

PATHOMORPHOLOGICAL CHANGES IN THE ORAL MUCOSA IN PATIENTS WITH COLON CANCER

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Abstract. *Recently, there has been a significant increase in the number of cancer diseases worldwide. Mortality from malignant tumors is second only to pathologies of the cardiovascular system. Oncological diseases take many lives not only among the elderly, but also among the relatively young generation.*

Key words: *carcinogens, hydrazines, aphtha, oncology, ulcer, hyperkeratosis, atrophy, acanthosis, hyperplasia, parakeratosis, dysplasia, adenocarcinoma, infiltration.*

Relevance. Among all oncological diseases, gastrointestinal tract tumors have been one of the most common for several decades [1,2]. From the analysis of the data presented in the literature, a large group of oncogenes was discovered and characterized, mutations in which lead to their increased expression and, as a result, to malignant transformation of cells[4,5].

It is known that the neuroendocrine and immune systems play an important role in the implementation of the carcinogenic effect [3,6]. There is evidence that tumors are formed on the basis of pronounced disorders of the immune system [4,7,8]. The accumulated data led to the development of an independent scientific direction of modern Oncology - cancer growth immunology, which was formed due to the intensive work of both domestic and foreign researchers.

Epidemiological and experimental studies conducted to date have led to the conclusion that the development of cancer is associated with the peculiarities of lifestyle and the human environment [11,12]. Among the lifestyle factors that significantly increase the risk of cancer, in recent years, increasing attention has been paid to poor nutrition, low physical activity, psychoemotional stress, and bad habits [9,10].

From the analysis of the data presented in the literature, a large group of oncogenes was discovered and characterized, mutations in which lead to their increased expression and, as a result, to malignant transformation of cells [2,7,9].

Ionizing radiation and chemical agents, as well as non-genotoxic agents, are known to cause tumors [4,8].

One of these agents is hydrazines, a class of chemical elements whose carcinogenic effects have been studied relatively recently.

Hydrazines are used as a chemical reagent, developer in photography, antioxidant, preservative, insecticide, in the production of plastics, synthetic resins, adhesives, rubber, as fluxes in the Metalworking industry [2,7,9].

To date, a huge number of derivatives of this compound are known. Of the huge number of hydrazine derivatives, only 100 have been studied, of which 40 are harmful to human health, and 20 are carcinogens for animals [3].

Hydrazine and its derivatives can enter the body in various ways and their relative toxicity does not depend on the methods of entry. They are equally well absorbed by subcutaneous, enteral, inhalation routes of administration, as well as by cutaneous application. However, the most dangerous is inhalation exposure.

In the available literature, there are no data on the state of the oral cavity against the background of the growth of colon adenocarcinoma caused by the introduction of 1,2-dimethylhydrazine. Meanwhile, it is known that the introduction of a carcinogen at a dose of 20 mg / kg is sufficient for the induction and subsequent development of colorectal cancer in rats [7]. The authors studied the effect of 1,2-dimethylhydrazine only on the morphofunctional state of the rat liver. The adaptive reserves of the oral organs remain unexplored with the introduction of a carcinogen, both in higher and lower doses.

Objective: comprehensive clinical, morphological, and structural and functional changes in oral tissues in patients with colon cancer.

Material and methods. Analysis of diagnostics of patients with colon cancer (90 patients) aged 25-65 years, who were on inpatient treatment in the regional cancer dispensary (Samarkand). The comparison group consisted of persons of the same sex and age with an unburdened history (30 persons). Clinical examination of patients began with finding out complaints and collecting anamnestic data: the duration of the disease, provoking factors, treatment, frequency of exacerbations, duration of remissions. The state of the oral mucosa was assessed by the presence of affected elements, their number, localization, severity of inflammatory phenomena, the state of the edges of ulcerative elements and their size.

