DOI: 10.4274/tjcd.48403
Turk J Colorectal Dis 2018;28:27-30

RESEARCH ARTICLE

Colonoscopy Findings in Patients Who Have Positive Fecal Occult Blood Test for Colorectal Cancer Screening

Kolorektal Kanser Tarama Amaçlı Yapılan Gaytada Gizli Kan Testi Pozitif Saptanan Hastalarda Kolonoskopi Bulguları

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ABSTRACT

Aim: To determine the rate of colonoscopies performed in patients referred for colonoscopy due to positive fecal occult blood test in colorectal cancer screening, and the rates of cancer, polyps, and other colorectal diseases detected in those who underwent colonoscopy.
Method: Colonoscopy results of the patients were recorded prospectively.
Results: Of the 300 consecutive patients scheduled for colonoscopy, only 127 (42.3%) underwent the procedure. Normal colonoscopy findings were seen in 47 (37%) of the patients. Forty patients (31.5%) had benign polyps, 24 (18.9%) had diverticulosis, and 40 (31.5%) had hemorrhoids or anal fissures. One patient (0.8%) had mild dysplasia and one patient (0.8%) had malignant polyp in histopathologic examination of polypectomy specimen.
Conclusion: The colonoscopy rate and the rate of detection of malignancy were very low in patients who had positive fecal occult blood test in the present study. Informing patients about the need for colonoscopy and encouraging them to have colonoscopy will be helpful for the success of colorectal screening programs.
Keywords: Colorectal cancer, screening, colonoscopy

ÖZ

Amaç: Kolorektal kanser tarama amaçlı yapılan gaytada gizli kan testinde pozitiflik saptanarak kolonoskopi yapılan hastalarda kolonoskopi yapılma oranı, kanser, polip ve diğer kolorektal hastalık oranlarını ortaya çıkarmak amaçlanmıştır.
Yöntem: Çalışmaya alınan hastaların kolonoskopi sonuçları prospektif olarak kayıt altına alındı.
Bulgular: Kolonoskopi planlanan ardışık 300 hastanın sadece 127'si (%42,3) kolonoskopiyi kabul etti ve yaptırdı. Hastaların 47'sinde (%37) kolonoskopi normal idi. Kırk (%31,5) hastada benign polip, 24 (%18,9) hastada divertiküler hastalık, 40 (%31,5) hastada hemoroid veya anal fissür izlendi. Polip saptanan ve polipektomi yapılan hastalarda histopatolojik inceleme sonucunda bir (%0,8) hastada hafif şiddette displazi ve bir (%0,8) hastada malign polip saptandı.
Sonuç: Gaytada gizli kan pozitifliği saptanan hastalarda kolonoskopi yaptırma oranı ve malignite saptanma oranı çok düşük bulunmuştur. Hastaların kolonoskopinin gerekliliği konusunda bildirilmesi ve kolonoskopi yaptırılmaya teşvik edilmesi kolorektal tarama programlarının başarıya ulaşmasında faydalı olacaktır.
Anahtar Kelimeler: Kolorektal kanser, tarama, kolonoskopi

Introduction

Colorectal cancer (CRC) is the third most common cancer in the world and in Turkey.[1,2] According to national data from 2014, CRC accounts for 8% of all cancers in females and 9% of all cancers in males.[1] Early diagnosis is associated with high survival rates in CRC. As in many countries, CRC screening programs have been implemented in our country. It was reported that 1.708.025 people were screened for CRC in Turkey in 2016.[3]

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Received/Geliş Tarihi: 01.01.2018 **Accepted/Kabul Tarihi:** 16.02.2018

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Turkish Journal of Colorectal Disease published by Galenos Publishing House.

The CRC screening program in our country includes fecal occult blood (FOB) test every 2 years and colonoscopy every 10 years. Colonoscopy should be performed for individuals with positive FOB test results.[4] In the present study, we analyzed data pertaining to patients who were admitted to our clinic for colonoscopy following positive FOB test result during CRC screening, in order to determine colonoscopy rates and the incidences of cancer, polyps, and other colorectal diseases that may cause FOB test positivity in these patients.

