

Evaluation Of The Frequency Of Malignancies In Patients Who Performed Gastroscopy And Colonoscopy Because Of Iron Deficiency Anemia

Demir Eksikliği Anemisi Nedeniyle Gastroskopi Ve Kolonoskopi Yapılan Hastalarda Malignite Sıklığının Değerlendirilmesi

Mehmet Önder Ekmen¹, Metin Uzman²

1 Ankara Atatürk Sanatorium Training and Research Hospital Gastroenterology Department,
<https://orcid.org/0000-0002-2034-6469>

2 Ankara Atatürk Sanatorium Training and Research Hospital Gastroenterology Department,
<https://orcid.org/0000-0002-5412-8523>

Abstract

Aim: In this study, we aim to present the results of patients in our clinic who underwent colonoscopy and gastroscopy because of iron deficiency.

Method: Patients who underwent gastroscopy and colonoscopy for the etiology screening of iron deficiency anemia in Ankara Ataturk Sanatorium Training and Research Hospital Gastroenterology Department between July 2021 and December 2022 were included in the study. Age, gender, anamnesis and endoscopic results of the patients were acquired retrospectively via investigation of patients files. SPSS 21.0 for statistical analysis Windows program used. Descriptive statistical methods (mean, standard) were used.

Results: The mean age of men was 63.6±7.4 years, and the mean age of women was 58.4±8.6 years. During this period, colonoscopy was requested in 576 (20%) of 2880 patients due to the etiology of iron deficiency anemia. Of the patients, 280 (48.6%) were male and 296 (51.4%) were female. Gastroscopy was performed in 496 of the cases. Although colonoscopy was normal, there were 40 (6.9%) patients who did not undergo gastroscopy. 205 (35.6%) patients had no endoscopic finding to explain anemia and 296 (51.4%) had no colonoscopic polyps or carcinomas and no colonoscopic findings to explain anemia. Colonoscopy was normal in 98 (17%) of the patients and there was no significant feature in esophagogastroskopi.

Conclusion: In the patients included in the study, polyps were detected in 52.4% of the patients and adenocarcinoma in 6.5% of the patients during colonoscopy. When investigating the cause of IDA, it should be kept in mind that there might be several underlying causes, especially if a pathology originating from the gastrointestinal tract is considered.

Keywords: Iron Deficiency Anemia, Gastroscopy, Colonoscopy.

Özet

Amaç: Bu çalışmada kliniğimizde demir eksikliği nedeniyle kolonoskopi ve gastroskopi yapılan hastaların sonuçlarını sunmayı amaçladık.

Yöntem: Temmuz 2021-Aralık 2022 tarihleri arasında Ankara Atatürk Sanatoryum Eğitim ve Araştırma Hastanesi Gastroenteroloji bölümünde demir eksikliği anemisi etiyoloji taraması için gastroskopi ve kolonoskopi yapılan hastalar çalışmaya dahil edildi. Hastaların yaş, cinsiyet, anamnez ve endoskopik sonuçları retrospektif olarak hasta dosyaları incelenerek elde edildi. İstatistiksel analiz için SPSS 21.0 Windows programı kullanılmıştır. Tanımlayıcı istatistiksel yöntemler (ortalama, standart) kullanılmıştır.

Bulgular: Erkeklerin yaş ortalaması 63,6±7,4, kadınların yaş ortalaması 58,4±8,6 idi. Bu dönemde 2880 hastanın 576'sına (%20) demir eksikliği anemisi etiyolojisi nedeniyle kolonoskopi istendi. Hastaların 280'i (%48,6) erkek, 296'sı (%51,4) kadındı. Olguların 496'sına gastroskopi yapıldı. Kolonoskopi normal olmasına rağmen gastroskopi yapılmayan 40 (%6,9) hasta vardı. 205 (%35,6) hastada anemiyi açıklayacak endoskopik bulgu, 296 (%51,4) hastada kolonoskopik polip veya karsinom ve anemiyi açıklayacak kolonoskopik bulgu yoktu. Hastaların 98'inde (%17) kolonoskopi normaldi ve özofagogastroskopiye anlamlı bir özellik yoktu.

