

Modern Methods of Studying the Problem of Benign Vascular Lesions of The Nasal Cavity: Methods of Assessment and Study of Influencing Factors

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Annotation. Vascular tumors make up 1-7% of benign neoplasms in humans. 60-80% of these tumors are located in the head. In childhood tumors, their development is more often associated with developmental anomalies or the presence of undifferentiated embryonic remnants in the child's body, which have a greater capacity for growth. In the early stages of development, benign neoplasms in the nasal cavity, paranasal sinuses, and nasopharynx usually manifest with minor nonspecific symptoms, which are often overlooked by both patients and doctors. Therefore, early diagnosis of benign tumors in these locations is of paramount importance.

Keywords benign neoplasms of the nasal cavity, paranasal sinuses and nasopharynx, diagnosis, treatment.

Introduction. Benign nasal cavity neoplasms are voluminous structures that may consist of bone, cartilage or soft tissue. These pathological structures are capable in the process of their growth to deform and disrupt the functions of various parts of the nasal cavity and nasopharynx. Formations of the nasal cavity and sinuses, as a rule, are benign in nature. They are formed as a result of prolonged combined effects of several unfavourable factors. The most common neoplasms of the nose, nasopharynx and appendicular sinuses are recognised as cysts and polyps. The former are thin-walled cavity structures filled with fluid. Polyps are formed as a result of hyperplasia (overgrowth) of mucous membranes. Pathologies are prone to a chronic course and slow progression. The tumours increase in size gradually, so they can remain undiagnosed for years. Symptoms of diseases are nonspecific and often in the initial stages do not cause significant discomfort to the patient. Benign nasal masses include: bleeding polyp (angiogranuloma), papilloma, angioma, fibroma, angiofibroma, nevi, and warts. During the period of observation 2017-2023, 73 patients with benign vascular neoplasms of the nasal cavity (BVNP) and 20 healthy volunteers visited Clinic No. 1 of the FPDP Otorhinolaryngology Department of SamSMU. Seventy-three patients with benign vascular neoplasms of the nasal cavity (BDNV) (the diagnosis was confirmed by laboratory and instrumental diagnostic methods) were selected for the study. The stages of DSNP spreading were established by V.F. Antoninov and U.L. Lutfullaev in 1989 and in 2001 by A.I. Muminov and established in accordance with the working classification proposed by G.U. Lutfullaev in 2001. The distribution of the examined patients with regard to age was carried out according to the classification for determining age limits proposed by WHO (2020). In accordance with the goals and objectives of the study, the frequency of patients' occurrence was analysed by regions of Samarkand region. The frequency of patients with benign vascular tumours in Samarkand region was as follows. According to the data presented in Figure 2, 35 patients were referred from Nurabad district, 18 - from Urgut, 10 - from Kushrabad and 6 - from Paktachin districts. Analysis of subjective and objective preoperative data of patients with benign vascular tumours of the nasal cavity was carried out in accordance with the aims and objectives of the study. Preoperative clinical examination of patients was analysed according to the following parameters:

-First symptoms of the disease - complaints presented by patients at the first visit to the doctor or accidentally detected during examination for other diseases, usually during CT or MRI scans aimed at detecting neurological or otorhinolaryngological pathology.

-Patient complaints on admission for surgical treatment. When assessing patients' complaints before surgical treatment, one of the main complaints was headache;

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65 (70%) patients complained of bloody nasal discharge. Muscle weakness was observed in 57 patients (61%), decreased sense of smell in 65 patients.

| Endoscopic findings | All patients | | | Xi-square | P |
|---|--------------|------|------|---------------------|-------|
| | abs | M(%) | m | | |
| Colour change (hyperaemia) of the mucous membrane | 65 | 69,5 | 0,00 | 6,406 ^a | 0,005 |
| Nasal secretion is mucousy. | 77 | 82,7 | 5,94 | 7,806 ^a | 0,005 |
| Nasal secretion - mucous-purulent. | 39 | 41,8 | 5,94 | 7,806 ^a | 0,005 |
| Swelling of the NNR and SNR | 68 | 72,5 | 4,85 | 25,806 ^a | 0,000 |

Table 1.

Structure of patient complaints before surgical treatment

Endoscopic methods of examination of ENT organs. Optical methods

The nasal cavity and sinuses were examined using a rigid DELON endoscope (diameter 2, 7 mm, 4, 0 mm, field of view 00, 300, 700). The study was performed in the position of the patient lying on the back with the head turned to the right. Initially, the nasal cavity was not treated, and the endoscope with a field of view of 0 was used to assess the mucosa in the vestibular region, valve area, anterior and middle part of the nasal cavity. In addition, the nasal cavity was pretreated with 10% lidocaine solution if necessary and for painlessness of the procedure. When advancing the endoscope along the lower wall of the nasal cavity towards the nasopharynx, the condition of the nasal valve was assessed in more detail, simultaneously assessing the colour and condition of the lower nasal shell and the substructure of the nasal cavity for the presence and nature of discharge, presence of neoplasms or other lesions. When examining the nasolacrimal region, the condition of the posterior end of the lower nasolacrimal duct, nasal tonsils, nasolacrimal rolls, the ear canal opening and the nasopharyngeal mucosa was assessed.