The oral cavity was examined under natural and artificial light by anatomical and topographic zones: the cheek area (right, left), the oropharynx area (soft and hard palate), the Palatine surfaces of the upper jaw gums, the tongue, the bottom of the oral cavity, the lingual surfaces of the lower jaw gums, the vestibule of the oral cavity.

When examining the vestibule of the oral cavity, the depth of the vestibule of the oral cavity and the level of attachment of the upper and lower lip bridges were evaluated.

In accordance with WHO recommendations, the oral mucosa was examined: color, degree of moisture, soreness, changes in its relief, violation of integrity (erosion, aphthae, ulcers, cracks). In the presence of pathological elements, the localization, size, number and depth of the lesion were described.

The bottom of the oral cavity and regional lymph nodes (submandibular, chin, parotid) were palpated by manual method, describing their size, consistency, mobility, solidity with the underlying tissues, the presence of soreness, and the consistency of the oral mucosa in the affected areas was determined. An instrumental method was used to examine the oral cavity using a dental mirror, probe and tweezers: probing and percussion of the teeth, index assessment of the condition of the teeth and periodontium.

In the examination of patients included gender, age, characteristics, underlying disease, frequency and duration of remission, relapse, assessed the preventive activities offered to patients to treat disease. For the reliability of the scientific work, we preferred to conduct a morphological study of the oral mucosa in colorectal cancer. To conduct a histological study, we selected 40 patients with colon cancer accompanied by damage to the oral mucosa, in particular, the formation of aft, ulcerative-necrotic elements. Pieces of the mucous membrane from the affected area for histological examination were placed in a 4% neutral formalin

solution, fixed in alcohols, poured into paraffin according to the Lloyd's method, then placed in a thermostat for a day and prepared paraffin blocks, from these blocks ultra-thin sections (4-5mm) were cut out on the microtome. The finished sections were stained with hematoxylin and eosin. Histological examination was performed with a Leika binocular microscope (Germany), magnification of the lens 10x, 40x, photo documentation was performed with a color web camera MD130.

Research result

The incidence of colorectal cancer is highest in both sexes at the age of 61-70 years, and in this age group, the incidence is significantly higher among women. In other age groups, the gender distribution is approximately uniform. The lowest incidence occurred at the age of 20-30 years among women and 31-40 years among men (Fig. 1).