Corresponding Author: Ekmen MÖ, e-mail: onderekmen21@hotmail.com

Received: 26.06.2023, **Accepted:** 14.07.2023, **Published Online:** 30.09.2023

Cite: Ekmen MÖ, et al. Evaluation Of The Frequency Of Malignancies In Patients Who Performed Gastroscopy And Colonoscopy Because Of Iron Deficiency Anemia. Acta Medica Ruha. 2023;1(3):210-215. <https://doi.org/10.5281/zenodo.8164988>



Sonuç: Çalışmaya dahil edilen hastalarda kolonoskopi sırasında hastaların %52,4'ünde polip, %6,5'inde adenokarsinom saptanmıştır. DEA nedeni araştırılırken altta yatan birkaç neden olabileceği akılda tutulmalıdır.

Anahtar Kelimeler: Demir Eksikliği Anemisi, Gastroskopi, Kolonoskopi.

INTRODUCTION

World Health Organization (WHO) defines anemia as hemoglobin poverty while the hemoglobin level is below 12 g/dl in adult women and below 14 g/dl in adult men. Iron deficiency anemia is more rare in men than women and is the most frequently seen kind of anemia(1). Iron deficiency anemia is not an illness. Experts should examine and elicit the etiology for every patient (2). In different ages, the rate of etiological reasons of iron deficiency anemia differs. In premenopausal women, the most common reason of iron deficiency anemia is menstrual bleeding. Nevertheless in adult men and postmenopausal women, the most common reason of iron deficiency anemia is chronic blood losses from the gastrointestinal tract (3). The cause of IDA was found in 48-71% of patients who underwent upper and lower endoscopic procedures; while in unexplained cases, it was reported that overlooked lesions were determined in 35% of the cases that underwent repeat endoscopic procedure. In fact, the success in the diagnosis of IDA has increased to 61-74% with the examination of the small intestine (capsule endoscopy or double balloon enteroscopy) in anemia that continues despite endoscopic examinations recently (4). In this study, we aim to present the results of patients in our clinic who underwent colonoscopy and gastroscopy because of iron deficiency.

METHOD

Patients who underwent gastroscopy and colonoscopy for the etiology screening of iron deficiency anemia in Ankara Ataturk Sanatorium Training and Research Hospital Gastroenterology Department between July 2021 and December 2022 were included in the study. The study was carried out with the permission Ankara Ataturk Sanatorium Training and Research Hospital Ethics Committee (Date: 13/02/2023, Decision No:209039370). All procedures were carried out in accordance with the ethical rules and the principles of the Declaration of Helsinki Informed consent was obtained during the procedure and the data were evaluated retrospectively. Age, gender, anamnesis and endoscopic results of the patients were acquired retrospectively via investigation of patients files. Patients who were followed up and treated for hematological and oncological malignancies, patients admitted with gastrointestinal bleeding, patients under 18 years of age, patients with chronic renal and hepatic failure, previously identified malignancy, previous gastric and intestinal resection, known inflammatory bowel disease, malabsorption were not included in the study.

Statistical Analysis

SPSS 21.0 for statistical analysis Windows program used. Descriptive statistical methods(mean,standard)were used.

RESULTS

During this period, colonoscopy was requested in 576 (20%) of 2880 patients due to the etiology of iron deficiency anemia. Of the patients, 280 (48.6%) were male and 296 (51.4%) were female. The mean age of men was 63.6±7.4 years, and the mean age of women was 58.4±8.6 years. Gastroscopy was performed in 496 of the cases. Although colonoscopy was normal, there were 40 (6.9%) patients who did not undergo gastroscopy. 205 (35.6%) patients