Examination of the nasal cavity and nasopharynx yielded the findings presented in Table 2.

Table 2.

Anterior rhinoscopy data in patients with benign vascular tumors (n=73)

| Complaints | Abs | M±m,% | Xi-kvadrat |
|------------------------|-----|------------|------------|
| Headache | 71 | 97,84±1,23 | 127,259 |
| Bloody nasal discharge | 49 | 69,78±3,89 | 21,763 |
| Nasal congestion | 61 | 83,45±3,15 | 62,223 |
| Weakness | 5 | 6,43±4,15 | 0,650 |
| Reduced sense of smell | 33 | 46,76±4,23 | 0,583 |

During endoscopic rhinoscopy, special attention was paid to analysing the structure of the nasal cavity - the nasal septum complex, the hook-shaped process of the nasal septum, the position of the middle and lower nasal bones, the structure of the choroidal cavity and the state of the nasopharynx. The examination data were recorded in a questionnaire specially designed for each patient.

Table 3 shows that the curvature of the nasal septum towards the affected sinus was not pronounced in 62 (66, 7%) patients. Dorsal nasal hypertrophy was present in 7 (7, 05%) patients, and 15 (16, 1%) patients had long-standing chronic pharyngitis. It should be noted that there was no clear correlation between the location of isolated ridge-shaped nasal septal curvature and the aspect of the lesion. Such lateral correspondence was noted in only three patients.

| Nasal septal deviation | All groups | | |
|------------------------|------------|-------|------|
| | abs | M(%) | m |
| 1 degree | 12 | 19,35 | 5,02 |
| 2 degrees | 47 | 75,81 | 5,44 |
| 3 degrees | 3 | 4,84 | 2,73 |
| Total | 62 | 15,0 | 4,23 |

Table 3.

Concomitant diseases according to endoscopic examination

| Associated diseases | All groups | | | Xi-square |
|-----------------------------|------------|------|------|---------------------|
| | Abs | M(%) | m | |
| Nasal septal deviation | 62 | 66,7 | 5,17 | 20,903 ^a |
| Nasal septal spike | 8 | 8,6 | 4,26 | 34,129 ^a |
| Hypertrophy of nasal shells | 7 | 7,05 | 4,02 | 37,161 ^a |
| Chronic pharyngitis | 15 | 16,1 | 5,44 | 16,516 ^a |
| Eustacheitis | 5 | 5,3 | 3,46 | 43,613 ^a |
| Chronic rhinosinusitis | 6 | 6,4 | 3,75 | 40,323 ^a |

The classification of G.S. Protasevich (1979) was used to determine the degree of nasal septum deformity. The distribution of the obtained data is presented in Table 4, which shows that two thirds of the patients had nasal septum deformity of II degree.

Table 4.

Degree of curvature of the nasal septum

At endoscopic examination of the nasal cavity, the presence of pathological secretions was also noted. This result was one of the indirect signs in the combined assessment of the state of mucociliary transport of the TMJ and OMC structures. The diagnosis was made on the basis of patient complaints, anamnestic data and objective rhinoscopic images (anterior and posterior rhinoscopy and endoscopy of the nasal cavity) combined with diagnostic anaemia of the mucosa of the lower nasal shells.

All patients underwent CT studies on Siemens Somatom Sensation Cardiac (Germany). The studies were performed in axial, coronal and sagittal projections. It should be noted that CT and MRI data have become an important navigational material for the most accurate, sparing and safe surgical interventions.

Methods of statistical processing of the study results

Statistical processing of the study material was carried out using parametric and non-parametric methods of analysis. Accumulation of primary information, modification, systematisation and visualisation of the obtained results were carried out using Microsoft Office Excel 2016 spreadsheets. Statistical analyses were performed using IBM SPSS Statistics v.26 software (developer - IBM Corporation). Nominal data were

described in absolute values and percentages. Nominal data were compared using Pearson's χ^2 test to assess the significance of the difference between the actual number of study outcomes or qualitative characteristics in each category and the theoretical number expected in the study group if the null hypothesis was true. First, the expected number of observations in each cell of the contingent table was calculated under the null hypothesis of no relationship. To do this, the sum of rows and columns (marginal totals) was multiplied and then divided by the total number of observations.

Conclusion In the initial stages of development benign neoplasms of the nasal cavity, paranasal sinuses and nasopharynx, as a rule, show insignificant nonspecific signs, in connection with which neither patients nor doctors pay attention to them. In this connection the questions of early diagnostics of benign tumours of the mentioned localization are of paramount importance (Potapov I.I., 1960; Paches A.I., 1971, 1983). CT data made it possible to determine the size of the tumour, the degree of its spread, to detect the presence of bone destruction, to carry out differential diagnosis with osteoma; also CT data made it possible to obtain more complete information about the true boundaries of the tumour and its structure, to differentiate tumour recurrence from inflammatory and scar-fibrotic changes in the operative cavity, as well as from malignant neoplasms.

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