

Comparison of polyp detection rate and pathology results on repeat colonoscopies in patients undergoing colonoscopic polypectomy

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ABSTRACT

Introduction: Adenomatous colon polyps are important precancerous lesions. Important clinical questions include how patient follow-up should be conducted after the detection of adenomas and which risk factors increase the likelihood of adenoma development. The aim of this study was to compare the pathology results of repeat colonoscopies with those of the initial procedure and to identify risk factors for adenoma development by evaluating patients who underwent polypectomy in the general population, including those in whom adenomas were detected during both colonoscopies.

Materials and Methods: Adenomatous colon polyps are important precancerous lesions. Important clinical questions include how patient follow-up should be conducted after the detection of adenomas and which risk factors increase the likelihood of adenoma development. The aim of this study was to compare the pathology results of repeat colonoscopies with those of the initial procedure and to identify risk factors for adenoma development by evaluating patients who underwent polypectomy in the general population, including those in whom adenomas were detected during both colonoscopies.

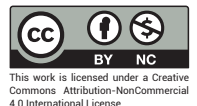
Results: The probability of detecting adenomas in a subsequent colonoscopy was significantly higher in patients in whom adenomas were detected during the first colonoscopy compared with those in whom no adenomas were found initially (Z-test, $p < 0.05$). It was also observed that patients in whom a polyp larger than 1 cm was detected during the first colonoscopy had a higher probability of adenoma detection in the second colonoscopy (Chi-square test, $p < 0.05$).

Conclusions: Conclusion, a second colonoscopy is recommended for follow-up in patients in whom adenomas or polyps larger than 1 cm are detected during the initial colonoscopy.

Keywords: Polypectomy, colonoscopy, adenoma, risk factors



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Introduction

Colorectal cancers account for approximately 10% of all cancers worldwide. They are the third most common cancer in men and the second most common in women, and they represent one of the leading causes of cancer-related mortality.^[1]

Screening programs vary between countries, and both invasive and non-invasive tests are used as screening methods. The most commonly used invasive screening method is endoscopy.^[2] Colonoscopy, an invasive procedure, is considered superior to other tests because it allows direct visualization of lesions and enables biopsy sampling.^[3]

Adenomatous polyps have the potential to undergo malignant transformation. While the probability of adenomas progressing to cancer is estimated to be approximately 3–5%, non-neoplastic polyps are generally considered to have no malignant potential. Adenomas larger than 10 mm, particularly those with villous components and high-grade dysplasia, have a higher risk of malignant transformation.^[4] Therefore, detection and removal of colon polyps are critically important.

It is widely accepted that the majority of colorectal cancers develop from polyps. Previous studies suggest that colon polyps are more frequently located in the left colon.^[5] In this study, colon polyps were categorized as originating from the right or left colon, and the pathology results obtained from the initial and subsequent colonoscopies were compared.

Bowel preparation quality, cecal intubation rate, adenoma detection rate (ADR), colonoscopy withdrawal time, and complication rates are commonly used quality indicators in colonoscopy. Numerous studies have retrospectively analyzed colonoscopy data.^[6,7]

This study investigates the effectiveness of colonoscopy in detecting and removing precancerous lesions and aims to determine which patients should be recommended for repeat colonoscopy.

Adenoma detection rate (ADR) is considered one of the most important quality indicators of colonoscopy. Studies have shown that higher ADR values are associated with a lower risk of interval colorectal cancer. Therefore, careful examination during colonoscopy and removal of precancerous lesions play a crucial role in colorectal cancer prevention.

Materials and Methods

A retrospective study was conducted on 150 patients (97 men and 53 women; mean age 58.4±10.6 years, range 22–88) who underwent polypectomy during colonoscopy at the endoscopy unit of Sancaktepe Şehit Prof. Dr. İlhan Varank Training and Research Hospital between January 2, 2023 and July 2, 2023.

Colonoscopy reports from the hospital were reviewed retrospectively. Pathology reports of patients who underwent polypectomy were examined, and it was determined whether they had undergone repeat colonoscopy. In patients who underwent repeat colonoscopy, pathology reports of polyps removed during both the initial and subsequent colonoscopies were compared.

Among the 150 patients screened, 110 did not undergo repeat colonoscopy. Two patients were referred for oncological treatment due to colon cancer, one patient underwent endoscopic submucosal dissection (ESD), one patient underwent left hemicolectomy, and one patient was referred for further follow-up due to suspected adenomatous polyposis coli (APC). A total of 35 patients underwent repeat colonoscopy.

A total of 296 polyps were detected in 150 patients. The mean number of polyps per patient was 1.77. Most patients had a single polyp, whereas multiple polyps were detected in a smaller proportion of patients.

For each patient, the following data were recorded: Age, gender, number of polyps removed during the first colonoscopy, number of polyps larger than 1 cm, pathology results, and morphological type (diminutive, sessile, pedunculated). Additionally, the number and type of polyps detected during the second colonoscopy and their pathology results were documented.

Polyps were detected in both the right and left colon. In the right colon, the most common locations were the ascending colon, followed by the cecum and hepatic flexure. In the left colon, the most frequent sites were the sigmoid colon, rectum, and descending colon.

Polyp localization was categorized according to colon segments including the cecum, ascending colon, hepatic flexure, transverse colon, splenic flexure, descending colon, sigmoid colon, and rectum.

Polyps were classified according to size. Polyps smaller than 5 mm were defined as diminutive polyps, those mea-

suring 5–9 mm were considered small polyps, and polyps ≥ 10 mm were classified as large polyps.

Morphological classification was performed according to the Paris classification system, including sessile and pedunculated polyps.