had no endoscopic finding to explain anemia and 296 (51.4%) had no colonoscopic polyps or carcinomas and no colonoscopic findings to explain anemia. Colonoscopy was normal in 98 (17%) of the patients and there was no significant feature in esophagogastroscopy. However, a total of 357 (61.9%) patients had either gastroscopic or colonoscopic findings that could explain the anemia. Polyps were detected in 300 (52.4%) patients and carcinoma in 38 (6.5%) patients during colonoscopy. Considering the number of polyps in patients with polyps, one polyp was removed in 168 patients, two polyps in 58 patients, three polyps in 46 patients, five polyps in 20 patients, and six polyps in 8 patients. Considering the diameters of the polyps, 195 (65%) diminutive polyps with <0.5 cm diameter, 36 (12%) with 1 cm diameter, 32 (10.6%) with 1.5 cm diameter, 20 (6%) with 2 cm diameter There were .6) polyps with a diameter of 3 cm and 17 (5.6%) polyps. Considering the degree of dysplasia of the polyps, 122 (40.6%) had a mild degree of dysplasia. When we examine the total polyp localizations; 114 (38%) in the sigmoid colon, 54 (18%) in the rectum, 36 (12%) in the descending colon, 33 (11%) in the transverse colon, 33 (11%) in the ascending colon and 30 (10%) were found in the cecum. When the histological types of polyps are examined, 210 (70%) hyperplastic polyps, 73 (24.3%) adenomatous polyps; 42 (57.5%) were tubular adenomas, 21 (28.7%) were tubulovillous adenomas, and 10 (13.8%) were villous adenomas. 4 (1.3%) were reported to have mild chronic inflammation and regenerative changes, and 3 (1%) were reported as inflammatory polyps. Polyps with other histological features were 10 (3.4%). 40 (13.3%) of the patients with polyps had a family history of colonic ca or polyp. Of the patients with polyps, 10 (3.3%) had a history of alcohol use more than 50 g/day, 65 (21.6%) had a history of smoking over 25 packs/year, and 42 (14%) had a history of smoking under 25 packs/year . There was a long history of active smoking (Table 1).

Table 1. Characteristics Of Patients With Polyps Detected By Colonoscopy

Total Number of Patients	Total Number of Polyps	
Localization	Sigmoid colon	38%
	Rectum	12%
	Transvers colon	11%
	Descending colon	12%
	Ascending colon	11%
	Cecum	10%
Polyp Diameter	0,5 cm	65%
	1 cm	12%
	1,5 cm	0.6%
	2 cm	6.6%
	3 cm	5.6%
Histopathological Types	Hyperplastic polyp	70%
	Tubular adenoma	14%
	Tubulovillous adenoma	7%
	Villous adenoma	3.3%
	Mild chronic inflammation	1.3%
	Inflammatory polyp	1%
	Dimer disease types	63.4%
Cigarettes and Alcohol	65 patient >25 pack year cigarette squits moking	
	42 patients <25 pack year cigaretteusing	

10 patients >50 gr/day heavy alcohol drinker
--

When we look at the localizations of those with colon cancer, 18 (47.3%) are in the sigmoid colon, 6 (15.7%) are in the rectum, 6 (15.7%) are in the descending colon, and 4 (10.5%) are ascending colon, 3 (7.8%) in the cecum, 1 (3.8%) in the transverse colon. When the histological type of colon ca was examined, adenocarcinoma was detected in all of them. Among these patients, 12 (31.5%) had a family history of colonic ca, 17 (50%) had a smoking history for more than 20 years, and 4 (10.5%) had a history of alcohol use less than 30 g/day. The others had no smoking or alcohol consumption history. When the BMI of the patients was examined, it was seen that 4 of them were >30, 6 of them were <25 and the others were between 25-30 (Table 2).

