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Clinical and Morphological Aspects of Precancerous Processes and Colorectal Cancer

Gulsara Jamalovna Reimnazarova [1], Bokhodir Asadullaevich Magrupov [2], Akobir Rizokulovich Nurov [3], Andrey Nikolaevich Don [4]

[1, 4] Associate Professor, Candidate of Medical Sciences, D. in medicine at Tashkent State Institute of Dentistry

[2] Professor, Doctor of Medical Sciences, Head of Pathological Anatomy and Forensic Medicine Department of Centre for Development of Professional Qualification of Medical Workers

[3] Assistant of the Chair of Physiology and Pathology, Tashkent State Institute of Dentistry

Abstract: This article is devoted to the problem of prevention and timely diagnostics of precancerous processes of the large intestine as well as early detection of initial neoplastic process. Characteristics of chronic colitis, adenomatous polyp, frequency and frequency of occurrence by sex, morphological features are given. Cancerous tumors of one or another colon section are accompanied by immunosuppression, metabolic disorders, dysfunction, as well as disturbed water-electrolyte balance.

Keywords: digestive conveyor, chronic colitis, immunosuppression, adenomatous polyp, colon, sigmoid colon, adenocarcinoma, malignant tumor, malignancy.

Introduction. The issues of social responsibility and health promotion are undoubtedly of great importance. Malignant neoplasms of the gastrointestinal tract rank among the leading causes of morbidity and mortality in the world. In Russia in the structure of morbidity of malignant tumours stomach cancer in men and women stands on the second place (18,1 and 13,7% of cases respectively). According to numerous authors, the number of patients with gastric cancer and, correspondingly, the number of surgical interventions is steadily growing, and the number of complications associated with them is still rather high. Frequency of lethal outcomes in malignant neoplasms of the stomach, according to the data of WHO (Geneva, 1993), makes 42,8 men and 29,7 women per 10000 inhabitants. Currently, the human microbial ecological systems are considered to be a kind of organism that plays an important role in providing immune-stimulating, vitamin-forming, enzyme functions of the organism. Besides, normal microflora participates in regulation of cholesterol concentration in blood, normalization of blood pressure, has antimutagenic and anticarcinogenic action, which determines the importance of its correction. Introduction. The issues of social responsibility and health promotion are undoubtedly of great importance. Malignant neoplasms of the gastrointestinal tract rank among the leading causes of morbidity and mortality in the world. In Russia in the structure of morbidity of malignant tumours stomach cancer in men and women stands on the second place (18,1 and 13,7% of cases respectively). According to numerous authors, the number of patients with gastric cancer and, correspondingly, the number of surgical interventions is steadily growing, and the number of complications associated with them is still rather high. Frequency of lethal outcomes in malignant neoplasms of the stomach, according to the data of WHO (Geneva, 1993), makes 42,8 men and 29,7 women per 10000 inhabitants. Currently, the human microbial ecological systems are considered to be a kind of organism that plays an important role in providing immune-stimulating, vitamin-forming, enzyme functions of the organism. Besides, normal microflora participates in regulation of cholesterol concentration in blood,

normalization of blood pressure, has antimutagenic and anticarcinogenic action, which determines the importance of its correction. Pre-cancerous conditions include chronic colitis, in particular chronic ulcerative colitis and granulomatous colitis (Crohn's disease), which constitute the main group of facultative precancerous conditions. Diverticula of the colon, especially those complicated by diverticulitis, are precancerous. Polyposis involvement of the colon (obligate precancer), which can be in the form of: 1. solitary polyps (adenomatous, villous), which are malignised in 45-50% of cases, especially polyps larger than 2 cm; villous polyps are more often malignant; 2. Multiple polyposis of the colon, which in turn can take the following forms: genetically determined polyposis (familial hereditary diffuse polyposis, Peitz-Egers syndrome, Türkö syndrome); nonhereditary polyposis (sporadic polyposis, concomitant polyposis, Cronkite-Caneday syndrome).

Factors contributing to colorectal cancer can be divided into intrinsic and extrinsic:

Internal factors for colorectal cancer include those that are related to heredity as well as to pre-existing diseases. For example, individuals with familial adenomatous polyposis of the colon, Türkö syndrome, Gardner syndrome, Oldfield syndrome and several others have an increased risk of colorectal cancer. Almost all untreated individuals are eventually diagnosed with cancer. Examples of diseases that increase the risk of colon cancer are Crohn's disease and ulcerative colitis. Any chronic inflammatory disease of the large intestine increases the risk of developing cancer, sometimes tenfold.

External causes of colorectal cancer are diet, work and lifestyle habits. Comparative human anatomy shows that a person's diet should consist of 80% plant-based foods. That is why colon and rectal cancer is much less common among vegetarians and much more frequent among meat eaters. Large quantities of fatty and meaty foods lead to processes of anaerobic protein decomposition (putrefaction), the products of which damage the epithelium and increase the likelihood of cancer. Chronic intake of carcinogens (e.g. asbestos, benzpyrene and some other substances) also contribute to the development of colon cancer.

