

Clinical and Morphological Aspects of Hyperplastic Processes of the Larynx

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Abstract:	Keywords:
<p>In recent years, hyperplastic processes in the larynx have become increasingly common in the structure of ENT diseases, they account for 8.4% of the total pathology of ENT organs, the fact that the peak of morbidity falls on the most able-bodied age gives this problem a special urgency. - 35-50 years . On the other hand, hyperplastic processes in the larynx are prone to mapignization with the development of laryngeal cancer, which is 69-70% among tumors of the upper respiratory tract, and currently there is an increase in the absolute number of patients with laryngeal cancer.</p>	<p>diagnose, biopsy, larynx, clinics, pathology, neoplasm, anatomic, skill, method</p>

Diagnosis of hyperplastic processes of the larynx is fraught with difficulties, since in the early stages of the disease can be asymptomatic At the present stage of development of Uzbek otorhinolaryngology, indirect laryngoscopy is the main method in primary care clinics, however, due to the anatomical features of the larynx, a full examination is not always possible. In addition, histological verification is also difficult due to the complex anatomical structure of the organ and the location of the pathological process in a place that is difficult to access for taking a biopsy, the assessment of the histological picture of the neoplasm, the method is subjective and largely depends on the professional skills of a pathologist, which may not be enough to make a correct diagnosis, it is very difficult to catch the edge where dysplasia turns into carcinoma in situ, hence the different interpretations of the same histological preparations in different clinics are all higher the above points to the need to use quantitative methods when making a pathoanatomical diagnosis. Making a correct diagnosis is one of the tasks of a doctor, then effective treatment should be prescribed Modern methods of treating hyperplastic processes of the larynx are very diverse and can be divided into several large groups conservative, surgical and complex methods These methods are described in the literature, but there is no consensus on the algorithm of treatment of hyperplastic processes of the larynx, based on the clinical and morphological picture of the disease (Ashurov 3 M et al., 2006, Jafek B U et al., 2001, Zenger V G, 2004, Lapchenko A S, 2003, Palchun V T et al., 2006, Pluzhnikov M S and co., 2004, Soldatov and B and co., 2000, Mshsh A , 2007, Our E , 2007)

The above circumstances explain the great interest, medical, social and economic urgency of the need to study this problem

The aim of the study is a comprehensive clinical, morphological, immunohistochemical study of hyperplastic processes of the larynx in chronic inflammation, development of an

algorithm for examination, treatment and dispensary observation of patients with this pathology

Research Objectives

- 1 To study the clinical, anatomical and morphological changes of the larynx in hyperplastic processes, based on modern examination methods
- 2 To characterize the proliferative activity of epithelial cells in hyperplastic processes of the larynx on the basis of the latest immunohistochemical techniques (PCNA)
- 3 To study the possibility of the presence of *Helicobacter pylori* in biopsy material in patients with hyperplastic processes of the larynx
- 4 To develop an algorithm for the diagnosis, treatment and follow-up of patients with hyperplastic processes of the larynx

Scientific Novelty.

- A comprehensive clinical and morphological characteristic of hyperplastic processes of the larynx is presented
- The proliferative activity of the laryngeal epithelium was revealed in chronic inflammation, tumor-like formations, benign formations of various degrees of dysplasia and malignant neoplasms (squamous cell carcinoma) using an immunohistochemical reaction using monoclonal antibodies to PCNA, the increase in expression of which is directly proportional to the growth of dysplasia
- The presence of *Helicobacter pylori* in the biopsy material in patients with hyperplastic processes of the larynx, independent of the morphological diagnosis, was detected
- The need for antireflux therapy and therapy aimed at the elimination of *Helicobacter pylori* in patients with hyperplastic processes of the larynx was found
- An algorithm for diagnosis, treatment and examination of patients with hyperplastic processes of the larynx has been developed
- The presented clinical and morphological characteristics of hyperplastic processes of the larynx indicate the need for surgical methods of treatment for this disease

Practical Significance of the Work

The obtained morphological data provide a comprehensive assessment of the hyperplastic processes of the larynx and the pathological processes leading to them

The clinical and morphological approach to the study of hyperplastic processes of the larynx presented in the dissertation study will improve the effectiveness of diagnosis and treatment of this pathology in practical healthcare

The revealed pathological changes in the laryngeal epithelium of inflammatory and tumor genesis require surgical treatment at the same time, the presence of *Helicobacter pylori* in biopsies from a pathological focus requires antireflux and antibacterial treatment aimed at eliminating *Helicobacter pylori* Requires further long-term follow-up of this group of patients