Table 2. Characteristics of patients with malignancies detected by colonoscopy

Histopathological Type	Adenokarsinoma	
Localization	Sigmoid colon	47.3%
	Rectum	15.7%
	Descending colon	15.7%
	Ascending colon	10.5%
	Cecum	7.8%
	Transvers colon	3.8%
Cigarettes and Alcohol	17 patients > 20 pack year cigarettes	
	4 günde <30 gr/day alcohol	
BMI	>30 four patients	
	<25 six patients	
	25 - 30/tytwenty five patients	

Cardiac adenocarcinoma was detected in 1 and Barret's esophagus in 1 of the patients who underwent gastroscopy. Among the patients, 60 had pathologically diagnosed chronic active gastritis, 36 had ulcers, 55 had hyperplastic polyps, 6 had esophageal varices, 36 had esophagitis, and 16 had hiatal hernia. Duodenal biopsy was taken for celiac in 47 of the patients and celiac disease was detected in 24 patients. Biopsies were obtained from 496 patients for Helicobacter pylori and intestinal metaplasia. Among these, 236 had Helicobacter pylori and 113 had intestinal metaplasia. There was an endoscopic finding that could explain anemia in a total of 68.8 % of patients.

DISCUSSION

After the confirmation of iron deficiency anemia via laboratory studies endoscopic examination of the gastrointestinal tract should be initiated. Before the endoscopic examination, exclusion of such possible anemia reasons is necessary; dietary iron deficiency, increased iron requirement and extra-gastrointestinal blood loss.

Two important causes of iron deficiency are chronic blood loss and iron absorption disorders. Both conditions are closely related to the gastrointestinal system. In gastrointestinal applications due to iron deficiency; it was determined that the reason of iron deficiency was gastrointestinal in 43-86% of different patient groups (5-11).

For patients with iron deficiency, the most common diagnoses is gastrointestinal system cancers. In gastrointestinal system endoscopic examinations performed in patients with iron deficiency anemia, the rate of malignancy has been reported to vary between 6% and 13% (5-11). In a study which is conducted in Turkey due to iron deficiency anemia, it was reported that malignancy was found at a rate of 3.81% in gastroscopy and 8.6% in colonoscopy (5). In another study which is conducted in Turkey, adenocarcinoma was diagnosed in 0.9% of patients who underwent upper gastrointestinal endoscopy and in 4.7% of patients who underwent lower gastrointestinal system endoscopy in patients who were examined because of iron deficiency anemia. Again in this study, the frequency of polyp detection in colonoscopy was reported to be 45% (12). Although the diagnostic benefit of esophagogastrosopy is higher than colonoscopy, colonoscopic examination is necessary even in the presence of a benign upper gastrointestinal lesion to explain anemia, especially in the elderly (13-15). Detection of significant colonic malignancy in patients with benign upper gastrointestinal lesion necessitates whole colon examination(16-20).

In the patients included in the study, polyps were detected in 52.4% of the patients and adenocarcinoma in 6.5% of the patients during colonoscopy, and their detailed characteristics are mentioned in Tables 1 and 2. Neoplastic lesion (polyp or cancer) was detected in the colon with a total rate of 61.9%. The most common lesion in gastroscopy was gastritis (72.3%). In addition, gastroscopy revealed adenocarcinoma in 0.02% and Barret's esophagus, which was premalignant in 0.02%. Polyps were found in 11%, celiac disease in 4.8%, and esophageal varices and liver cirrhosis in 1.2%. These ratios show that both processes should be done together. In addition, although only 47 patients had a biopsy for celiac, 24 (51%) were positive for celiac, suggesting that routine duodenal biopsy should be performed in the investigation of the etiology of iron deficiency anemia.

CONCLUSION

In conclusion, when investigating the cause of IDA, it should be kept in mind that there might be several underlying causes, especially if a pathology originating from the gastrointestinal tract is considered. Among these reasons, malignancies, which are the most important diseases, have an important place. Considering that the frequency of colorectal cancer is higher than gastric cancer today; it is suggested that colonoscopy should be performed firstly, and if the colonoscopy result is negative, then gastroscopy should be performed.

Ethics Committee Approval: The study was carried out with the permission of XXX Training and Research Hospital Ethics Committee (Date: 13/02/2023, Decision No:209039370).

Informed Consent: Because the study was designed retrospectively, no written informed consent form was obtained from patients.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

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

Author Contributions: All of the authors declare that they have all participated in the design, execution, and analysis of the paper and that they have approved the final version.

