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THE STRUCTURE OF SYNCHRONOUS MULTIPLE PRIMARY COLORECTAL CANCER

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ABSTRACT — One of the problems of modern oncology is the lack of timely diagnosis of synchronous forms of colorectal cancer. Therefore, the AIM OF THIS STUDY was to evaluate the structure of synchronous primary multiple forms of colorectal cancer. METHODS: We analyzed the results of colorectal cancer diagnostics (n = 583) in the period 2010–2019. We did not include patients with metachronous colorectal cancer in the study. The average age of all patients was 71.6 ± 7.4 years. There were 1.5 times more men than women. RESULTS: Synchronous colorectal cancer was detected in 171 (29.3%) patients. With synchronous primary multiple forms of colorectal cancer, 2 tumors were diagnosed in every second patient. In synchronous colorectal cancer, tumors were localized twice as often in the colon (n = 118) than in the rectum (n = 53). CONCLUSIONS: In patients with colorectal cancer, synchronous tumors occur in every third case. Synchronous colorectal cancer is more common in men. In the majority of patients (59.1%), synchronous colorectal cancer was detected within 6 months after imaging of the primary tumor.

KEYWORDS — colorectal cancer, synchronous carcinoma, multiple primary cancers, survival, diagnosis.

INTRODUCTION

With an increase in the overall survival of oncology patients, including patients with colorectal cancer (CRC), the incidence of multiple primary forms increases [1]. The proportion of CRC in the total amount of multiple primary tumors of various localization equals 17% [2]. It was found that 6% of radically cured patients with colorectal cancer subsequently develop new primary tumors [3]. In this case, the success of the treatment of multiple primary tumors depends on the moment of detection of the second and subsequent tumor foci [4]. The complexity of the diagnosis of multiple primary malignant neoplasms also lies in the absence of a characteristic clinical picture. In some cases, signs of synchronous tumors are masked either by pronounced manifestations of one of them, or by concomitant non-tumor pathology.

Aim:

To assess the structure of synchronous primary multiple forms of colorectal cancer.

METHODS

This work was based on the analysis of the results of colorectal cancer treatment in the period 2010–2019. We analyzed the results of examination and treatment in 583 patients with colorectal cancer. There were no age restrictions for patients. The average age of all patients was 71.6 ± 7.4 years. In all patients, we evaluated the time of diagnosis, the number of detected tumors, and the anatomical location of the tumor. Exclusion criteria were metachronous tumors.

The statistical analysis was performed using spreadsheets "EXCEL" and "STATISTICA 8.0". The significance of differences between quantitative indicators was assessed using the Mann–Whitney test. Differences were considered significant at $p < 0.05$.

RESULTS

Among all detected cases of colorectal cancer (n = 583), synchronous tumors were detected in 171 (29.3%) patients. We observed that the largest number of patients was simultaneously with two tumors of colorectal cancer — 164 (95.9%) (Table 1). There were 21.6% more men with synchronous colorectal cancer than women. Among patients with two carcinomas, men also significantly prevailed over women ($p < 0.05$) (Table 1). However, we did not find a significant difference between men and women in the presence of three tumor nodes ($p > 0.05$). There were no patients with five or more synchronous colorectal tumors in our study.

We found a direct relationship between the patient's age and the number of synchronous colorectal cancer tumors (Fig. 1) ($p < 0.05$, CI 65.5-77.5).

In 70 (40.9%) patients, synchronous primary multiple colorectal cancer was detected during revi-

Table 1. *Distribution of patients depending on the number of detected tumors in synchronous primary multiple colorectal cancer*

Number of tumors	Total(n=171)			
	men		women	
	n	%	n	%
Two tumors	99	57,8	65	38,0
Three tumors	3	1,7	2	1,1
Four tumors	2	1,1	_	_
Total	104	60,8	67	39,2

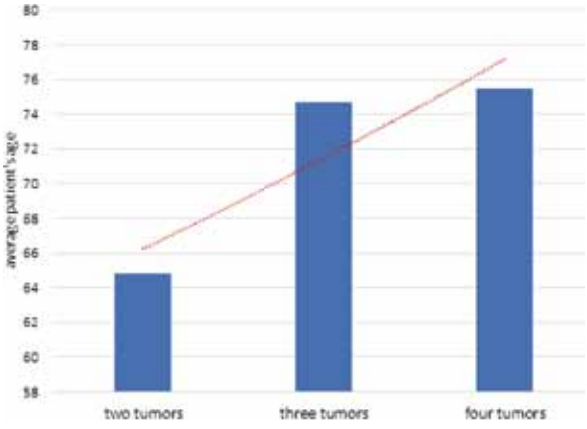

Fig. 1. *Dependence of the number of synchronous colorectal cancer tumors on the patient's age*

sion of the abdominal cavity during surgical treatment of the disease. In the remaining patients (n = 101 (59.1%), this disease was detected within 6 months after surgery.

The most frequent localization of synchronous primary multiple colorectal cancer was in the colon (n = 118 (69.0%). In other cases, n = 53 (31%) tumors were localized in the rectum.

DISCUSSION

Synchronous colorectal cancer is multiple (two or more) malignant colorectal tumors that occur simultaneously in the same anatomical region. With synchronous and metachronous neoplasms localized in the gastrointestinal tract, the second tumor is untimely detected in more than 30% of observations: 16% of synchronous neoplasms are diagnosed during surgery, ⅔ of them at stages III and IV of the disease [1]. Multiple primary colorectal cancer can develop in every 5th patient with familial adenomatous polyposis and ulcerative colitis [4]. In this regard, in addition to primary screening, diagnosis of multiple primary forms of colorectal cancer is relevant today. The main methods are clinical data, X-ray and endoscopic examination.

Synchronous colorectal cancer is rare. So, according to Zhang C. et al. the overall incidence of multiple primary colorectal cancers was 2.8% [4]. With about the same frequency, this form of cancer is detected in Germany: out of a cohort of 3,714 patients, 103 (2.7%) people were diagnosed with Multiple primary colorectal cancers [5]. In Denmark, synchronous colorectal cancer is even less common and was diagnosed in 1.3% of the cases [6]. A, the results of the study by De Rosa M. et al. showed that during surgery, or in the postoperative period within 6 months from the date of the initial diagnosis, synchronous colorectal cancer was detected in 8% of cases [7]. Vitko N.K. et al. over ten years of follow-up, 238 cases of primary multiple forms of the colorectal cancer were identified [3]. Our study showed that synchronous colorectal cancer was detected in 171 (29.3%) patients. Perhaps such high rates are due to the fact that we took into account only patients with tumors of the colorectal zone.

Synchronous colorectal cancer manifests itself not only at the time of diagnosis before surgery, but also several months after removal of the primary tumor. Perhaps such high incidence rates of synchronous colorectal cancer are due to the fact that we took into account only patients with tumors of the colorectal zone only.

CONCLUSIONS

Synchronous colorectal cancer occurs in almost ⅓ of cases among malignant neoplasms of the colon. Synchronous primary multiple forms of colorectal cancer are more common in men. In almost ⅔ of patients, synchronous primary multiple colorectal cancer is visualized within 6 months after removal of the primary tumor. Consequently, this group of patients needs not only rehabilitation, but also prolonged follow-up by specialists.

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