



The effect of the endoscopist on the wait-time for colorectal cancer surgery

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ABSTRACT

Objective: The effect of the specialty of physicians who perform endoscopy on preoperative wait-time of colorectal cancer patients was evaluated.

Material and Methods: Data from 86 patients who have been operated with a diagnosis of colorectal cancer from January 2011-February 2013 regarding age, sex, tumor location, colonoscopy date, surgery date, the expertise and institution of the endoscopist were retrospectively examined. The time between colonoscopy and surgery was accepted as the pre-operative wait time (PWT).

Results: Out of 86 patients, 24 (27.9%) colonoscopies were performed by general surgeons (GS), and 62 (72.1%) by gastroenterologists (GE). When patients who underwent colonoscopy in other centers were extracted, the PWT for our center was 20.4 ± 10.8 days. When grouped according to specialties, the PWT of patients who had their colonoscopy performed by GS was significantly shorter than patients who underwent colonoscopy by GE at the same center ($p < 0.05$). Patient's age, sex and location of the tumor had no effect on PWT ($p > 0.05$).

Conclusion: The preparation time for surgery in colorectal cancer patients is influenced by the specialty of the physician performing the procedure. In order to standardize this period, a common flow diagram after endoscopy should be established for patients with suspected malignancy.

Key Words: Colorectal cancer, colonoscopy, pre-operative wait time

INTRODUCTION

One million people worldwide each year are diagnosed with colorectal cancer. Only 40% can be diagnosed at an early stage with this disease with curative surgical treatment, and once the symptoms have developed the disease is usually at an advanced stage. Screening programs are carried out to identify asymptomatic colorectal cancer (1). Colonoscopy is an indispensable element of these programs, and also enables treatment of precancerous lesions at the same session (2). The determinants of success in screening program are the presence of adequate equipment and experienced endoscopists.

All over the world, gastrointestinal endoscopy is performed by both surgeons and gastroenterologists. Limited number of gastroenterologists make the surgeons the only access to endoscopy for people living away from big cities (3). In broad series, it has been demonstrated that there is no difference in terms of procedural success between the two specialties in procedures directed to both the upper as well as lower gastrointestinal tract (4-6). However, the way they manage patients after diagnosis may vary due to the differences in these two specialty's residency training programs. In this study, the effect of the expertise of physicians who perform endoscopy on preoperative wait-time of patients diagnosed with colorectal cancer was evaluated.

MATERIAL AND METHODS

Files of 125 patients who have been operated from January 2011-February 2013 at the Fatih Sultan Mehmet Training and Research Hospital, General Surgery Clinic with a diagnosis of colorectal cancer were reviewed. Patient data regarding age, sex, tumor location, endoscopic preliminary diagnosis, colonoscopy date, surgery date, the expertise and institution of the endoscopist were recorded.

Patients who had emergency surgery ($n=23$), neoadjuvant therapy ($n=12$) and a non-malignant colonoscopic preliminary diagnosis ($n=4$) were excluded from the study.

The tumors were anatomically divided into two groups by their localization according to the middle portion of the transverse colon as left-sided and right-sided tumors. The endoscopist performing the procedure was identified as general surgeon (GS) and gastroenterologists (GE), and the institutions they work in were specified as our hospital (H) and centers other than ours (O). The time between colonoscopy and surgery was accepted as the pre-operative wait time (PWT).

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Statistical Analysis

Statistical Package for Social Sciences (SPSS, Chicago, IL, USA) for Windows 15.0 software was used for analysis. Descriptive statistics as well as Student's t-test for quantitative data were used. Qualitative data comparison were performed by chi-square and Fisher's exact chi-square test. The results were evaluated at 95% confidence interval and p level <0.05.

RESULTS

Eighty-six patients, 52 (60.5%) male and 34 (39.5%) female, were included in the study. The mean age of the patients was 68±12 (33-91) years. Colonoscopy of 24 (27.9%) patients were performed by GS, and of 62 (72.1%) patients by GE. Within this second group, gastroenterologists at our hospital (GEH) did 42 colonoscopies, whereas gastroenterologists from other hospitals (GEO) performed the remaining 20 endoscopies. While there was no colonoscopies performed by GS from other hospitals, all GEOs, except one, were working in private hospitals.

According to tumor location, 60 (69.8%) patients had left-sided, and 26 (30.2%) had right-sided tumors. There was no significant difference in PWT in terms of sex and tumor location (p>0.05). When patients were dichotomized into two groups as below and above the age of 65 years, the PWT was similar (p>0.05).

Comparison in terms of the expertise and the institution of the endoscopist who performed the colonoscopy showed that the shortest mean PWT was observed in colonoscopies performed by general surgeons (14.00±6.82 days). The PWT in colonoscopies by GEO and GEH were 14.10±8.32 days and 24.10±11.05 days, respectively. The PWT was significantly shorter in colonoscopies performed by GS and GEO than colonoscopies made by GEH (p<0.005). No significant difference was detected between GS and GEO in terms of PWT (p=0.579) (Table 1).

When patients who underwent colonoscopy in other centers were excluded from analysis, the colorectal cancer surgery preparation time for our hospital was calculated as 20.42±10.83 days.

DISCUSSION

The basics of endoscopy, which is an integral part of gastrointestinal tract examination, dates back to Hippocrates (6). In the 19th century, the French surgeon Antonie Jean Desormeaux was named the "father of endoscopy", after using the image transmission system that had been invented by Bozzini, in the human body (7).