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In the pathology department of the medical institution, biopsy material from hyperplastically altered laryngeal epithelium should be examined using a number of dyes (hematoxylin and eosin, combined van Gieson and Romanovsky-Giemsa staining to detect Helicobacter pylori) and desirable immunohistochemical techniques using PCNA to determine the degree of dysplasia and possible malignancy

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The provisions for the protection of hyperplastic processes of the larynx are caused by a wide range of pathological changes of inflammatory, tumor and tumor-like genesis

The severity of proliferative activity of epithelial cells when using monoclonal antibodies to PCNA is directly proportional to the degree of dysplasia, which increases significantly with malignancy of the formation

Based on the clinical and morphological features of hyperplastic processes of the larynx, the surgical method of treatment is preferable

The presence of Helicobacter pylori in patients with hyperplastic processes of the larynx is not associated with a morphological substrate

Structure and scope of the dissertation:

The dissertation is presented on the pages of a typewritten text, consists of a table of contents, an introduction, a literature review, a chapter outlining materials and research methods, chapters of own results and their discussion, conclusions, practical recommendations. The list of references consists of 97 domestic and 123 foreign sources Publications of the work.

11 publications have been published on the topic of the dissertation research, including 5 in publications recommended by the Higher Attestation Commission of the Russian Federation. The list of published works is given at the end of the abstract

Thus, in 8 patients only chronic laryngitis was detected, in 78 patients tumor neoplasms of the larynx, of these, 71 were found to have benign, and 7 patients have a malignant tumor -(squamous cell carcinoma) The largest number of patients with chronic hyperplastic laryngitis belongs to the age group of 31-60 years, which accounted for 62.8% of the total number of patients, men get sick almost twice as often as women

Distribution of patients by nosology, gender and age.

Diagnosis Men Women Total %

hemangioma 3 1 4 4.7

papilloma 22 8 30 35

fibrous polyp 11 7 18 21

chronic inflammation 5 3 8 9.3

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angiofibrous polyp 8 3 11 12.7

polypoid degeneration (polypous chorditis) 2 6 8 9.3

squamous cell carcinoma 5 2 7 8

Total 51 35 86 100

Patients were treated at different times from the onset of the disease (from 10 days to 4 years) All patients complained of a change in voice, 63 (73.2%) - a sore throat, 14 (16.2%) - periodic sore throat, 10 (11.6%) - a feeling of suffocation 78 (90.7%) of the examined patients smoked, 48 (56%) patients had work associated with high vocal loads, the presence of contact with irritating substances in the workplace was noted by 34 (40%) patients The following concomitant diseases were detected in the examined patients: chronic gastritis, gastric ulcer, chronic obstructive pulmonary disease, chronic tonsillitis, hyperthyroidism, chronic cholecystitis

The results of the study and their discussion: All patients were divided into groups depending on the morphological diagnosis 1 Patients with chronic laryngitis This group consisted of 8 patients, which corresponds to 9.3% of the total number of patients, there were 5 men, 3 women, the peak incidence was at the age of 54-65 years, this age group accounts for 66% of patients In these patients there were complaints of hoarseness, sore throat, dryness in the larynx Duration of the disease from several weeks to 10 years, the majority of patients were smokers (90.7%) With laryngoscopy, the process is localized in the anterior two-thirds of the vocal folds, they look edematous, thickened, the mucous membrane is hyperemic along the medial surface of the fold with an uneven edge. Areas of hyperkeratosis and small-point formations are noted along the entire surface of the vocal folds, almost in all cases pachydermia of the interstitial space is noted, foci of chronic nonspecific inflammation are detected During microscopy, lymphocytes are mainly determined in the cellular composition, numerous blood vessels of varying degrees of fullness, sclerosis fields, multilayer squamous epithelium with hyperkeratosis, proliferative

The activity of epithelial cells using an immunohistochemical reaction with monoclonal antibodies to PCIA, the results obtained by us ranged from 7.8% to 11.2%

2 Patients with fibrotic polyp This group consisted of 18 patients, which corresponds to 21% of the total number of patients, there were 11 men, 7 women, the peak incidence was at the age of 54-65 years, this age group accounts for 6 (56%) patients In these patients there were complaints of hoarseness, a feeling of dryness in the larynx The duration of the disease from several weeks to several years, most patients are smokers, the presence of occupational hazards is noted by 5 patients With laryngoscopy, the fibrous polyp is most often located on the border of the anterior and middle third of the vocal fold in the form of a "spike", rounded or flattened shape on a wide base, the mucous membrane of the vocal fold is smooth, shiny, with a pronounced vascular pattern Microscopically, the fibrous polyp covers a multilayer flat epithelium, in which areas of the superficial

