлик амалиётидан кейин яллигланиш жараёнининг интенсивлигини кузатиш ва тартибга солиш долзарблиги, жарроҳлик техникаси ва антимикроб дори воситаларини ишлаб чиқариш соҳасидаги сезиларли ютуқларга қарамай, ҳозирги кунда ҳам сақланиб қолмоқда.

Калим сўзлар: хавфсиз қон томлари, бурун бўшлиги, операциядан кейинги яллигланиш, клиник кўринишлар, яллигланиш интенсивлиги, жарроҳлик давоси, гемангиома, ангиофиброма, операциядан кейинги давр, оториноларингология.

Abstract. Surgical removal of benign vascular neoplasms of the nasal cavity represents one of the main therapeutic approaches for this pathology. At the same time, the postoperative period is often characterized by the development of inflammatory reactions of varying intensity, which potentially compromises the effectiveness of the treatment and negatively affects the patients' subjective well-being. The relevance of monitoring and regulating the severity of the inflammatory response after surgical intervention persists even today, despite significant advances in surgical techniques and the development of antimicrobial agents

Keywords: Benign vascular tumors, nasal cavity, postoperative inflammation, clinical manifestations, inflammation intensity, surgical treatment, hemangioma, angiofibroma, postoperative period, otorhinolaryngology.

Introduction. Benign vascular neoplasms of the nasal cavity, including hemangiomas, angiofibroma, and other vascular malformations, represent a significant clinical challenge in otorhinolaryngology. These lesions, while histologically benign, often require surgical intervention due to their propensity for local tissue destruction, bleeding, and obstruction of nasal passages, which can substantially impair patients' quality of life. Surgical excision remains the cornerstone of therapeutic management for these vascular anomalies, offering definitive treatment and histopathological diagnosis [2, 4, 6, 8, 10].

The clinical significance of this research gap is substantial, as uncontrolled postoperative inflammation may compromise surgical outcomes, extend hospitalization pe-

riods, necessitate additional interventions, and diminish patient satisfaction. Moreover, the ability to predict, quantify, and effectively manage inflammatory responses could potentially enhance recovery trajectories and improve resource utilization within healthcare systems.

This study aims to systematically evaluate inflammatory markers in both early and late postoperative periods following surgical excision of benign vascular neoplasms of the nasal cavity. By establishing a comprehensive profile of inflammatory progression, identifying predictive factors for heightened inflammatory response, and correlating objective measurements with clinical outcomes, this research seeks to develop an evidence-based frame-

work for optimizing postoperative care protocols in this distinct patient cohort.

Research Objective. To study the intensity of clinical manifestations of the inflammatory process after surgery for benign vascular tumors of the nasal cavity.

Materials and Methods. The study was conducted from 2016 to 2025 in the Department of Otorhinolaryngology at the Multidisciplinary Clinic of Samarkand State Medical University. The basis of this research work consisted of 73 patients aged 19 to 75 years with benign vascular formations of the nasal cavity, as well as 20 healthy individuals for comparison of analysis results.

Results. The study included 93 individuals who were divided into the following groups:

Main Group I (n=53): All patients after surgical treatment received Polydex and fennel oil alongside traditional therapy. To obtain reliable data, the main group was divided into 2 subgroups:

- Subgroup A (n=25): patients receiving Polydex alongside traditional treatment
- Subgroup B (n=28): patients receiving fennel oil and Polydex alongside traditional treatment

Comparison Group (n=20): patients receiving only traditional treatment.

For a detailed examination of endogenous intoxication data and nasal function indicators, a control group (n=20) consisting of practically healthy individuals was selected. The gender distribution of patients was as follows: 48 women (65.7%) and 25 men (34.3%). According to the study results of the healthy control group, the normal mucociliary transport (MCT) of the nasal cavity was 13.2 ± 1.5 minutes, and the absorption capacity of BSVNF was 2.2 ± 0.7 conventional units. In the preoperative period, according to the results of the saccharin test, the mucosal function system in the main group was: 19.2 ± 1.5 and 20 ± 1.7 min, respectively. As shown in Table 1, the indicators of MCT and absorption function of BSVNF were almost identical. The operation is performed as follows. The intervention is carried out under local anesthesia using a Lange hook. With this instrument, the polyp is captured and excised. If the formation is located on the nasal septum, a holder hook is used. With this operation, bleeding is observed less frequently. The procedure lasts on average one hour. At the end of the operation, the mucous membrane is disinfected and tampons are installed (vaseline tampons are installed in the patient's nostril). Endoscopic surgery is performed under local anesthesia.

An endoscope with an installed camera is introduced into the patient's nasal cavity, with which one can see and assess the volume and location of formations. After surgical intervention, we conducted daily examinations and changed dressings, as well as recorded dynamic changes in the clinical picture of the postoperative inflammatory process on days 3, 7, 10, and 14 based on score characteristics. The intensity of clinical manifestations of the postoperative inflammatory process in patients of the control group receiving traditional treatment. When assessing hyperemia of the mucous membrane in the postoperative zone, we observed that the severity of this manifestation in the inflammatory process was characterized as moderate - 2.0 points (1.0-2.0), and by the 7th and 10th days (on average) it significantly decreased, and by the 14th day it completely disappeared. Changes in the study of mucociliary transport of the nasal mucosa in dynamics

after surgery in patients of the control group (n=20) were as follows...

In addition to the above, when examining the comparison group (20 patients) previously operated on by the surgical method, the most important factors (affecting the presence of complications in the late postoperative period and impairment of quality of life) were noted. In the control group, BSVNF recurrence was observed in 7 patients (35.0%).