Materials and Methods

The study included 300 consecutive patients who were referred to our clinic for colonoscopy following a positive FOB test performed in Cancer Early Diagnosis, Screening and Education Centers (CEDSECs) operated within the Family Health Centers and Community Health Centers of Turkey. Data were retrospectively collected from patients' medical records. Patients with known colorectal or anal disease that may cause FOB test positivity and those with active gastrointestinal signs and symptoms were not included in the study. All patients were informed about the necessity of colonoscopy and the nature of the procedure, and written informed consent was obtained as part of the routine practice in our clinic. Because the FOB test utilizes an immunochemical method that detects human hemoglobin and is not affected by the consumption of animal-based foods, the test was not repeated and colonoscopy was scheduled for patients with positive results. All colonoscopies were performed by general surgeons. Appropriate bowel cleansing was done prior to colonoscopy and patients were sedated during the procedure. Colonoscopic examination included the entire colorectal area from the anus to the base of the cecum. Colorectal pathologies such as polyps and diverticula, and anal pathologies such as hemorrhoids and anal fissures that were detected during colonoscopy were recorded prospectively. Detected polyps were further examined histopathologically for features such as malignancy and dysplasia. All obtained data were recorded and analyzed for descriptive statistics.

Results

Of the 300 consecutive FOB-positive patients referred to our clinic and scheduled for colonoscopy, only 127 (42.3%) underwent colonoscopy. Despite being referred for a colonoscopy, the other patients did not undergo colonoscopy at our clinic. Of the patients who underwent colonoscopy, 84 (66.1%) were female and 43 (33.9%) were male. The patients were aged between 43-71 years (59.3 years). Colonoscopy results were normal in 47 (37%) of the patients. Forty patients (31.5%) had benign polyps, 24 (18.9%) had diverticular disease, and 40 (31.5%) had hemorrhoids or anal fissures (Table 1). Polypectomy and histopathological examination revealed mild dysplasia in 1 (0.8%) patient and a malignant polyp in 1 (0.8%) patient. In our investigation of our clinic's long-term follow-up records of the patients who did not undergo colonoscopy, we noted that in one patient, obstruction due to a malignant mass was detected about 2 months after their initial presentation to our clinic due to FOB test positivity, and they underwent surgery. However, this patient was not included when calculating the rate of malignancy after colonoscopy because they were not among the patients who underwent colonoscopy for screening purposes.

Discussion

CRC is one of the most common cancers. Survival is better in early CRC compared to advanced cancers; however, studies conducted in Turkey indicate that a substantial proportion of cases are detected at an advanced stage.[5,6] With CRC screening, cases can be detected at an earlier stage, can be treated with more minimally invasive procedures such as local interventions, and may have less need for adjuvant and neoadjuvant therapies. This can reduce both health expenditures and cancer-related morbidity and mortality. It has been shown that a yearly FOB test reduces CRC-related deaths by 16%, and that flexible sigmoidoscopy conducted once in a lifetime reduces these deaths by 27%.[7,8] These rates are an important indicator of the effectiveness of cancer screening. While FOB tests, rectosigmoidoscopy, and colonoscopy are widely used in many countries for CRC screening, intensive studies are being carried out on methods that anatomically examine the colon, such as capsule endoscopy and virtual colonoscopy, or some experimental tests based on the investigation of various DNA and microRNA molecules in the plasma or feces (Table 2).[9,10,11,12] There is no standard recommendation as to which one or ones of these tests should be used. Countries can implement different screening strategies depending on factors such as the incidence of cancer, the work force available to conduct screening, and the state of the national economy. The approach recommended by the Turkish Ministry of Health for CRC screening includes FOB testing every other year