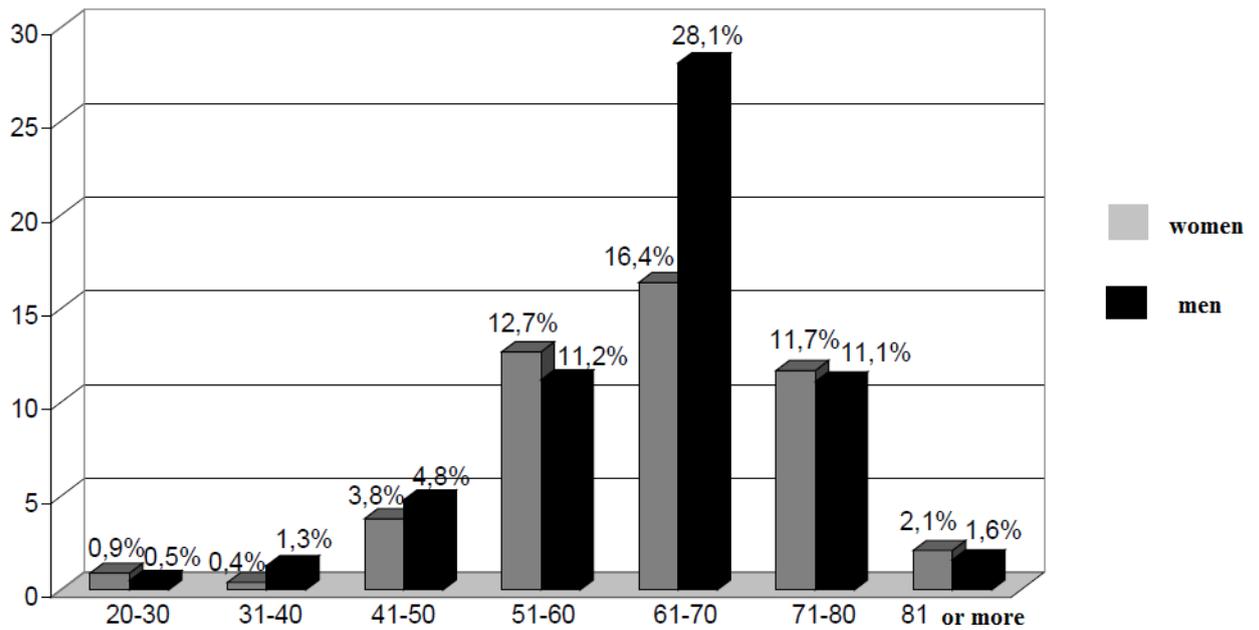


Figure 1. Prevalence of colorectal cancer by gender and age

Colorectal cancer is most common in the distal parts of the colon and rectum, with the highest percentage of occurrence in the rectum and sigmoid colon, in other parts of the tumor were distributed almost evenly (Fig. 2).

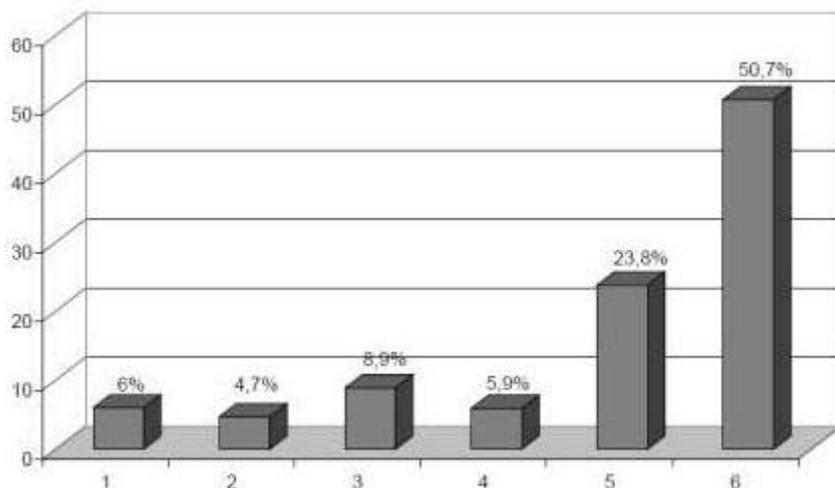


Fig. 2. Distribution of colorectal cancer by topography. Where: 1-Caecum; 2-Ascending colon; 3-Transverse colon; 4-Descending colon; 5-Sigmoid colon; 6-Rectum.

According to the histological structure, the absolute majority of colorectal cancers are medium-differentiated adenocarcinomas, and squamous cell carcinoma is the most rare (Fig. 3).