Clinical Case

Clinical observation 1. Patient S., 28 years old (Case history No. 1972/11), pregnancy - 32 weeks, applied in September 2024 with complaints of difficulty in nasal breathing, periodic nosebleeds from the left half of the nose and anosmia, significant difficulty in nasal breathing on the left side, dryness in the mouth. The above symptoms have been noted since August 2017. From the anamnesis of the disease, it is known that the first nosebleed from the left half of the nose occurred at the 30th week of pregnancy and was accompanied by an increase in systemic arterial pressure to 140 and 80 mm Hg. The bleeding was stopped by anterior tamponade. The patient notes that the intensity and duration of nosebleeds increased with each subsequent time. During pregnancy, hemostasis system indicators and hemoglobin levels were within normal limits. Two weeks before hospitalization, an otorhinolaryngologist in an outpatient setting conducted an endoscopic examination of the nasal cavity - a polyp-like formation was found in the left half of the nose, which bled upon probing. When conducting MRI of the nose and paranasal sinuses (without contrast agent), a rounded tissue formation of the left nasal cavity was identified, filling the posterior sections of the nasal cavity from the middle of the left middle nasal concha to the left choana, with axial dimensions of 2.5x2.0 cm and a vertical dimension of up to 3.0-3.5 cm. The formation partially displaced the nasal septum backward and caused destruction of the nasal septum. Tumor biopsy was accompanied by severe bleeding. According to histological examination (No. 2213-03, capillary hemangioma), the tumor consisted of densely arranged small capillaries.

Complete blood count: Hb - 80; RBC - 3.0; CI - 0.9; WBC - 10.8; ESR - 23 mm/h; Blood coagulation according to Sukharev: start - 2.4; end - 3.8; platelets - 188; eos - 6; neut: stab - 5; seg - 82; lymph - 53; mono - 11. ECG: Without pathology.

In the department for 5 days, the patient underwent preliminary hemostatic therapy to prevent bleeding during surgery by intramuscular injection of 5 ml of 5% trexamine solution once a day. Under local application anesthesia of the nasal cavity mucosa (Sol. Lidocaini 10% 2 ml), endonasal removal of the tumor was performed. Hemostasis was performed using hemostatic tampons in both halves of the nose. The surgical material was sent for histological examination. In the postoperative period, the patient was under the supervision of a gynecologist and received hemostatic and systemic antibacterial therapy for prophylactic purposes. The tampon was removed from the nasal cavity on the 2nd day after surgery, then a cotton swab with antiseptic ointment was inserted. Further, it was recommended to rinse the nose with saline solution for 1 month. One month after surgery, an endoscopic examination of the nasal cavity revealed that the mucous membranes of the nasal cavity were pink, the nasal conchae were not

changed, there were no secretions, and nasal breathing was free. At a follow-up examination after 21 days (15.11.24), the patient complained of nasal congestion and dryness of the nasal cavity mucosa.

Three months after discharge from the hospital, she applied due to nosebleed and headache. Repeated computed tomography showed no signs of a space-occupying lesion. At a follow-up examination 6 months after surgery, the patient had no complaints, and there was no suspicion of tumor recurrence. Microbiological analysis: negative. Thus, after traditional treatment, functional disorders and nosebleeds did not completely disappear. In patients with benign vascular formations of the nasal cavity, a significant increase in MDA up to 86.4% was observed against the background of a decrease in catalase activity to 67.8%, accumulation of MMM 254 up to 130.4% and MMM 280 up to 58.6%, while TAA decreased to 75.4%, and the MDA/CA ratio increased 6.14 times. The above data can be used as additional criteria in the diagnosis of vascular formations.

Conclusions. Thus, the study of the intensity of clinical manifestations of the inflammatory process after surgery for benign vascular tumors of the nasal cavity showed that traditional treatment methods do not provide complete relief of inflammatory phenomena. In the control group of patients, recurrence was noted in 35% of cases. In patients with benign vascular formations of the nasal cavity, significant disturbances in oxidative stress indicators were observed: an increase in malondialdehyde (MDA) to 86.4% against the background of a decrease in catalase activity to 67.8%, accumulation of medium molecular weight peptides (MMM 254 to 130.4% and MMM 280 to 58.6%), while the total antioxidant activity decreased to 75.4%, and the MDA/CA ratio increased by 6.14 times. The use of combination therapy, including the use of Polydex and fennel oil alongside traditional therapy, showed higher efficacy in reducing inflammatory phenomena in the postoperative period compared to traditional treatment.

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МОНИТОРИНГ ВОСПАЛИТЕЛЬНЫХ ПОКАЗАТЕЛЕЙ В РАННЕМ И ПОЗДНЕМ ПОСЛЕОПЕРАЦИОННОМ ПЕРИОДАХ ПРИ ХИРУРГИЧЕСКОМ ВМЕШАТЕЛЬСТВЕ ПО ПОВОДУ ДОБРОКАЧЕСТВЕННЫХ ВАСКУЛЯРНЫХ НЕОПЛАЗИЙ ПОЛОСТИ НОСА

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Резюме. Удаление доброкачественных сосудистых опухолей носовой полости хирургическим путем представляет собой один из основных терапевтических подходов при данной патологии. В то же время, послеоперационный период зачастую характеризуется развитием воспалительных реакций различной интенсивности, что потенциально компрометирует эффективность проведенного лечения и негативно сказывается на субъективном благополучии пациентов. Актуальность мониторинга и регуляции выраженности воспалительного ответа после оперативного вмешательства сохраняется и в настоящее время, невзирая на значительный прогресс в области оперативной техники и разработки противомикробных препаратов

Ключевые слова: доброкачественные сосудистые опухоли, полость носа, послеоперационное воспаление, клинические проявления, интенсивность воспаления, хирургическое лечение, гемангиома, ангиофиброма, послеоперационный период, оториноларингология.