Materials and Methods: In order to identify the types of colorectal tumour and for comparative analysis, material was collected from 3 TMA clinics for the period from 2020 to 2022. Biopsies of 187 patients, with different lesions of rectum, sigmoid colon were studied. Of these, 54 were female and 70 male.

Results and discussion of the research: At histological study in 140 cases severe dysplasia, part of them combined with malignization of adenomatous polyps and adenocarcinoma of various degrees were revealed, in 23 cases adenomatous polyps without signs of malignancy and 7 cases with severe chronic inflammatory infiltration and destruction of epithelium were revealed. The average age of the women was between 35 and 55 years. The incidence of the lesion was observed at the age of 50 to 65 years and amounted to 28 cases (21.5%), from 30 to 49 years - 18 cases (15.6%). Analysis of colorectal biopsy studies in men showed that malignant tumour lesions predominated at the age of 50-65 years, with an incidence of 35 cases (22.5%). At the age of 30-49 years 19 cases (12.7%) were found. And in the age group over 65 the incidence was higher in women with 24 cases (15.6%). All cases were characterised by spreading to different levels of the intestinal wall, sometimes with diffuse lesions, in some cases to all layers of the wall and of the circular type. It should be noted that villous adenomas or adenomatous polyps have no stalk, are broad based, resemble a lobular sponge in structure and bleed at the slightest touch. The villous adenomas differ from other intestinal tumours in that they secrete large amounts of water and electrolytes into the intestinal lumen. Malignization of villous adenomas is much more frequent than that of tubular adenomas. The erosive and ulcerative lesions of villous polyps should be regarded as the beginning of the malignization process. Malignified adenomatous polyps were often solitary on a broad base and with a larger surface area taken over. The histological picture of villous adenomatous polyps was characterised by hyperplasia of the glandular epithelium, cell proliferation, and in some cases there was a marked chronic inflammatory infiltration of the stroma (Figure 1). Glandular-vesicular adenomas were represented by glandular tissue with multiple villi; up to a quarter of the cells in such adenomas underwent dysplastic changes (Figure 2).

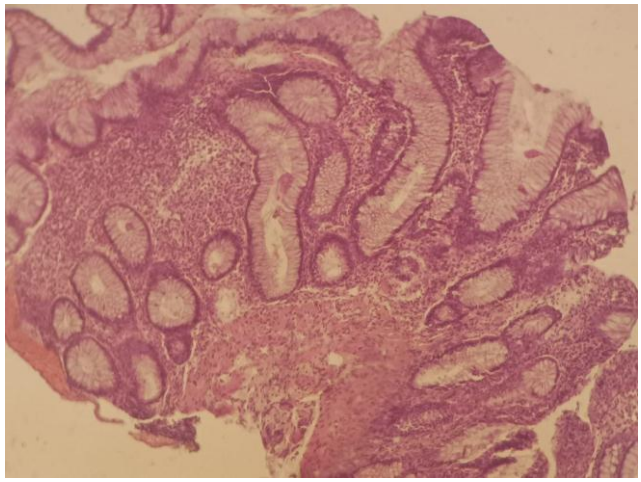

Figure 1. A villous adenomatous polyp of the colon with marked inflammatory cell infiltration of the stroma and proliferation of glandular epithelial cells. Hematoxylin and eosin staining. Enlarged in volume. 100.

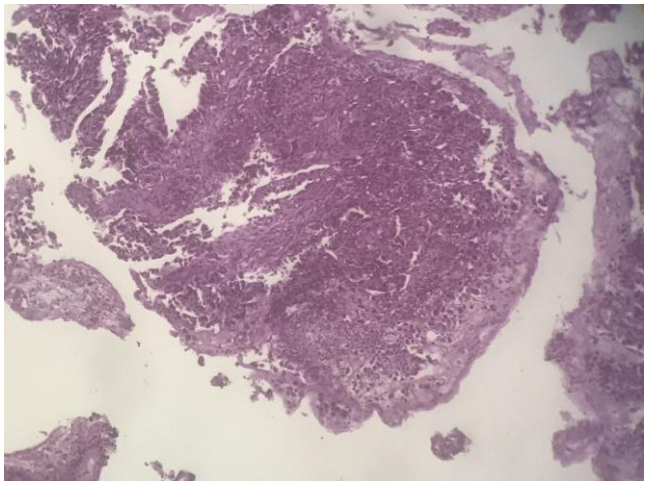

Figure 2. Adenomatous polyp of the colon with dysplastic changes in the glandular epithelium and cell polymorphism. Hematoxylin and eosin staining. Enlarged in volume 40.

Papillary adenomas - 80% consist of thin finger-shaped growths of connective tissue of the mucosa covered by epithelium, as well as of bocalytic cells producing large amounts of mucus - have the highest risk of malignisation.

Conclusion: The studies have thus shown a high risk of malignancy in chronic colitis and adenomatous polyp malignisation. Considering the above, it is necessary to increase the mandatory diagnostic colonoscopy in persons with suspected inflammatory processes, hereditary predisposition, with polyposis formations for the purpose of early diagnosis and prevention of possible complications.

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