Eighteen Years' Retrospective Review of Colorectal Cancer Cases in Eastern Population

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ABSTRACT

Objective: We aimed to determine the demographic characteristics of colorectal cases and changes in cancer localization according to years in our region.

Materials and Methods: In the present study, 752 patients diagnosed with colorectal cancer between January 1992 and December 2010 were included.

Results: Of all the patients, 427 (56.8%) were males and 325 (43.2%) were females, with a male/female ratio of 1.3/1. The mean age was 56.2±14.9 years. The most commonly encountered complaint at the first application was rectal bleeding (38.4%). The most commonly encountered tumor localizations were in the rectum (55%) and sigmoid colon (18%). In general, tumors were observed to be localized in the right colon at 16.1% and in the left colon at 83.9%. When tumor localizations were compared in the first 10 years of the study with the second 10 years in the present study, it was observed that tumor numbers in the right colon were increased. Cases in our study were diagnosed as Stage IV according to the tumor, node, metastasis (TNM) classification, and liver metastasis was encountered most commonly.

Conclusion: Although colorectal cancer cases have been most commonly encountered in the rectum, it has been recently determined that right colon tumor percentages were increased. It was defined that they were generally diagnosed at later stages. Therefore, colorectal cancer incidence may be decreased by the widespread use of endoscopic techniques in the determination of precancerous lesions.

Keywords: Colorectal cancer, localization, demographic findings

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Introduction

Colorectal cancers are an increasingly important health problem in the world. In the United States of America, it is ranks third among the diagnosed tumors both in women and men [1]. According to statistics performed in our country, it ranks second in women, whereas fourth among males [2]. Colorectal cancer risk increases with age in both genders. Ninety percent of the cases include patients at and above 50 years of age [3, 4]. Majority of colorectal cases are localized in the rectum and sigmoid colon; however, it has been stated that proximal colon cancer cases are increased in recent years [5, 6]. This new information has been explained as decreases in rectum and sigmoid colon cancers by more frequent application of sigmoidoscopy and polypectomy [7].

In our study, age, gender, and localization distributions of colorectal cancer cases diagnosed in our region, were examined in the last 18 years. As stages at the diagnosis were defined, the changes in cancer localizations over years were investigated.

Materials and Methods

Patients who applied to the outpatient clinics of gastroenterology and general surgery clinics in our hospital with complaints of rectal bleeding, abdominal pain, changes in defecation habits, and weight loss and were diagnosed with colorectal cancer as the result of examinations by the pathology department were included in our study.

In the first phase of the study, archived records were screened, and the name and file numbers of patients who were diagnosed with colorectal cancer were defined. In the light of obtained data, pathology, computerized tomography, magnetic resonance imaging, ultrasonography reports, and epicrisis records of patients were obtained using the automation system. Also, colo-

noscopic findings of patients diagnosed with colorectal cancer were reviewed in the entry books of general surgery and internal medicine units. Of 915 patients, records of 163 patients could not be obtained. Therefore, 752 patients whose records were obtained constituted the study sample.

The following parameters were defined: application date, age at the application, gender and complaints, diagnostic method, tumor localization, tumor type, tumor stage, whether tumor metastasized, if metastasized the region of metastasis of study subjects. Considering colonic circulation, tumors located in the caecum, ascending colon, and transverse colon were defined as right side location; tumors located in descending colon, sigmoid colon, and rectum were defined as left side location.

Data analysis was performed using the package program Statistical Package for the Social Sciences 15.0 (SPSS). Mean (χ), frequency values (F), Chi square (χ^2), and t test analyses were used for statistical analyses. P values were obtained as the results of statistical analysis of data, and the level of significance was accepted as $p<0.05$.

All participants were informed about the study, and written consents were obtained. The ethics committee of our university approved the study protocol.

Results

In this present study, data from 752 patients who were diagnosed with colorectal cancer between 1992 and 2010 were evaluated. Of the patients, 427 (56.8%) were males and 325 (43.2%) were females, with a male/female ratio of 1.3/1. The mean age was 56.2±14.9 years, and the median age was 56 years. The mean age of female patients was 55.6±15 years and that of male patients was 56.8±14.9 years. There was no statistically significant difference in the mean age between male and female cases in the t test analysis (t=1.097; p=0.273). The youngest patient was 21 years old, whereas the oldest was 92 years old. Of the patients, 120 were younger than 40 years of age, whereas 632 (84.2%) were older than 40 years.

When complaints in the first application were investigated, rectal bleeding (38.4%) was most commonly encountered, followed by abdominal pain (24.7%), constipation (13.4%), nauseavomiting (12.5%),weight loss (5.5%), diarrhea (3.3%), and fatigue (2.1%) were observed less frequently. Diagnostic methods were evaluated according to the application complaints, and it was observed that diagnosis was made most commonly using rectosigmoidoscopy (38.7%). Colonoscopy (34.4%) and operation (10.9%) were the other diagnostic procedures after rectosigmoidoscopy, respectively.

