

Distribution Of Colon Polyps By Localization Depending On The Age Of Patients (Belarus, Grodno Region, 2022)

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Summary. According to modern scientific data, colon cancer is one of the most common oncological diseases, the main risk group for this disease is formed by patients over 55 years of age. In most cases, the appearance of a malignant tumor is preceded by the accumulation of mutations in the cells of the colon epithelium, which is morphologically manifested by a benign tumor - a polyp, which is often clinically asymptomatic. Therefore, this study is relevant for modern medicine. We investigated the distribution of colon adenomas in patients of the Grodno region with the diagnosis of colon polyp (D12) depending on the patient's age and localization, who received treatment at the Grodno University Hospital in 2022. It was found that in patients diagnosed with colon polyp (D12), the tumor is reliably ($p < 0.05$) more often localized in the sigmoid colon: in 36.4% cases, CI [31.9%; 41.0%]. With age, in patients diagnosed with colon polyp (D12), the frequency of localization of tumors in the sigmoid colon significantly ($p < 0.05$) decreases, while in the ascending, transverse and descending colon it increases.

Keywords: colon polyp, polyposis, rectum, sigmoid colon, colon, anal canal, Grodno region, Belarus, rural residents, urban residents, males, females.

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I. INTRODUCTION

According to modern scientific data, colorectal cancer is one of the most common oncological diseases; the main risk group for this disease is formed by patients over 55 years of age. There is a significant trend of increasing the incidence among a relatively young population [1, 4]. In most cases, the appearance of a malignant tumor is preceded by the accumulation of mutations in the cells of the colon epithelium, which is morphologically manifested by a benign tumor - a polyp, which is often clinically asymptomatic [1, 2, 3]. According to many researchers, the risk of developing colorectal cancer in individuals aged 40-50 years tends to increase; the asymptomatic clinical course of precancerous colon disease does not contribute to the early diagnosis and treatment of the disease at the stage of a benign tumor [2, 3, 4]. Therefore, this study is relevant for modern medicine.

II. EXPERIMENTAL PROCEDURE

Goal. To study the distribution of colon polyps (D12) depending on the localization in patients of the Grodno region, belonging to different age groups, in 2022.

The study included 340 electronic medical records of patients hospitalized in the department of purulent surgery of the Grodno University Clinic with a diagnosis of colon polyp (D12) for colonoscopy in 2022.

Statistical data processing was carried out using the program «Statistica 13». LOG-linear analysis was used to assess the significance of the influence of factors. For the frequencies obtained (in fractions of a unit), Yates correction was applied. For each frequency, the value of φ – Fisher's auxiliary variable – was calculated in radian measure. For each obtained value of φ - Fisher's variable, a 95% confidence interval was calculated using a two-tailed t-test. The boundaries of the obtained confidence interval for φ - Fisher's variable, were recalculated into the boundaries of the confidence interval of the original variable – frequency. Further, in the

text, the confidence interval is abbreviated CI, its boundaries are indicated in square brackets. The significance of frequency differences was assessed using Fisher's auxiliary variable ϕ in radians and two-tailed t-test statistics (ϕ -test). The result was considered as statistically significant with the level of error of the first kind $p < 0.05$.

III. RESULTS AND DISCUSSIONS

In total, 340 case histories of patients of the Grodno University Clinic with a diagnosis of colon polyp (D12), who received treatment in 2022, were studied. The minimum and maximum ages of the examined patients were 31 and 78 years, respectively, with an average age of 61 years. The distribution of colon polyps, depending on the localization, by age groups is presented in Table 1.

Table 1 - Distribution of colon polyps depending on the localization.

Age	Group of Patients	number of colon polyps						
		L ₁	L ₂	L ₃	L ₄	L ₅	L ₆	Σ
Young (20-35 years old)	5	0	0	1	0	0	4	5
Mature (35-50 years old)	80	8	5	7	17	43	15	95
Elderly (50-65 years)	145	15	6	18	20	75	35	169
Senile (65 years and older)	110	8	22	23	36	51	17	157
General group:	340	31	44	52	73	155	71	426

Note: L₁ – cecum; L₂ – ascending colon; L₃ – transverse colon; L₄ – descending colon; L₅ – sigmoid colon; L₆ – rectum and anal canal; Σ – the sum of the number of polyps per line.