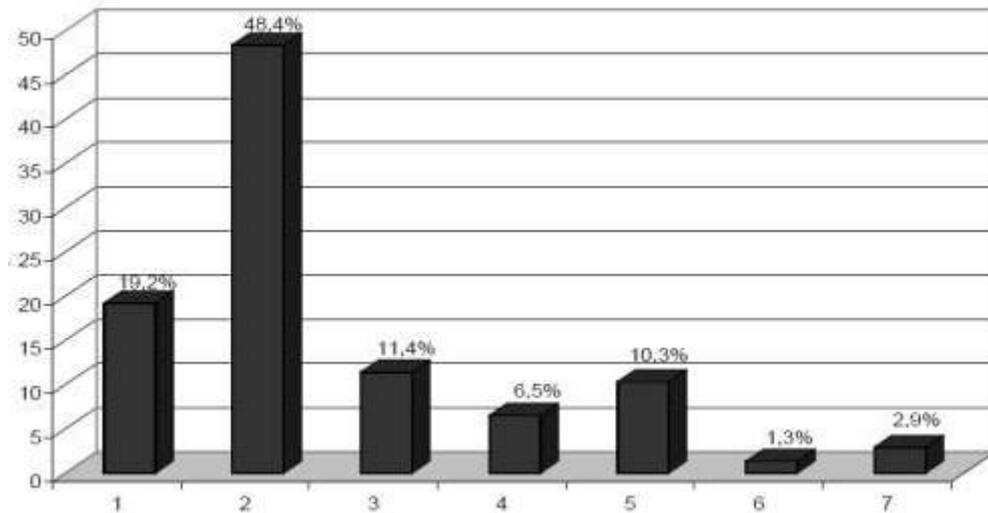


Fig. 3. The distribution of colorectal cancer according to histological structure. Where: 1-low-Grade adenocarcinoma; 2-medium-Grade adenocarcinoma; 3-high-Grade adenocarcinoma; 4-Solid cancer; 5-Mucosal cancer; 6-squamous Cell cancer; 7-Cricoid cell cancer.

Pathomorphological picture of the mucous membranes of the mouth. Below are the results of histological examination of the left buccal mucosa of a 44-year-old patient with a diagnosis of colon adenocarcinoma. Examination of the oral mucosa of this patient revealed the presence of an aphthous lesion slightly protruding above the surface of the mucosa, ulceration of the epithelium and the presence of a grayish plaque. The surrounding tissue is hyperemic. Microscopically, there was peeling of the surface layers of cells of the multilayer squamous epithelium, in some areas keratinization. Pronounced acanthosis, increased layers, proliferation of basal cells and their hyperchromia-moderate dysplasia, as well as mitotic activity of basal cells and signs of regeneration.

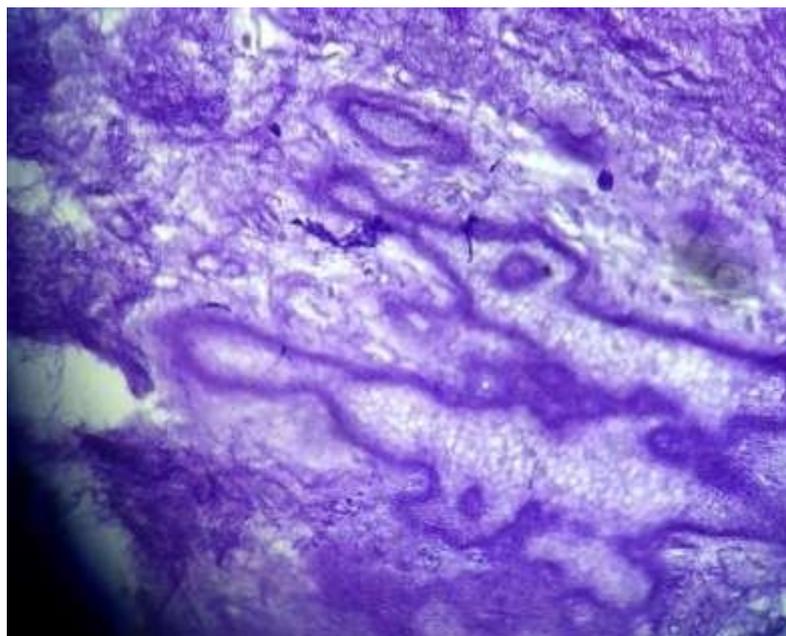


Figure 4. the Mucosa is represented by a multi-layered flat non-keratinizing epithelium. There is a peeling of the surface layers of cells, in some areas keratinization. Color of hematoxylin and eosin.IN 40x0, 25