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keratosis, foci of myxomatosis are found in the tissue of the formation, less often fibrosis, there are dilated vessels of capillary and sinusoidal types, minor hemorrhages, lymphocytic infiltration were noted, the proliferative activity of epithelial cells was evaluated using an immunohistochemical reaction with monoclonal antibodies to RSCA, the results we obtained ranged from 9.5% to 12%

3 Patients with angiofibrosis polyp This group consisted of 11 patients, which corresponds to 12.7% of the total number of patients, there were 8 men, 3 women, the peak incidence was at the age of 45-56 years, 37% of patients accounted for this age group. These patients had complaints of hoarseness, the duration of the disease ranged from several weeks to several years, most patients are smokers, the presence of occupational hazards is noted by 2 patients With laryngoscopy angiofibrous polyp is most often located on the medial edge of the vocal fold in the anterior and middle third, have a wide base or a feeding leg, their color varies from bright pink to purple-red, the formation is smooth, shiny, rounded or elongated, its consistency is different and depends on the ratio of cells and connective tissue fibers, as well as the degree of hyalinization of the latter The mucous membrane of the vocal fold is often unchanged, smooth, shiny, with a pronounced vascular pattern, In some cases, the medial edge of the fold is thickened in a large area in the form of a bright red stripe, which then expands and forms the base of the polyp. Microscopic examination revealed a polypoid formation covered with a multilayer flat non-eroding epithelium In the stroma of the polyp, blood vessels, cavernous cavities, as well as edema, the proliferative activity of epithelial cells was assessed using immunohistochemical reaction with monoclonal antibodies to PCIA, the results obtained by us ranged from 5.9% to 14.3%

4 Patients with hemangioma This group consisted of 4 patients with, which corresponds to 4.7% of the total number of patients, there were 3 men, 1 women, the peak incidence was at the age of 25 - 35 years old, 78% of patients account for this age group. These patients have complaints of hoarseness, a feeling of a foreign body in the throat, the duration of the disease is from several months to several years, most patients are smokers, the presence of occupational hazards is denied During laryngoscopy, a hemangioma is a cyanotic formation, most often located in the anterior two-thirds of the vocal fold, having the appearance of a polyp on a wide base, mucous covering the tumor, shiny without signs of ulceration, a pronounced network of vessels covers the vocal fold Microscopically determined by a limited neoplasm represented by blood vessels various types, usually capillary, loose stroma with edema, the proliferative activity of epithelial cells was evaluated using an immunohistochemical reaction with monoclonal antibodies to PCIA, the results we obtained ranged from 9.5% to 14.3%

5 Patients with polypoid degeneration This group consisted of 8 patients, which corresponds to 9.3% of the total number of patients, there were 2 men, 6 women, the peak incidence was at the age of 41-50 years, this age group accounts for 73% of patients. These patients have complaints of hoarseness, a feeling of a foreign body in the throat, lack of air, the duration of the disease is several years, most patients are smokers, the presence of occupational hazards is noted by 5 patients With laryngoscopy, the process is

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localized in the area of the anterior two-thirds of the vocal folds, they look swollen, gelatinous, the mucous membrane is translucent, along the medial surface of the folds with uneven by the edge, their jelly-like edges run when inhaling and exhaling Along the medial edge, where there are few vessels, edematous tissue is gray, on the upper surface, where the vascular network is more pronounced, pink-colored folds, the mucous membrane with polypoid degeneration is shiny, smooth, thin, a sharp edema of the own layer of the mucous membrane with pronounced lymphostasis phenomena is determined In almost all cases, hyalinosis of the basement membrane of the mucous membrane is determined, the proliferative activity of epithelial cells is evaluated using an immunohistochemical reaction with monoclonal antibodies to RSIA The results we obtained they ranged from 7.1% to 9.5%.