REFERENCES

1. World Health Organization. Nutritional Anemias: Report of a WHO Scientific Group. WHO Technical Reports Series 405. Geneva, Switzerland: World Health Organization.

2. Provan D. Mechanism and management of iron deficiency anemia. *Br J Haematol* 1999; 105(Suppl 1): 19-26.
3. Goddard AF, James MW, Mc Intyr AS, et al. Guidelines for the management of iron deficiency anemia. *Gut*. 2011; 60:1309-1316. doi:10.1136/gut.2010.228874
4. Bull-Henry K, Al-Kawas FH. Evaluation of occult gastrointestinal bleeding. *Am Fam Physician*. 2013;87:430-436.
5. Çetinkaya ZA, Sezikli M, Güzelbulut F, et al. Demir eksikliği anemili hastalarda gastrointestinal endoskopik inceleme sonuçları. *Dicle Tıp Dergisi*. 2011;38:155-159. doi:10.5798/diclemedj.0921.2011.2.0006
6. Calvey HD, Castleden CM. Gastrointestinal investigations for anaemia in the elderly: a prospective study. *Age Ageing*. 1987;16:399-404.
7. Moses PL, Smith RE: Endoscopic evaluation of iron deficiency anemia. A guide to diagnostic strategy in older patients. *Postgraduate Med*. 1995;98.
8. Cook I J, Pavli P, Riley JW, et al. Gastrointestinal investigation of iron deficiency anemia. *British Med J*. 1986;292:1380-2. doi:10.1136/bmj.292.6532.1380
9. Kepczyk T, Kadakia SC. Prospective evaluation of gastrointestinal tract in patients with iron-deficiency anemia. *Dig Dis Sci*. 1995;40:1283-1299.
10. Ho CH, Chau WK, Hsu HC, et al. Predictive risk factors and prevalence of malignancy in patients with iron deficiency anemia in Taiwan. *Am J Hematol*. 2005;78:108-112.
11. Majid S, Salih M, Wasaya R, et al. Predictors of gastrointestinal lesions on endoscopy in iron deficiency anemia without gastrointestinal symptoms. *BMC Gastroenterol*. 2008;8:52. doi:10.1186/1471-230X-8-52
12. Ünal ÜH, Fidan C, Korkmaz M, et al. Demir eksikliği olan hastalarda gastrointestinal sistem endoskopi bulguları. *Akad Gastroenterol Derg*. 2012;3:113-116.
13. Rockey DC, Cello JP. Evaluation of the gastro-intestinal tract in patients with iron-deficiency anemia. *N Engl J Med*. 1993;329:1691-1695
14. Lucas CA, Logan ECM, Logan RFA. Audit of the investigation and outcome of iron-deficiency anaemia in one health district. *J R Coll Physicians Lond*. 1996;30:33-35.
15. Gordon SR, Smith RE, Power GC: The role of iron deficiency anemia in patients over the age of 50. *Am J Gastroenterol*. 1994;89:1963-1967.
16. Zuckerman G, Benitez J: A prospective study of bidirectional endoscopy (Colonoscopy and EGD) in the evaluation of patients with occult gastrointestinal bleeding. *AM J Gastrointestinal*. 1992;87:62-66.
17. My Intyre AS, Long RG: Prospective survey of investigations in outpatient with iron deficiency anemia. *Gut*. 1993;34:1102-1107. doi:10.1136/gut.34.8.1102
18. Brenner H, Stock C, Hoffmeister M. Effect of screening sigmoidoscopy and screening colonoscopy on colorectal cancer incidence and mortality: Systematic review and meta-analysis of randomised controlled trials and observational studies. *BMJ*. 2014;348:g2467.
19. Sayer JM, Donnelly MT, McIntyre AS, et al. Is colonoscopy necessary as a first line investigation in iron deficiency anaemia. *Gut*. 1995;36(suppl II):A35.
20. Hardwick RH, Armstrong CP. Synchronous upper and lower gastrointestinal endoscopy is an effective method of investigating iron-deficiency anaemia. *Br J Surg*. 1997;84:1725-1728.