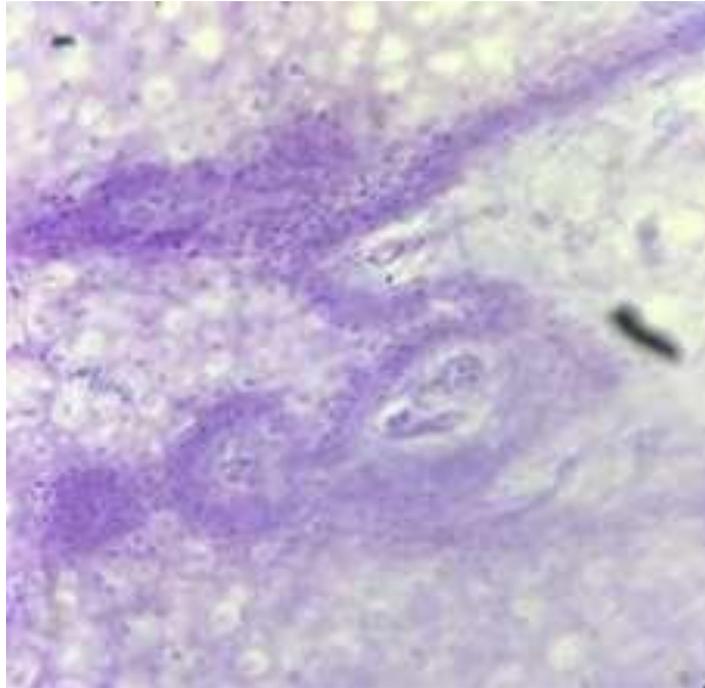


Figure 5. Surface epithelial cells in some areas of the mucous membrane with hyperkeratosis and there is a layered accumulation of necrotic cells. Color of hematoxylin and eosin.IN 100x1, 25

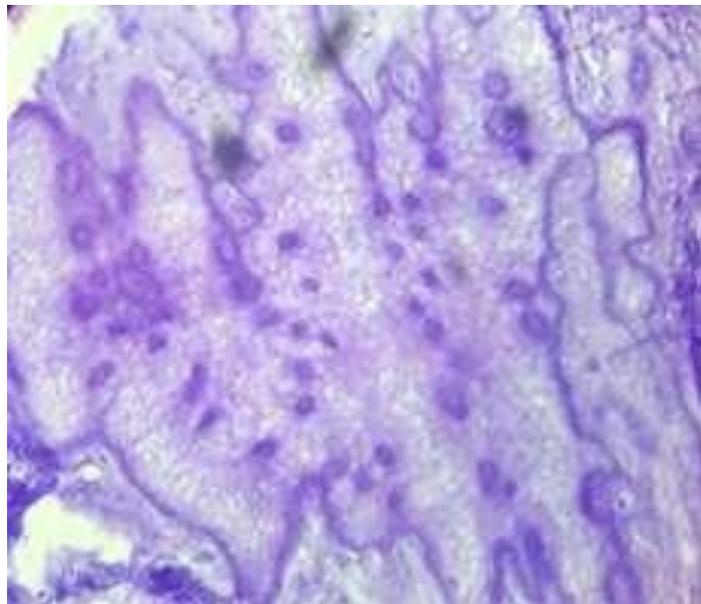


Figure 6. Pronounced acanthosis, increased layers, proliferation of basal cells and their hyperchromia, moderate dysplasia. Color of hematoxylin and eosin. IN 100x1, 25