According to the research results, in the young group of patients (20-35 years), a transverse colon polyp was found in 20.0% cases, CI [0.06%; 61.5%], rectum polyp - in 80.0% cases, CI [38.5%; 99.9%]. In this group of patients, the rectal polyp occurred statistically significantly more often than other localizations ($p < 0.05$).

In the mature group of patients (35-50 years), the following frequencies of localization of colon polyps were established: cecum - in 8.4% cases, CI [3.7%; 14.8%], ascending colon - in 5.3% cases, CI [1.7%; 10.6%], transverse colon - in 7.4% cases, CI [3.0%; 13.4%], descending colon - in 17.9% cases, CI [10.9%; 26.2%], sigmoid colon - in 45.3% cases, CI [35.4%; 55.3%], rectum and anal canal - in 15.8% cases, CI [9.2%; 23.8%]. In this group, the localization of polyps in the sigmoid colon was observed reliably more often ($p < 0.05$) than other localizations.

In the elderly group of patients (50-65 years), the following frequencies of localization of colon polyps were established: cecum - in 8.9% cases, CI [5.1%; 13.6%], ascending colon - in 3.6% cases, CI [1.3%; 6.9%], transverse colon - in 10.7% cases, CI [6.5%; 15.7%], descending colon - in 11.8% cases, CI [7.4%; 17.1%], sigmoid colon - in 44.4% cases, CI [37.0%; 51.9%], rectum and anal canal in 20.7% cases, CI [15.0%; 27.1%]. In this group, the localization of polyps in the sigmoid colon was observed reliably more often ($p < 0.05$) than other localizations.

In the senile group of patients (65 years and more), the following frequencies of localization of colon polyps were established: cecum - in 5.1% cases, CI [2.2%; 9.1%], ascending colon - in 14.0% cases, CI [9.0%; 19.9%], transverse colon - in 14.6% cases, CI [9.6%; 20.6%], descending colon - in 22.9% cases, CI [16.7%; 29.8%], sigmoid colon - in 32.5% cases, CI [25.4%; 40.0%], rectum and anal canal - in 10.8% cases, CI [6.5%; 16.1%]. In this group of patients, localizations of polyps in the descending colon and sigmoid colon were observed significantly ($p < 0.05$) more often than other localizations.

In the general group of patients, the following frequencies of localization of colon polyps were established: cecum - in 7.3% cases, CI [5.0%; 9.9%], ascending colon - in 10.3% cases, CI [7.6%; 13.4%], transverse colon - in 12.2% cases, CI [9.3%; 15.5%], descending colon - in 17.1% cases, CI [13.7%; 20.9%], sigmoid colon - in 36.4% cases, CI [31.9%; 41.0%], rectum and anal canal - in 16.7% cases, CI [13.3%; 20.4%]. In this group, localizations of polyps in the descending colon, sigmoid colon and rectum were observed significantly more often ($p < 0.05$) than other localizations.

Thus, in general, it was established that the greatest frequency of localization of benign tumors of the colon is observed in the distal segments: descending colon, sigmoid colon and rectum. This fact may be due to the toxic effect of intestinal contents, which is more pronounced in these parts.

Statistical analysis of factors revealed a significant relationship between the patient's age and the incidence of colon polyps ($p < 0.05$). As a result, it was found that with age, the frequency of detection of polyps in the sigmoid colon decreases, while in the ascending, transverse and descending colons it increases. The established relationship between the age of the patient and the frequency of localization of colon polyps can be explained by a number of the following universal patterns. If a person develops colon polyps at a young, mature, and elderly age, the likelihood of reaching old age decreases, and when a person reaches old age, the likelihood of developing a benign tumor of the colon increases over time in all colon segments. Therefore, it is very important to examine all parts of the colon, especially in senile patients during colonoscopy.

IV. CONCLUSION

In patients diagnosed with colon polyp(D12), the tumor is localized reliably ($p<0.05$) more often in the sigmoid colon: in 36.4% cases, CI [31.9%; 41.0%]. With age, in patients diagnosed with colon polyp(D12), the frequency of localization of tumors in the sigmoid colon significantly ($p<0.05$) decreases, while in the ascending, transverse and descending colon it increases.

Conflict of interest

There is no conflict to disclose.

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