





Research Article | Araştırma Makalesi

EVALUATION OF COLONOSCOPY AND PATHOLOGY RESULTS OF PATIENTS WHO UNDERWENT COLONOSCOPY DUE TO FECAL OCCULT BLOOD TEST POSITIVITY: A SINGLE CENTER EXPERIENCE

GAİTADA GİZLİ KAN TEST POZİTİFLİĞİ NEDENİ İLE KOLONOSKOPI YAPILAN HASTALARIN KOLONOSKOPI VE PATOLOJİ SONUÇLARININ DEĞERLENDİRİLMESİ: TEK MERKEZ DENEYİM

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ABSTRACT

Objective: The most important part of improving colorectal cancer prognosis is to detect and treat in the early stage. The most effective way to do this is screening programs. Fecal occult blood test is one of the most frequently used methods in the screening program. In this study, we aimed to evaluate the colonoscopy and histopathological findings of patients who underwent colonoscopy due to positive fecal occult blood test.

Methods: Patients who had a positive fecal occult blood test between January 2016 and December 2018 and underwent colonoscopy to investigate the etiology were included in the study. Demographic characteristics, colonoscopy findings and histopathological results of the patients were reviewed retrospectively from hospital records.

Results: A total of 325 patients were included in the study. Of the patients, 146 (44.9%) were male, 179 (55.1%) were female, and their mean age was 58.4±9.3 years. Colonoscopic findings of 140 patients (43.1%) were normal. Polyps in 89 (27.4%) patients, perianal disease in 46 (15.1%), diverticulum in 20 (6.2%), inflammatory bowel disease in 8 (2.4%), solitary rectal ulcers in 4 (1.2%) patients and colorectal cancer in 18 (5.5%) of them was detected.

Conclusion: Fecal occult blood test is a cost-effective and easy-to-apply method used in colorectal cancer screening programs together with colonoscopy, helping to detect both cancer and precancerous lesions and increase the survival rate.

Keywords: Fecal occult blood test, colonoscopy, colorectal cancer

Öz

Amaç: Kolorektal kanser prognozunu iyileştirmenin en önemli kısmı; erken evrede tespit edilerek tedavi edilmesidir. Bunun en etkili yolu tarama programlarından geçmektedir. Gaitada gizli kan testi, tarama programında en sık kullanılan yöntemlerin başında gelmektedir. Bu çalışmada gaitada gizli kan testi pozitif olması nedeniyle kolonoskopi yapılan hastaların kolonoskopi ve histopatolojik bulgularını değerlendirmeyi amaçladık.

Yöntem: Ocak 2016 ile Aralık 2018 tarihleri arasında gaitada gizli kan testi pozitif olan ve etiyojoloji araştırılması için kolonoskopi yapılan hastalar çalışmaya alındı. Hastaların demografik özellikleri, kolonoskopi bulguları ve histopatolojik sonuçlar hastane kayıtlarından retrospektif olarak incelendi.

Bulgular: Çalışmaya toplam 325 hasta dahil edildi. Hastaların 146'sı (%44,9) erkek, 179'u (%55,1) kadın ve ortalama yaşları 58,4±9,3 idi. 140 hastanın (%43,1) kolonoskopik bulguları normal idi. Hastaların 89'unda (%27,4) polip, 46'sında (%15,1) perianal hastalık, 20'sinde (%6,2) divertikül, 8'inde (%2,4) inflamatuvar bağırsak hastalığı, 4'ünde (%1,2) soliter rektal ülser ve 18'inde ise (%5,5) kolorektal kanser tespit edildi.

Sonuç: Gaitada gizli kan testi, kolonoskopi ile birlikte kolorektal kanser tarama programlarında kullanılan, hem kanserin hem de prekanseröz lezyonların tespit edilerek sağ kalım oranını artırmaya yardımcı olan maliyeti ucuz ve kolay uygulanabilen bir yöntemdir.

Anahtar Kelimeler: Gaitada gizli kan testi, kolonoskopi, kolorektal kanser

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Introduction

Colorectal cancer (CRC), which is common in the world, is the leading cause of cancer-related deaths.¹ Detection of CRC at an early stage allows for curative endoscopic or surgical treatment. Therefore, early diagnosis is one of the most important factors affecting prognosis and mortality.

