

## Study of Microflora in Patients with Benign Vascular Tumors of the Nasal Cavity

Lutfullaev G. U., Safarova N. I., Kobilova Sh. Sh., Yunusova N. A.  
Samarkand State Medical University

**Abstract:** The article presents analytical studies of the microflora of 35 patients aged 18 to 65 years with inflammatory diseases of the nasal cavity and paranasal sinuses with benign vascular tumors of the nasal cavity. In patients with inflammatory diseases of the nasal cavity and paranasal sinuses with benign vascular tumors of the nasal cavity, the composition of the microflora differs from primary inflammatory diseases of the nasal cavity and paranasal sinuses: the degree of seeding of anaerobes, fungi and associations of microorganisms increases as the tumor grows and spreads.

**Keywords:** benign vascular tumor, inflammatory diseases of the nasal cavity and paranasal sinuses, microflora, bacteriological analysis.

Recently, there has been a tendency towards an increase in inflammatory diseases of the nasal cavity (NC) and paranasal sinuses (PNS) due to a decrease in local and general immunity, deterioration of the environmental situation, and the development of antibiotic-resistant strains of microorganisms [1,3,4,6]. This is caused by both late diagnosis and resistance of microflora to conservative treatment. The causes may be acute respiratory viral infections, spines, ridges and curvature of the nasal septum, hypertrophy of the nasal conchae, hyperplasia of the mucous membrane or polyps and, finally, various tumors. In the PNS, due to the closure of the natural anastomosis, there is stagnation of the secretion of the mucous glands, a change in pH, a disruption of metabolism in the mucous membrane, a disorder of the function of the ciliated epithelium, as well as the activation of opportunistic microflora [2,5,7,10].

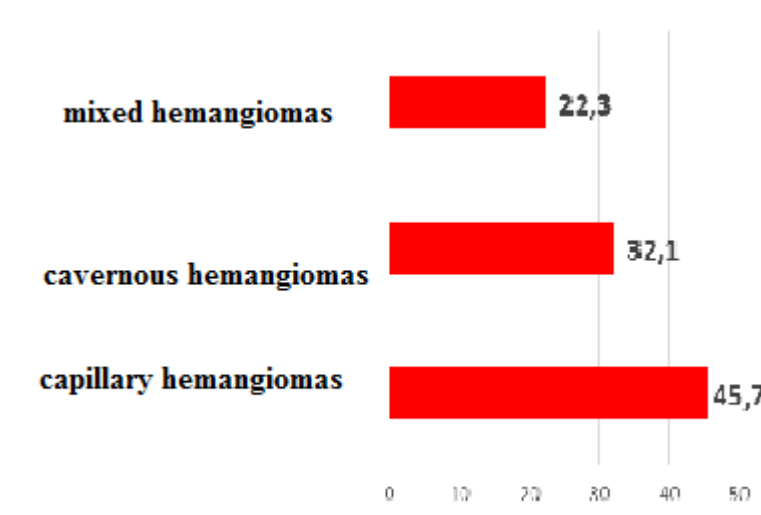
As a rule, in the presence of the above factors, the disease becomes chronic [5,8,11]. In patients with inflammatory diseases of the NC and PNS with benign vascular tumors, the nature of the microflora is different. In addition, the composition of the microflora undergoes changes as the tumor grows, due to the gradual obstruction of the natural anastomoses of the PNS [1,6,7]. All of the above confirms the undoubted interest in studying the microflora in the above-mentioned category of patients.

**The aim of the study** was to investigate the characteristics of the microflora of patients with inflammatory diseases of the nasal cavity and paranasal sinuses with benign vascular tumors of the nasal cavity depending on the type of infectious agent and the spread of the tumor.

**Material and research methods.** The study involved 35 patients with inflammatory diseases of the nasal cavity and paranasal sinuses with benign vascular tumors of the nasal cavity aged 18 to 65 years, of which 16 (45.7%) were male and 19 (54.3%) were female, who were examined in the ENT department of the multidisciplinary clinic of the Samarkand State Medical University in the period 2017-2023. All patients underwent bacteriological examination. Material for analysis

was taken from the nasal cavity, during diagnostic puncture and probing of the paranasal sinus junction, as well as intraoperatively.

**Results and discussion.** The tumor spread by stages was as follows: stage I was observed in 2 (5.7%), stage II in 11 (31.4%), and stage III in 24 (68.5%) patients. Consequently, upon admission, the vast majority of patients had stage III tumor spread. Analysis of histological data showed that capillary hemangiomas (45.7%) and cavernous hemangiomas (32.1%) were more common in all age groups, while mixed hemangiomas (22.3%) were relatively less common (see Fig.).



**Fig. Distribution of types of benign vascular tumors.**

The result of bacteriological examination was positive in 23 (60.5%) patients with inflammatory diseases of the nasal cavity and paranasal sinuses with benign vascular tumors of the nasal cavity.

We studied the species composition of the microflora of patients with inflammatory diseases of the nasal cavity and paranasal sinuses with benign vascular tumors of the nasal cavity, in comparison with the degree of tumor spread (see table).