Table 1. Localization areas according to years

	Between 1992 and 2000		Between 2001 and 2010	
Tumor localization area	n	%	n	%
Caecum	13	3	20	6.5
Ascending colon	27	6.2	39	12.6
Transverse colon	3	0.7	18	5.8
Descending colon	65	14.9	16	5.2
Sigmoid colon	79	18.1	55	17.8
Rectum	249	57.1	161	52.1
Total	436	100	309	100

†Spearman's correlation test

Cases were examined for tumor localization, and tumors were detected most commonly in the rectum (55%) and sigmoid colon (18%), whereas they were less frequently located in the transverse colon (2.8%) and caecum (4.4%). In general, 16.1% of tumors were located in the right side and 83.9% in the left side. When tumor localization areas were examined according to the years, rectum-localized cancer was most common. However, when tumor distributions between 2001 and 2010 were compared with those between 1992 and 2000, increased tumor ratios were determined in the total cancer cases in the ascending colon, transverse colon, and caecum, whereas they were decreased in the descending colon-, sigmoid colon-, and rectum-localized tumors (Table 1).

In the Chi square analysis, the difference in tumor localization areas for 1992–2000 and 2001–2010 was statistically significant (χ^2=72.634; p=0.000). This condition is shown graphically in Figure 1.

When the distributions of colorectal cancer localizations according to years were examined, rightsided tumor localization was increased for 2001–2010 compared with 1992–2000 (Figure 2). There were decreases in the left-sided tumor ratios. This condition was statistically significant (χ^2=38.159; p=0.000).

In the pathological evaluation, the tumor was divided into 2 groups: adenocarcinoma and others (lymphoma, sarcoma, and neuroendocrine tumor); 729 out of 752 patients (96.9%) had adenocarcinoma and 23 (3.1%) had non-adenocarcinoma colorectal cancer.

Tumor, node, metastasis (TNM) staging was performed in 320 patients in our study; however, as adequate information could not be provided in the medical files and pathology reports of the remaining patients, staging could not be performed in them. In TNM staging, the most frequently defined stage was the Stage IV with 130 patients, whereas the least defined was Stage I with 22 patients. When metastasis areas of Stage IV cases were examined, the most commonly metastasized organs were the liver (50.8%), peritoneum (16.2%), and lungs (5.4%).

Discussion

Colorectal cancer is the most commonly encountered cancer type in the gastrointestinal system, and approximately 1 million new cases are diagnosed annually. Because colorectal cancer-associated mortality has been high, it ranks second in line in males for cancer-related deaths, whereas it ranks third in females [4, 8, 9]. It increases significantly after 40-50 years of age, and two-thirds of patients are diagnosed after the age of 50 years. More than 90% of patients are diagnosed at and over 50 years of age [6, 10].

Regarding gender distribution of our cases, the male/female ratio was 1.3/1. In our study, the number of male cases was higher than the number of female cases in accordance with the literature [1, 7]. When the ages of patients were examined, 84.2% of them were at and over 40 years of age, and the most commonly encountered colorectal cancer cases were defined in the age range of 51–60 years.

Application complaints of our cases according to frequency were rectal bleeding, abdominal pain, and constipation. Although they were consistent with the general literature information, the most frequently encountered complaints were rectal bleeding in proximally localized tumors and abdominal pain in distally localized tumor patients [11, 12].