6 Patients with papilloma This group consisted of 30 patients, which corresponds to 35% of the total number of patients, there were 22 men, 8 women, the peak incidence was at the age of 45-56 years, this age group accounts for 70% of patients, this is the largest group of patients In these patients, complaints of hoarseness, feeling a foreign body in the throat, lack of air, the duration of the disease is several years, most patients are smokers, the presence of occupational hazards is noted by 12 patients With laryngoscopy, papilloma is a formation that looks like a "mulberry berry" or a wart on a wide base with a fine-grained surface Color - from pale pink to bright red, the mucous membrane covering the tumor, shiny without signs of ulceration, the vascular network is not pronounced. Microscopically, the growth of tumor papillae with fibrous-vascular rods and hyperplastic multilayer squamous epithelium with signs of dyskeratosis is determined. Sometimes there is proliferation of epithelium with pronounced hyperplasia of basal cells, the papillary stroma is represented by loose connective tissue rich in vessels or dense, sometimes hyalinized connective tissue with a small number of vessels In the papilloma, the main cytotypic, histotypic and organotypic properties of the epithelium are preserved. The polarity of the location cells, completeness, the presence of its own membrane, without its germination, there are only well-presented signs of tissue atypism, the latter is expressed by uneven development of the epithelium and stroma, as well as excessive formation of small blood vessels, Papilloma is characterized by a tendency to recedivation and malignant degeneration. According to our observations, a relapse of papilloma after surgical treatment according to the method developed by us was observed in 2 patients, and malignant degeneration occurred in one patient, the proliferative activity of epithelial cells was evaluated using an immunohistochemical reaction with monoclonal antibodies to PCNA. The results obtained by us correspond from 9.9% in patients without dysplasia and up to 22.7% in a patient with dysplasia III st

7 Patients with squamous cell carcinoma This group consisted of 7 patients, which corresponds to 8% of the total number of patients, men there were 5, 2 women, the peak incidence was at the age of 51-60 years, 72% of patients account for this age group. These patients have complaints of hoarseness, a feeling of a foreign body in the throat, lack of air, the duration of the disease is several years, most patients are smokers, the presence of occupational hazards is noted by 1 patient During laryngoscopy, a similar condition is

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most often determined papilloma has a fine-grained, warty formation with areas of keratosis and ulceration, without clear boundaries, the strands of atypical epithelium are determined by microscopy, growing into the underlying tissue, destroying it and forming nest clusters, the latter are constructed so that the cells located on the periphery of the nest clusters correspond to the basal ones, and the central ones - more mature With a highly differentiated type of cancer, pronounced vertical anisomorphism of epithelial cells in the layers of cancer parenchyma, there are signs of keratinization With moderate histological differentiation, cancer cells have more pronounced polymorphism, but vertical anisomorphism in the layers of malignant epithelium is less noticeable, Higher mitotic activity is noted Low-differentiated cancer consists of small nests of tumor cells with slight similarity to squamous epithelium, fields are also characteristic necrosis, numerous figures of mitosis The proliferative activity of epithelial cells was evaluated using an immunohistochemical reaction with monoclonal antibodies to PCNA, the results we obtained ranged from 26.7% to 28%

In our work, a group of patients consisting of 38 people was examined in order to identify the possibility of infection with *Helicobacter Pylori* of the laryngeal mucosa in patients with chronic hyperplastic laryngitis, the study group included patients from the various groups we examined, of different ages, It is known from the anamnesis of the examined patients that 43% of them suffer! peptic ulcer of the stomach and/or duodenum with recurrent relapses, the rest of the patients with gastrointestinal diseases in the anamnesis deny Tissue sections from laryngeal neoplasms were stained using the Romanovsky—Giemsa method, after which they were examined under a light microscope with a magnification of 400 Revealed the degree of contamination of the laryngeal mucosa by the number of *Helicobacter Pylori* in the field of view weak - (+) up to 20 bacteria in the field of view, moderate - (++) - up to 50 bacteria in the field of view, pronounced - (+++) - more than 50 bacteria in the field of view, thus, the presence of *Helicobacter Pylori* was detected in 23 patients, which accounted for 61% of the total number of patients examined for *Helicobacter Pylori* Weak degree - 6 patients (26%), moderate degree — 10 patients (43.5%), pronounced degree - 7 patients (30.5%) With a weak degree of *Helicobacter Pylori* infection, the following forms of pathology met papilloma, fibrous polyp, squamous non-cancerous laryngeal cancer, with a moderate degree of *Helicobacter Pylori* infection, the following forms of pathology met laryngeal ventricular cyst, papilloma, with a pronounced degree of *Helicobacter Pylori* infection, papilloma, angiofibrous polyp Fragment research showed that there is no relationship between the presence of *Helicobacter Pylori*, the degree of contamination, morphological substrate and age of patients

The above indicates that hyperplastic processes of the larynx develop with long-term chronic inflammation. There are clinical and morphological forms of inflammation, exudative and proliferative, In turn, proliferative inflammation is divided into interstitial diffuse, granulomatous and inflammatory hyperregenerative growths. We conducted a histological study of micro-preparations stained with hematoxylin and eosin and

combined val Gison staining in signs of a chronic inflammatory reaction of tissues, fields of growth of coarse-fibrous connective tissue were revealed in all preparations.

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