**Table. Composition of microflora isolated in monoculture with different stages of tumor process spread**

Selected crops	1st degree	2nd degree	3rd degree
Haemophilus influenzae	1	-	-
Staph. Aureus	-	2	4
Staph. Epidermidis	-	1	3
Str. Pyogenus	-	1	3
E.coli	-	-	2
Proteus vulgaris	-	-	2
Klebsiella	-	-	1
Enterococcus	-	-	3
Pseudomonasaureginosa	-	-	1
Candida albicans	1	2	5
Actinomyces	-	1	3
Bacterioides	-	3	11
Fusobacterium	1	3	8
Peptococcus	-	-	6

Thus, at the first stage of spread, the composition of microflora was limited to *Haemophilus influenzae* (4.3%). In addition, it should be taken into account that this is the smallest group among the patients with benign vascular tumors of the nasal cavity that we examined.

At the II degree of tumor spread, aerobic flora also predominates - these are staphylococci: *Staph. aureus*, *Staph. epidermidis* and *Str. pyogenus* in 2 (8.7%) patients), anaerobic flora was cultured in 4 (17.3%) patients and in 3 (13%) associations of *Staph. epidermidis* with fungi of the genus *Candida* (2 (1.9%) patients). We identified a wide variety of microflora in patients with the III degree of tumor spread.

Thus, the following aerobic cultures were isolated: *Staph. aureus* (4 (17.3%) cases), *Staph. epidermidis*, *Str. pyogenus*, *E. coli*, *Klebsiella*, *Proteus vulgaris* (2 (8.7%) patients), *Enterococcus* (1 patient (4.3%)). Fungi of the genus *Candida* and *Actinomyces* – 2 cases each (17.3%). Anaerobes, represented by *Bacterioides*, *Fusobacterium*, *Peptococcus*, accounted for an average of 30.4% of cases. Associations of microorganisms were also common (21.7%) and were represented by various combinations of gram-positive and gram-negative microorganisms with anaerobes and fungi.

**Conclusions.** Thus, it can be stated that in patients with inflammatory diseases of the nasal cavity and paranasal sinuses with benign vascular tumors of the nasal cavity, anaerobic flora, resistant to antibacterial drugs widely used in ENT practice, as well as fungi, predominate. The degree of seeding of anaerobes, fungi and microorganism associations increases as the tumor grows and spreads. The listed features are associated with multiple courses of antibiotic therapy, as well as with increasing obstruction of natural anastomoses and stages of tumor spread.

## REFERENCES

1. Antoniv V.F., Popadyuk V.I., Antoniv T.V. "Reliability and credibility of scientific information in otolaryngology" Proceedings of the IV All-Russian scientific and practical conference - Moscow, 2005.-P.23
2. Antoniv V.F., Rishko N.M., Popadyuk V.I. et al. Clinical classification of benign tumors of ENT organs. // J. Vestn. otolaryngology.- 2001.-№ 4.- P.24-28.
3. Antoniv T.V., Kazanova N.I., Grigorieva I.N. Capillary hemangioma of ENT organs (clinic, diagnostics, treatment). Journal: Bulletin of Otolaryngology. 2012;77(1): P. 11-13.
4. Ermukhanova G.T., Bekmukhametov A.S., Dautov D.K., et al. Experience of treating a child with hemangioma using sclerosing therapy with thrombovar. Bulletin of KazNMU, No. 1 – 2013. P. 149-152
5. Karpishchenko S.A., Vereshchagina O.E., Lysyuk E.O. Capillary hemangioma of the nasal septum: a clinical case. Rational tactics of surgical treatment. Consilium Medicum. 2017; 19 (11.1. Respiratory Organs Diseases): 58–61.
6. Nosulya E.V., Perich B., Kim I.A. Benign tumors and tumor-like diseases of the nose and paranasal sinuses. Study guide. M. 2018. -P.124.
7. Talalaenko I.A., Seleznev K.G. Modern pathogenetic and therapeutic aspects of vascular tumors of the nose and paranasal sinuses. Archives of Clinical and Experimental Medicine, Vol. 11, No. 3, 2002. P. 115.
8. Baradaranfar M.H., Dabirmoghaddam P., Endoscopic endonasal surgery for resection of benign sinonasal tumors: experience with 105 patients. //Arch Iran Med.- 2006.- V.9.- № 3.- P.244-249.
9. Busaba N.Y., de Oliveira L.V., Kieff D.L. Correlation between preoperative clinical diagnosis and histopathological findings in patients with rhinosinusitis. //Am J Rhinol.- 2005.- V.19.-N 2.-P.153-157.

10. Cho H.J., Kim J.K., Kim K., et al. Endoscopic surgery for inverted papilloma originating from the sphenoid sinus and related clinical characteristics.//Acta Otolaryngol.-2008.-V.128.-№ 10.- P.1120-1125.
11. Hauptman G., Ryan M. W. // Otolaryngol Head surg. – 2007. - № 137(5). – P. 815.

**Authors' information**

1. Lutfullaev Gairat Umrullaevich – Doctor of Medical Sciences, Professor +998905050095 lutfullaev75@gmail.com
2. Safarova Nasiba Iskandarovna – candidate of medical sciences, associate professor +998915255384 nasiba-safarova@rambler.ru