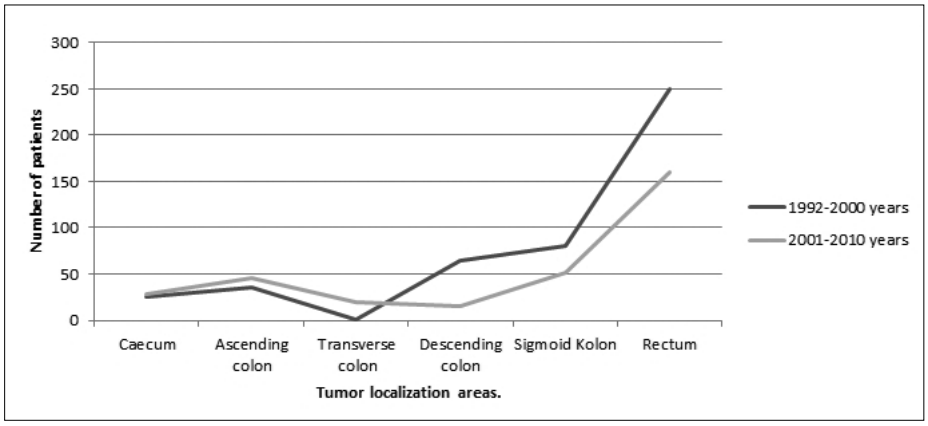

Figure 1. Distribution of tumor localization areas according to years

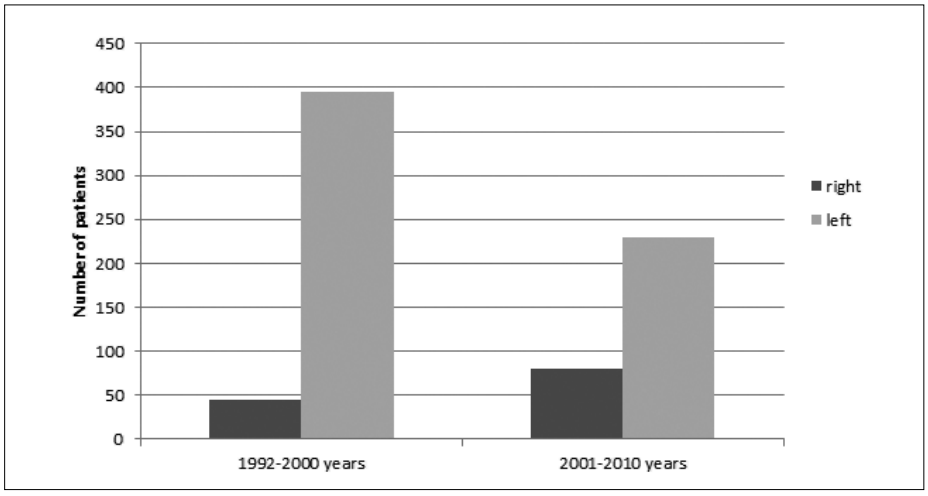

Figure 2. Tumor localizations according to years

Although colorectal cancer is localized in the distal or left colon at 70%, it has been reported in some studies that cancer localization has been changed to the proximal or the right side and that leftsided cancer cases have been observed less frequently [8, 13, 14]. Colorectal cancer distribution was defined most commonly in the rectum, sigmoid colon, and descending colon in our study. While 16.9% of cases were localized in the proximal colon, 83.1% was localized in the distal colon. The intensity was observed generally in distal colon tumors. When colorectal cancer distribution was examined with respect to gender, rectum cancer ranked first in both men and women. Abrams et al. [13], in their 4-year study performed on 198 colorectal cancer patients examining tumor localizations, reported that tumor was detected in 40% of cases in the ascending colon and transverse colon; the incidence of right-sided colorectal cancer was increased as well as there were significant decreases in cases with rectum and sigmoid involvement. Similarly, Cady et al. [14] retrospectively screened pathology records of 5807 colorectal cancer cases over 40 years. The study was divided into 10-year periods, and tumor distributions in the right and left colon were examined over the years. Thus, it was defined that the incidence of right-sided colorectal cancer was decreased gradually. In the first 10-year period, the rate of right-sided colorectal cancer cases was 6.7%, whereas it was increased to 21.4% in the last decade. Similarly, Ponz de Leon et al. [7] reviewed 2462 colorectal cancer cases in their article published in 2004. At the end of the study, cancer incidences were detected in all colonic segments in the 14-year period, and it was observed that tumors localized in the ascending colon were increased 4 folds when compared with the first years of the study. In rectal tumor cases, the baseline 40% value was decreased to 25% during the last years of the study. Owing to these data, the incidence of proximally localized tumors was progressively increased. In our study, when colorectal cancer distribution was reviewed according to years, proximal and distal colon tumor rates were 9.9% and 90.1%, respectively, between 1992 and 2000; they were 24.9% and 75.1% between 2001 and 2010, respectively. In the last decade, it was noteworthy that distal colon tumors were decreased, whereas proximal ones were increased.

While approximately 96.9% of cases were diagnosed with adenocarcinoma in our study, a low rate of 3.1% was diagnosed with non-adenocarcinoma-originated colorectal cancer, and cases were at the Stage IV according to the TNM classification. Then, it was followed by Stage III and II diseases. The lowest number of cases was observed in Stage I. The most commonly metastasized area was the liver, peritoneum, and lungs in cases diagnosed with Stage IV disease. Our results were observed to be consistent with literature [15, 16].

We witnessed that colorectal cancer was recently diagnosed in our region. This might be due to less frequent mentioning about colorectal cancer particularly in visual and auditory media, although there was a widespread awareness campaign about diseases, such as lung and breast cancers, as well as late diagnosis of the disease because of late application of patients to doctors.

One of the prominent data in the literature was that tumor localization shifted to the right side over years [6]. This condition was based on a more widespread use of rectosigmoidoscopy in the recent years and the early treatment of adenomatous polyps by endoscopic techniques, which might cause colorectal cancer development in the future thereby decreasing the incidence of distally localized colon cancer [13]. Based on all these reasons, the numbers of proximally localized colorectal cancer cases were increased, whereas distally located cancer cases were decreased.

The retrospective design is a limitation of this study. Also, inadequate care in keeping patient records is another limitation of our study.
In conclusion, colorectal cancer is a cancer type in which more studies should be performed because it is an important mortality and morbidity cause in the world and in our country. Meanwhile, the awareness of the population should be increased regarding risk factors, and screening programs for colorectal cancer should be initiated. Because of increased right colon tumors observed in the recent years, colonoscopy should be more widely used.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Atatürk University.

Informed Consent: Written informed consent was obtained from patients who participated in this study.

Peer-review: Externally peer-reviewed.

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- Ö.T., A.T.; Analysis and/or Interpretation Ö.T., A.T.; Literature Search - Ö.T., A.T.; Writing Manuscript - Ö.T., A.T.; Critical Review Ö.T., A.T.; Other - Ö.T., A.T.

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