

# ПАТОГЕНЕЗ, МОРФОГЕНЕЗ И ПАТОМОРФОЛОГИЧЕСКИЕ ИЗМЕНЕНИЯ НОСА И ЕГО ПРИСОЕДИНИТЕЛЬНЫХ ПЕЩЕР, ПОЛИПОВ В АЛЛЕРГИЧЕСКОЙ ФОРМЕ

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**Аннотация:** В данной статье изучены патогенез, морфогенез и патоморфологические изменения отечно-аллергической формы полипа носа и придатков. Подсчитан биопсийный материал, полученный во время операции у пациентов с диагнозом полипы носа в отделении оториноларингологии Ферганской городской многопрофильной больницы. Было отмечено, что в ямках и карманных путях между носовыми раковинами появляются полипы носа и дополнительные полости, через эти ямки затекает воспалительный экссудат, при этом слизистая оболочка ямок постоянно поражается экссудатом.

**Ключевые слова:** нос, полип, набухающая форма, аллергия, патогенез.

## BURUN VA UNING QO'SHIMCHA BO'SHLIQLARI SHISHLARI, ALLERGIK FORMADAGI POLIPI PATOGENEZI, MORFOGENEZI VA PATOMORFOLOGIK O'ZGARISHLARI

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**Аннотация:** Ushbu maqolada burun va qo'shimcha bo'shliqlari polipi shishli-allergik formasining patogenezi, morfogenezi va patomorfologik o'zgarishlari o'rganildi. Material sifatida Farg'ona shahar ko'p tarmoqli shifoxona LOR bo'limida burun polipi diagnozi bilan jarrohlik amaliyotida olingan biopsiya materiali hisoblandi. Burun va qo'shimcha bo'shliqlar polipi burun chig'anoqlari orasidagi chuqurcha va cho'ntak yo'llarida paydo bo'lishiga sabab yallig'lanish eksudati shu chuqurchalar bo'ylab oqishi va eksudat ta'sirida chuqurchalar shilliq pardasi doimiy ravishda ta'sirot olishidan to'qima tuzilmalarida proliferativ jarayon boshlanib, poliplar paydo bo'lishi kuzatildi.

**Калит so'zlar:** burun, polip, shishli formasi, allergiya, patogenezi.

## PATHOGENESIS, MORPHOGENESIS, AND PATHOMORPHOLOGICAL CHANGES OF THE NOSE AND ITS ACCESSORY CAVES, POLYPS IN ALLERGIC FORM

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PATHOGENESIS, MORPHOGENESIS, AND PATHOMORPHOLOGICAL CHANGES OF THE NOSE AND ITS ACCESSORY CAVES, POLYPS IN ALLERGIC FORM. JCPM.-2024.P.2.-№2-A

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**Annotation:** In this article, the pathogenesis, morphogenesis, and pathomorphological changes of the swelling-allergic form of the polyp of the nose and appendages were studied. Biopsy material obtained during surgery with the diagnosis of nasal polyps in the Department of Otorhinolaryngology of the Fergana City multidisciplinary hospital was counted. It was observed that polyps of the nose and extra cavities appear in the pits and pocket paths between the nasal conchas, the inflammatory exudate flows through these pits, and the mucous membrane of the pits is constantly affected by the exudate.

**Keywords:** nose, polyp, swelling form, allergy, pathogenesis.

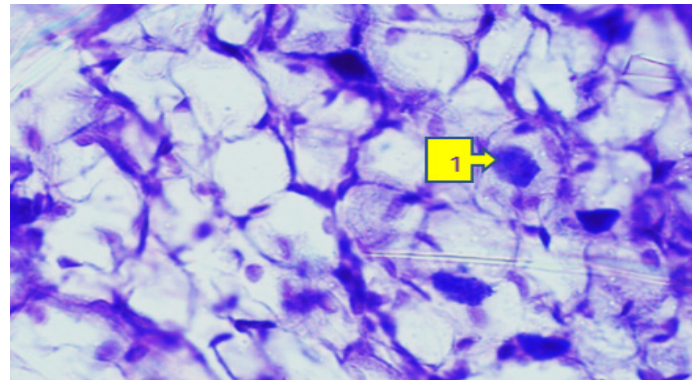
**Introduction:** Studying the histogenesis, morphogenesis, and places of growth in the nose and polyps of the mucous membranes of its extra cavity, it was found that polyps of the nasal cavity are usually found in the pits and pockets of the nasal concha [1,3]. The reason for the appearance of these pits is that the exudate fluids released during the inflammatory process in the mucous membrane flow through these pits, and the mucous membrane of the pits is more and more affected by the exudate, and the proliferative process begins in the tissue structures, and as a result, polyps appear [1,2,4].