Table 1. Colonoscopy findings

Colonoscopy findings	n	%
Normal findings	47	37
Polyp	42	33.1
Hemorrhoids, anal fissure	40	31.5
Diverticular disease	24	18.9

and colonoscopy every 10 years for all patients between 50-70 years of age and for patients over 40 years of age who are at increased risk for CRC.[3] The average age of onset of CRC is 68, with the vast majority of these cancers occur after the age of 50 years.[13] Therefore, CRC screening begins after the age of 50. Screening procedures have a limited contribution to reducing morbidity and mortality in advanced age. There are different approaches regarding at what age to discontinue screening. Screening is discontinued beyond age 70 in our country, whereas the age limit is 75 in the USA and many European countries.[3,14,15] In our study, we determined that of the 300 patients referred to our clinic due to positive FOB test, only 42.3% underwent colonoscopy. This indicates a much lower rate of undergoing colonoscopy after positive FOB test in Turkey compared to many European countries. This rate was reported as 88% in France, 83% in Great Britain, 83% in Ireland, 74.3% in the Netherlands, 66% in Croatia, and 66.1% in Lithuania.[16] Colonoscopy rates need to be increased to ensure the screening program is optimally effective and more cancers are detected at early stages. Therefore, patients who are referred for a colonoscopy should be informed in detail about the risk of cancer and the absolute necessity and importance of undergoing colonoscopy. Colonoscopy rates can also be increased if the centers performing FOB tests follow patients and evaluate their feedback after colonoscopy, and identify patients who have not undergone colonoscopy and refer them again colonoscopy. The incidence of malignancy was very low in our study. In total, 0.8% of the patients had malignancy and 0.8% had dysplasia. In addition, 31.5% of patients had benign polyps. Although our adenoma detection rate was similar to that of other European countries, our malignancy detection rate was very low. In a review evaluating CRC screening programs, it was reported that in South Korea the colonoscopy rate was 31.4% and the rate of cancer detection was 1.2% in patients with positive FOB test. It was speculated that the low colonoscopy rate may be associated with the low cancer detection rate.[16] This result shows the importance of increasing the colonoscopy rate.

Table 2. Some experimental colorectal cancer screening methods[9,10,11,12]

Method	Sensitivity (%)	Specificity (%)
Colonoscopy	95	90
Fecal occult blood	70	95
Virtual colonoscopy	89	75
Capsule endoscopy	93	69
SEPT9-based tests	67-96	81-99
Plasma microRNA detection	84-89	70-71

When we examined other non-malignant pathologies that may result in positive FOB test, we detected pathologies such as colonic diverticula, hemorrhoids, and anal fissures in about 50% of the patients. The high frequency of detection of these other conditions may have contributed to the apparently low cancer detection rate seen in this study. A comprehensive evaluation of CRC screening should include assessment of how many FOB-positive patients present to advanced centers for colonoscopy, how many of those patients actually undergo colonoscopy, and at what rate cancer is detected in these individuals. Although the current study presents colonoscopy and cancer detection rates for our clinic, it is not possible to determine with the available data how many of those with positive FOB test presented to specialty centers for colonoscopy. This information can only be obtained from the CEDSEC patient follow-up data. There are certain limitations to this study. The colonoscopy rate of the patients was found to be low. Although the patients were referred to our clinic for colonoscopy, some patients may have undergone colonoscopic examination at other centers. In this case, the colonoscopy rate reported here may be artificially low. Another limitation of the study is the small number of patients. Therefore, continuing to collect data and conducting a multicenter analysis combining results from different centers will yield more accurate cancer detection rates. In summary, our study revealed low colonoscopy and malignancy detection rates in patients with positive FOB test. Informing patients about the necessity of colonoscopy and encouraging them to undergo colonoscopy will be beneficial for the success of CRC screening programs.

Ethics

Ethics Committee Approval: Retrospective study.

Informed Consent: Retrospective study.

Peer-review: Internally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: B.M., C.Ö.E., A.D., Y.Ç., Concept: B.M., C.Ö.E., Design: B.M., A.D., Y.Ç., Data Collection or Processing: B.M., Analysis or Interpretation: B.M., Literature Search: N.E., C.Ö.E., A.D., Writing: B.M., Y.Ç.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

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