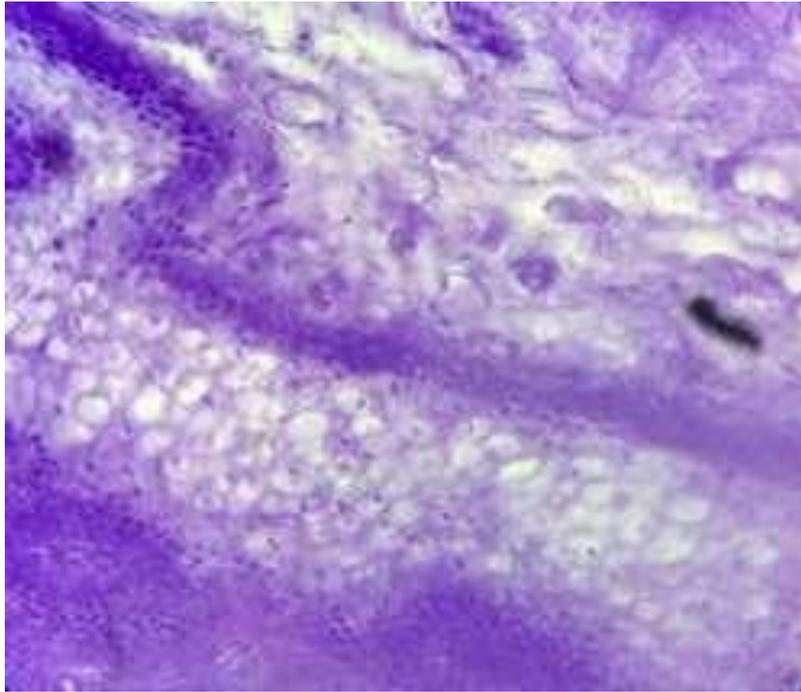


Figure 7. Mitotic activity and regeneration of basal cells, as well as areas of acantosis are Noted. Color of hematoxylin and eosin.IN 40x0, 65

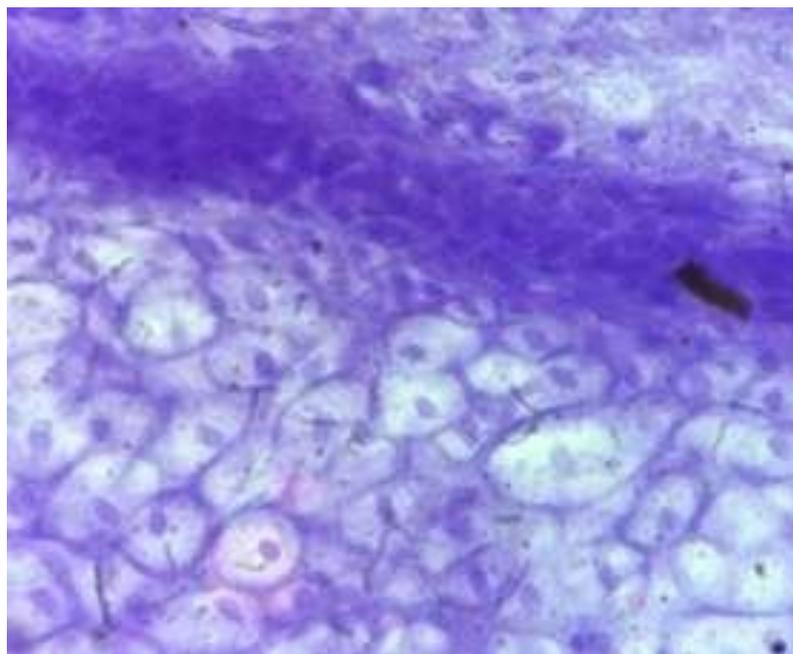


Figure 8. In some areas of the mucosa, basal cells are necrotic, the basal membrane is destroyed, and their loosening and loosening are observed. There is edema of the intercellular substance. Stained with hematoxylin and eosin. IN 100x1, 25.

Conclusion. As a result of the morphological study of ulcerative lesions of the oral mucosa, in colon carcinoma, the most frequent manifestations of changes were characterized by the development of neurosis and ulceration of the epithelium, the formation of ulcerative defects, leukoplakia and signs of dysplasia of the flat integumentary epithelium of a moderate degree in the form of acanthosis and mitotic activity of basal layer cells, destruction of the basal layer. The above-mentioned morphological changes in the oral mucosa in colon carcinoma

correlate with the clinical data of patients with neoplastic lesions of the gastrointestinal tract. The results of pathomorphological examination of the oral mucosa in patients with colon cancer indicate the development of structural disorders characterized by preneoplastic processes, such as leukoplakia, moderate and severe dysplasia, increased mitotic activity of epithelial cells against the background of growth of colon adenocarcinoma. All this points to the need to develop an algorithm for providing dental care to patients with colon cancer.

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