Thanks to screening programs, it may be possible to detect precancerous lesions, treat or even prevent CRC.² Scan programs; It should be non-invasive, highly sensitive and specific, reliable and cost-effective. For this reason, in CRC screening programs; Various methods with different characteristics such as fecal occult blood (FOB) test, fecal immunochemical test, sigmoidoscopy and colonoscopy are applied in many countries.³ In our country, the screening program has started to be applied to healthy individuals between the ages of 50-70 as of 2014, by performing a FOB test every 2 years and a colonoscopy every 10 years. Besides that, the age limit at which screening will be terminated in individuals with a negative FOB test is accepted as 70 years.⁴

FOB test is included in screening protocols because it is a practical and cost-effective procedure for CRC screening. Studies reports the sensitivity of the FOB test between 12.9% - 79.4% and the specificity between 86.7% - 97.7%.⁵ However, pathology cannot be detected in approximately 50% of colonoscopies performed on patients with positive FOB test.⁶

Disadvantages of FOB test were disability of determination of the bleeding from upper or lower gastrointestinal parts and influence from many factors in the diet. Despite this, it is used in the first place in CRC screening programs in our country.

The aim of this study was to evaluate the colonoscopy and histopathological findings of the patients who were referred to the endoscopy unit due to FOB test positivity in a certain time period.

Methods

Between January 2016 and December 2018, 325 patients who underwent colonoscopy to investigate the etiology in the endoscopy unit of our hospital due to positive FOB test were retrospectively screened. Upper gastrointestinal endoscopy was not performed in any of the patients. This study was approved by SBU Kocaeli Derince Training and Research Hospital Health Sciences Scientific Research and Publication Ethics Committee (Decision No: 2021/40, Date: 25.02.2021).

Patients with inadequate colon cleansing, active gastrointestinal bleeding, history of colon surgery or inflammatory bowel disease were excluded from the study. Within the scope of the study, demographic data such as age and gender of the patients, findings detected in colonoscopy, histopathological results of patients who underwent biopsy and surgical procedures applied to patients requiring surgery were evaluated. Colonoscopy was performed in all patients in such a way that the

entire colorectal region from the anus to the floor of the cecum was examined. Biopsy was taken from the masses detected during the procedure or if polyps were detected, polypectomy was performed and sent for pathological examination.

All statistical analyses were performed using IBM SPSS for Windows version 20.0 (SPSS, Chicago, IL, USA). Continuous variables were expressed as mean \pm standard deviation. Categorical variables were summarized as counts (percentages).

Results

A total of 325 patients who underwent colonoscopy due to positive FOB test were included in the study. Of the patients, 146 (44.9%) were male, 179 (55.1%) were female, and their mean age was 58.4 \pm 9.3 years. Endoscopic diagnoses including; normal colonoscopic findings in 140 patients (43.1%), polyps in 89 patients (27.4%), perianal disease in 46 patients (15.1%), diverticula in 20 patients (6.2%), inflammatory bowel disease in 8 patients (2.4%), solitary rectal ulcer in 4 patients (1.2%) and CRC in 18 patients (5.5%) (Table 1). Thirty-two (35.9%) of polyps in the sigmoid colon, 17 (19.1%) in the descending colon, 8 (8.9%) in the ascending colon, 11 (12.3%) in the transverse colon and 21 (23.5%) in the rectum were detected.

Table 1. Demographic data and colonoscopic findings of patient group (n=325)

	n	%
Gender		
Male	146	44.9
Female	179	55.1
Age, mean\pmSD	58.4 \pm 9.3	
Colonoscopy findings		
Polyp	89	27.4
Presence of malignancy	18	5.5
Diverticulum	20	6.2
Inflammatory bowel disease	8	2.4
Perianal disease	46	15.1
Solitary rectal ulcer	4	1.2
Normal findings	140	43.1

n: Number of individuals, SD: Standard deviation

When the histopathological types of polyps were examined, 52 (58.4%) of them were tubular adenomas, 16 (17.9%) of them were tubulovillous adenomas, 18 (20.2%) of them were hyperplastic polyps, and 3 (3.3%) of them were serrated adenomas. 14 (15.7%) of the polyps, had mild grade dysplasia and 6 (6.7%) of them had high-grade dysplasia (Table 2). 15 of the 18 malignancy patients underwent surgical treatment and 3 patients were out of follow-up. Nine (50%) cancers were in the rectum, 4 (22.2%) in the sigmoid colon, 2 (11.1%) in the transverse colon, 2 (11.1%) in the ascending, and 1

(5.5%) in the descending colon. Low anterior resection was performed in 7 patients with malignancy in the rectum, anterior resection was performed in 4 patients in the sigmoid colon, right hemicolectomy was performed in 3 patients in the ascending colon, and left hemicolectomy was performed in 1 patient in the descending colon (Table 3).