**Material and methods:** To achieve the goal, microscopic examination of polyp pieces taken from 78 patients who underwent surgery for nasal polyps in the ENT department of Fergana City multidisciplinary clinic was carried out in our study. The results showed that 33 of the total 78 cases, i.e. 42.3%, were swollen, 21, 26.9% were fibrotic-inflammatory, 14, 17.9% glandular, and 10, 12.8% the stroma turned out to be a polyp with a various structure. Paraffin blocks of the swollen-allergic form were separated from them, and the histological preparations prepared from them hematoxylin-eosin, to determine the amount and location of fibrous structures by the van Gieson method, and stained with Alzian blue to determine sour glycosaminoglycans that appeared in the stroma of the polyp. Histological preparations were studied under a light microscope with 10, 20, and 40 lenses, and microphotographs were downloaded to the computer from the necessary places.

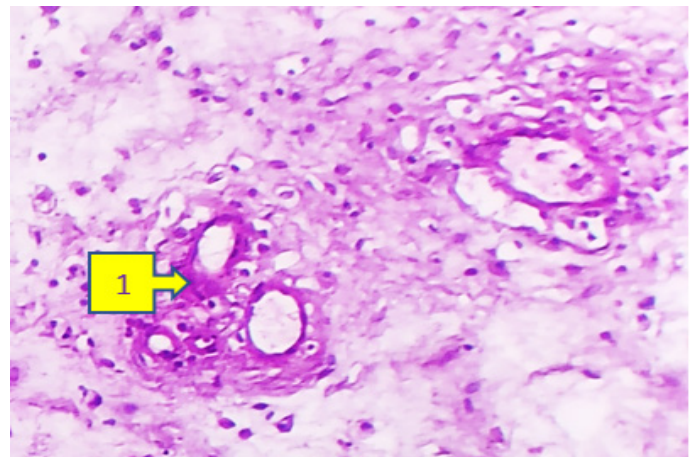
**Research and Discussion:** A microscopic study of the swollen-allergic form of polyps taken from the nasal cavity showed that it is observed that a rapid type of hypersensitivity has developed in tissue structures of the polyp, that is, allergic swelling has developed due to the introduction of histamine and serotonin into the tissue from the control of allergens into fat cells. In addition, in the swelling-allergic form of the polyp, hydrodynamic, and colloid-osmotic pressures in both arterial and venous capillaries in the tissue due to the change in the ratio to each other, the swelling process was observed to be preserved. The study of the morphological changes of the pathogenetic mechanisms of the swelling process developed in the tissue of the swelling-allergic form of the nasal polyp showed that, As changes characteristic of the rapid type of hypersensitivity, the presence of fat cells (Figure. 1) in the stroma of the swollen polyp confirms this. Factors leading to the development and long-term preservation of the inflammatory process

include the paralytic expansion of capillary vessels, the development of mucoid, fibrinoid swelling, and fibrinoid necrosis in the capillary wall (Figure. 2), strong swelling of the cytoplasm of the cellular composition of the capillary wall, strong swelling of the tissue due to the presence of hydrodynamic and colloid-osmotic pressure between the surrounding tissue structures is observed. Infiltration of the stroma of the polyp with eosinophils is the main morphological feature as a change characteristic of the inflammatory-allergic form of the polyp. Microscopically, the presence of eosinophils as well as other lymphoid and histiocytic cells in the polyp stroma of the inflammatory-allergic form, is determined that they are located in combination with lymphocytes and fat cells.

**Figure 1. Swollen-allergic form of a nasal polyp, the presence of fat cells (1) confirming allergic swelling. Paint: 10x40.**



**Figure 2 (1) Swollen-allergic form of nasal polyp, capillary wall in the stroma is subject to fibrinoid swelling and fibrinoid necrosis. Paint: 10x100.**



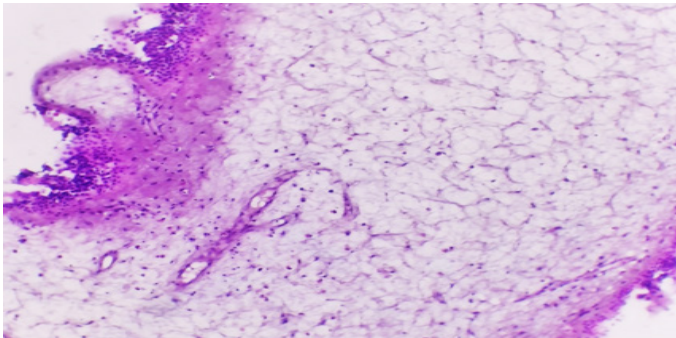
The tissue of the swollen-allergic form of the nasal polyp was studied by the method of general morphology, that is, hematoxylin and eosin dyes, the following data were obtained, it is determined that the covering epithelium on the surface of the polyp has a different structure in different areas, i.e. in one place it remains with a single-layered cylindrical epithelium, in other places it is



atrophied and desquamated, and in another place it is metaplasia into a multi-layered epithelium. The stroma of the polyp takes up a large area due to severe swelling, the microcirculatory blood vessels in it are sparsely located, their cavity is paralytically enlarged, fibrinoid swelling and fibrinoid necrosis have developed in the wall, and it is observed that the tissue structures of the vessel wall are shriveled and irregularly located.