Gastrointestinal endoscopy is practiced by surgeons as well as gastroenterologists throughout the world. It has been demonstrated in large multicenter series that there is no difference in the procedural success rates between these groups (8, 9). However, all these studies have focused on the technical success and complications of endoscopic procedures, and differences in the management of patients following detection of the underlying disorder has not been investigated. In our study, the effect of the expertise and institution of physicians who perform endoscopy on preoperative wait-time of patients diagnosed with a mass on colonoscopy. Evaluation of data from

Table 1. Patient groups and pre-operative wait time

Patient group		Pre-operative wait time (day)	p	
Gender	Male	20.46±10.70	0.103	
	Female	16.65±10.18		
Age	<65 age	18.76±10.31	0.845	
	>65 age	19.08±10.89		
Location	Right	17.23±12.59	0.324	
	Left	19.70±9.64		
Expertise and Institution of the endoscopist	General Surgeon	14.00±6.82	0.001	
	Gastroenterologist	GEH		24.10±11.05
		GEO		14.10±8.32

GEH: Gastroenterologist our hospital; GEO: Gastroenterologist other than our center

our clinic revealed that patients were operated in a shorter time if a general surgeon performed their colonoscopy. Patient age, sex, tumor location did not have such an effect.

In search of the current literature, we did not find any studies that evaluated the effect of the person who performed the diagnostic colonoscopy in patients with colorectal cancer on the preoperative preparation process. In our series, the preoperative preparation times were different between patients who underwent colonoscopy by physicians from different expertise within the same hospital. Considering the adenoma-carcinoma sequence in colorectal cancer, this difference does not have any effect on either clinical staging or prognosis of the disease (10). Studies performed on patients with cancer concluded that the delays in diagnosis and treatment cause serious anxiety problems (11, 12). Another issue emphasized in these same studies is that the adverse clinical effects of this increased anxiety are not known.

The preoperative waiting period after initial diagnosis in colorectal cancer patients mainly consists of the time required for; pathological diagnosis, staging tests, anesthesia evaluation and operating room availability. If general surgeons detect a mass on colonoscopy, pro-actively, they contact the pathology clinic and request assessment of endoscopic biopsies with a higher priority, and the radiology unit to expedite the staging tests. It has been reported that although the procedure is the same, patient management can vary between different expertise areas. A multicenter study evaluated the procedural success, the length of hospital stay and the elapsed time between the decision for percutaneous endoscopic gastrostomy (PEG) and the procedure itself in terms of the expertise of the physician who performed PEG. In this study, procedural success, mortality and morbidity of these patients did not show any significant difference. However, the length of hospital stay and PEG wait times were significantly shorter in the group where the surgical team performed PEG, and the difference was explained by the surgeon's ability to perform PEG simultaneously with other procedures (5).

The preoperative wait times in patients who underwent colonoscopy at other hospitals were similar to the results from

our hospital general surgery endoscopy team. Private hospital constituted nearly all of the other centers included in this study. We believe that the reasons for the short surgery waiting time were receiving pathology results more quickly in private laboratories than public institutions and direct referral to general surgery clinics with a tissue diagnosis.

In our center, more than half of the endoscopies on patients diagnosed with colorectal cancer were performed by GEs. This inter-expertise distribution is directly proportional to the number of endoscopic procedures, and may vary from one center to another. Until recently only one endoscopy unit tower was being used jointly by both specialties in our hospital. We believe that the current difference in cancer detection rates is related to the performance of colonoscopy by the gastroenterologist three days a week and the surgical team two days a week. Due to the limited number of patients and the short-term of our series, this difference did not reach statistical significance; however, we believe a multicenter prospective study will reveal rates that are more accurate.

The advantages of surgical endoscopy units can be summarized as ensuring the continuity of treatment in patients who require surgery, more efficient time management and use of endoscopic findings during surgery. Laparoscopic colorectal surgery mandates accurate localization of early lesions, therefore endoscopic lesion marking methods are being increasingly used (13, 14). All these advantages and new applications ultimately reflect positively on the treatment of patients, by both increasing the success of surgery and patient comfort. At this point, surgical endoscopy units have become the heart of gastrointestinal tract surgery clinics.

As compared to all other methods used in screening for colorectal cancer, colonoscopy is more advantageous in direct viewing of the lesion, the possibility of a biopsy, and the possibility of even being used in therapy. The American College of Gastroenterology states colonoscopy as the screening test of choice in places where it is accessible (15). The incidence of colorectal cancer in Turkey ranks third in women and fourth in men (16). According to data from the Ministry of Health, the target population of screening programs, defined as age 50-69 years, is over 10 million people. In the present circumstances, more than half of colorectal cancer patients in our country are at an advanced stage, and the only way to reduce this rate is the implementation of screening programs, and more importantly to enable public access to these programs. Considering the number and distribution of endoscopy units throughout the country, surgeons are the sole providers of endoscopy services in many provinces and districts. It appears impossible for the gastroenterology specialists in our country to meet the requirements of such a large-scale screening with their current number and distributions.

The limitations of the study are its retrospective nature, lack of determining factors that affect preoperative preparation time separately and the low volume of included patients from a single-center study.

CONCLUSION

The expertise and institution of the endoscopist have led to differences in the management of patients with colorectal

cancer, in terms of duration. This difference can cause serious anxiety in patients. Patient management differences between surgical endoscopists and gastroenterologists, who must work together in colorectal cancer prevention, early diagnosis and treatment, can be overcome by simple methods. In order to standardize the preparation time for cancer surgery joint management schemes should be created by teams involved in endoscopy, surgery, radiology, pathology and anesthesia.

Ethics Committee Approval: This study was designed retrospectively so the ethics committee approval was not needed.

Informed Consent: Informed patient consent form including colonoscopy and surgical treatment protocol were obtained from all patients included in this study.

Peer-review: Externally peer-reviewed.

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