Table 2. Characteristics of detected colon polyps (n=89)

	n	%
Localization		
Sigmoid colon	32	35.9
Descending colon	17	19.1
Ascending colon	8	8.9
Transverse colon	11	12.3
Rectum	21	23.5
Pathology of polyp		
Tubular	52	58.4
Tubulovillous	16	17.9
Serrated	3	3.3
Hyperplastic	18	20.2
Presence of dysplasia		
None	69	77.5
Low grade dysplasia	14	15.7
High grade dysplasia	6	6.7

n: Number of individuals

Table 3. Characteristics of patients with colon cancer (n=18)

	n	%
Gender		
Male	12	66.6
Female	6	33.3
Localization		
Rectum	9	50
Sigmoid colon	4	22.2
Descending colon	1	5.5
Ascending colon	2	11.1
Transverse colon	2	11.1
Operation		
Low anterior resection	7	38.8
Anterior resection	4	22.2
Right hemicolectomy	3	16.6
Left hemicolectomy	1	5.5
None	3	16.6

n: Number of individuals

Discussion

The FOB test is an easy-to-administer and low-cost test that shows bleeding from any part of the gastrointestinal tract. It is widely used when investigating the etiology of anemia or in colon cancer screening programs. By screening the asymptomatic population; prevention of

CRC, reduction of mortality, detection of precancerous lesions and successful intervention in early stage cancers can be provided.⁷ Randomized studies recommended CRC screening and forming the basis of international guidelines, and observational studies conducted in different parts of the world have shown that FOB test reduces CRC mortality by 9-32%.⁸⁻¹¹ Although no pathology can be detected on colonoscopy in approximately 50% of patients with positive FOB test, current guidelines recommends that individuals between the ages of 50-75 should have a FOB test every two years and a colonoscopy every 10 years.¹² However, there is no clear study on the best age range in FOB test screening. Some studies suggest that FOB test screening has similar reductions in CRC-related mortality in different age ranges between 45 and 80 years of age.¹³

Brenner et al.¹⁴ reported that when the colonoscopic findings of individuals with or without positive FOB test, CRC was found more frequently in individuals with positive FOB test. Paimela et al.¹⁵ reported that the rate of invasive CRC among patients with positive FOB test was 8.2%, and the rate of adenoma and cancer showing only mucosal invasion was 39.7%. Andreas et al.¹⁶ performed colonoscopy on 26,123 patients with positive FOB in their study and detected colorectal cancer in approximately 5% of them, adenoma in 15%, other colorectal pathologies in 15%, and negative colonoscopic findings in 65%. Utku et al.¹⁷ found 7.5% colorectal cancer and 26.2% polyps in the colonoscopy of patients with positive FOB test. In our study, CRC was diagnosed in 18 (5.53%) of the patients who underwent colonoscopy due to positive FOB test. Our polyp detection rate was 27.4%. When the localization of tumors and polyps was examined, more than 50% of the lesions were detected in the rectum and sigmoid colon. This finding of our study is compatible with the literature.^{8,18} Non-malignant pathology findings were detected in 24.9% of the patients. Normal colonoscopy findings were present in 43.1% of the patients. Consistent with the literature, in our study, FOB test was a beneficial test for detecting the diagnosis of pathologies such as inflammatory bowel disease, diverticulum, rectal ulcer and perianal disease as soon as detecting CRC and premalignant lesions.

The first limitation of this study is its retrospective design and single-center design. Second, upper gastrointestinal endoscopy is not used for screening purposes. Finally, prospective, multicenter large cohort studies with new developed CRC screening programs are needed.

In conclusion, FOB test is used in our country as in many countries of the world, especially in screening programs of asymptomatic individuals because of its low cost and easy accessibility. Although colon pathology is detected in approximately half of the patients with positive FOB test, even if the FOB test is negative, it should not interfere with colonoscopic screening.

Compliance with Ethical Standards

This study was approved by SBU Kocaeli Derince Training and Research Hospital Health Sciences Scientific

Research and Publication Ethics Committee (Decision No: 2021/40, Date: 25.02.2021).

Conflict of Interest

The authors declare no conflicts of interest.

Author Contribution

OS: Conceived and designed the experiment, materials, performed the experiments, wrote the paper; HTT, AG: Contributed reagents, analysis tools or data; OS, GD: Review and editing, supervision, project administration

Financial Disclosure

None.

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