The fact that the swollen connective tissue, which formed the basis of the polyp stroma, turned into a myxomatous tissue (Figure. 3), it is determined that its cells are sparsely arranged and star-shaped. The swollen stroma contains sparse inflammatory cells, namely neutrophils, eosinophils, lymphoid cells, and macrophages, and they are found to be denser as they approach the covering epithelium. It is known that, during the development of inflammation in any tissue, including nasal polyp tissue, the amount of sour glycosaminoglycans in the tissue interstitium increases, and due to its hydrophilic nature, swelling develops in the tissue.

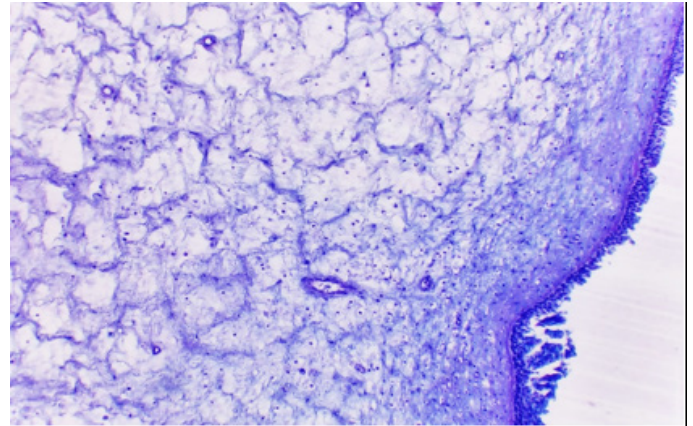
**Figure 3. Swelling-allergic form of nasal polyp, the stroma is strongly swollen (1), and the covering epithelium has developed metaplasia (2). Point: 10x40.**



nasal polyp is stained with alcian blue, it is determined that the sour glycosaminoglycans in the stroma are stained blue to varying degrees. The fact that sour glycosaminoglycans in the composition of stromal tissue are relatively abundant under the covering epithelium, around blood vessels, in areas close to the nuclei of cells, and less is seen in the swollen tissue (Figure 4). Studied under a large lens of a microscope, it became clear that sour glycosaminoglycans, stained blue with alcian blue, are in the structures of the blood vessel wall, it is observed that it is relatively more concentrated in the areas where cells and fibrous structures are located, and less in the swollen interstitium.

**Figure 4. Swollen-allergic form of nasal polyp, the presence of sour mucopolysaccharides (1) scattered in stroma tissue.**

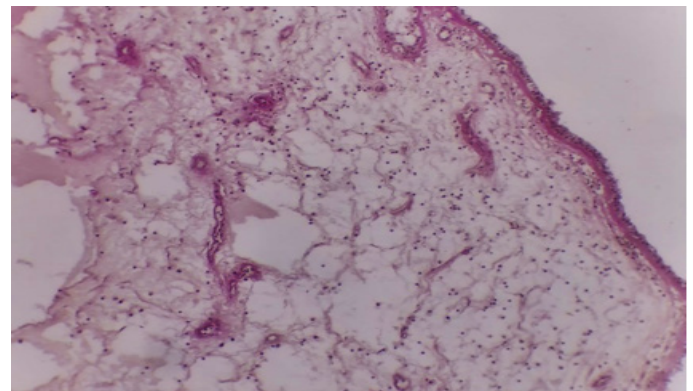
**Point: 10x10.**



In the swelling-allergic form of the nasal polyp, the connective tissue structures in the tissue, to determine the amount and location of collagen fibers, information was determined by staining with picrofuchsin by the van Gieson method, due to the development of a strong swelling process in the stroma of this polyp, the connective tissue structures are thickened and thinned, it is determined that each structure of the connective tissue is separated from each other and thinned (Figure.5).

**Figure 5. Swollen-allergic form of nasal polyp, reduction of collagen fibers in the connective tissue of the swollen stroma.**

**Paint: 10x10.**



**Conclusions:** The reason why polyps of the mucous membrane of the nose and its additional cavities appear in the pits and pockets between the nasal conchas are the exudate fluids released during the inflammatory process developed in the mucous membrane, as a result of the flow through these pits and exudate, the mucous membrane of the pits is more and more constantly affected, the proliferative process begins in the tissue structures, and polyps appear. Antrochoanal polyp arises in the extra sinus cavity of the nose and grows from the middle path of the nose through the choanal opening

to the nasopharyngeal cavity, unlike other polyps, this polyp has a firm structure and resembles a fibroma. Ethmoidal polyps often grow bilaterally on the mucous membrane of the lattice labyrinth, an accessory nose cavity. The pathogenesis of nasal polyps depends on the metabolism of arachidonic acid in the connective tissue, cyclooxygenase enzyme inhibition activates this acid metabolism, prostaglandins and leukotrienes are synthesized, inflammatory mediators attract eosinophils and neutrophils to the composition of the mucous membrane, resulting in the development of severe inflammation.

In this form of nasal polyp, the development of a strong tumor is caused by fatty cells in the connective tissue of the stroma, the abundance of eosinophils confirms the occurrence of hydrodynamic and colloid-osmotic pressure on the capillary wall.

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