Quality indicators such as polyp detection rate and adenoma detection rate were considered during colonoscopic evaluation. All colonoscopies were performed according to standard colonoscopy procedures, and detected polyps were removed when appropriate.

Ethics committee approval was obtained from the Ethics Committee of This study was approved by the Sancaktepe Şehit Prof. Dr. İlhan Varank Training and Research Hospital (Date: 10.12.2025; No: 460). This study was conducted in accordance with the Declaration of Helsinki.

Statistical Analysis

Statistical analyses were performed using SPSS software. Continuous variables were expressed as mean \pm standard deviation, whereas categorical variables were expressed as numbers and percentages. A p-value < 0.05 was considered statistically significant.

Results

It was observed that in the 150 patients screened, the total number of polyps and the rate of polyps larger than 1 cm increased with age. This is shown in Figures 1 and 2.

Among 150 patients, those with a higher number of polyps larger than 1 cm were more likely to be male. Of the

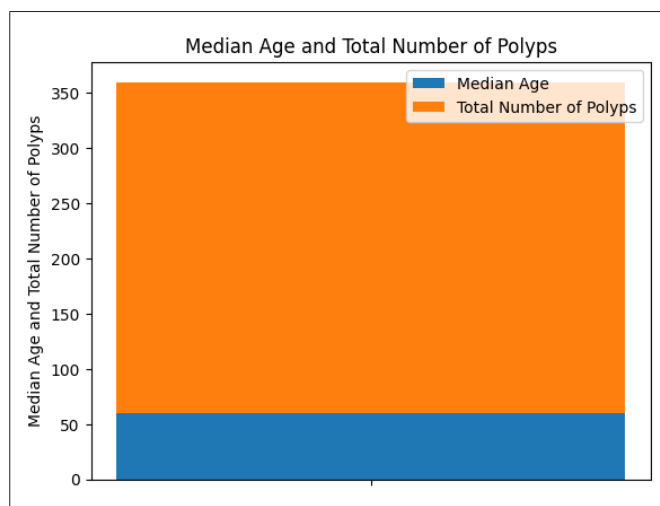


Figure 1. Total number of polyps according to median age.

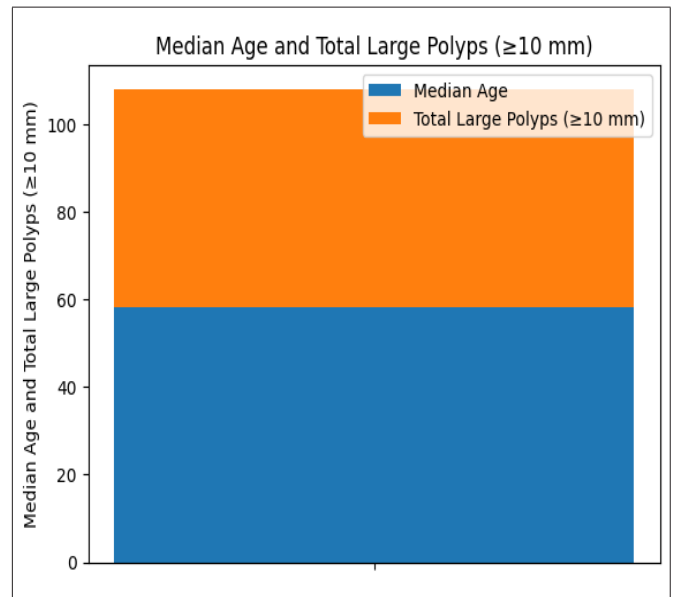


Figure 2. Total number of polyps larger than 1 cm according to median age.

296 polyps excised from 150 patients, 199 were from men and 97 from women. Of the 49 polyps larger than 1 cm excised from 150 patients, 36 were from men and 13 from women. This is shown in Figures 3 and 4.

According to our findings, male gender (Chi-square test, $p < 0.05$) and advanced age (t-test, $p < 0.05$) were associated with an increased number of colon polyps and a higher incidence of polyps larger than 1 cm (t-test, $p < 0.05$).

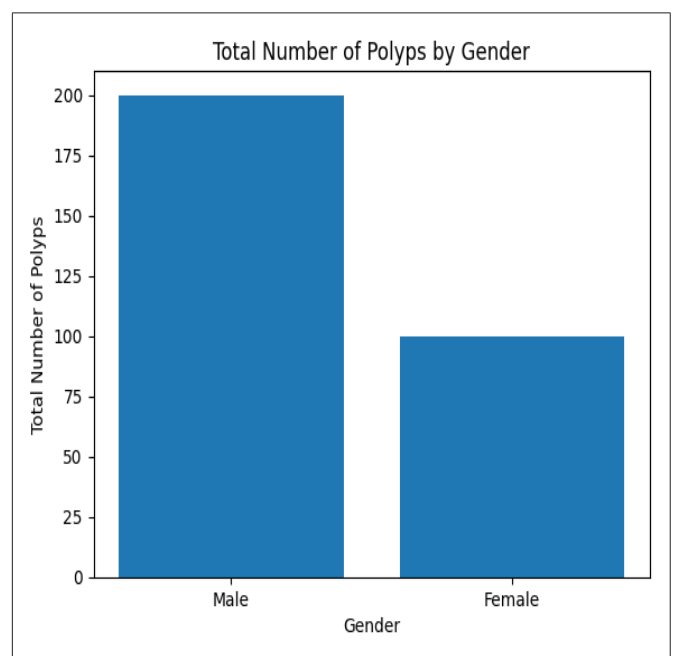


Figure 3. Shows the total number of polyps according to gender criteria.

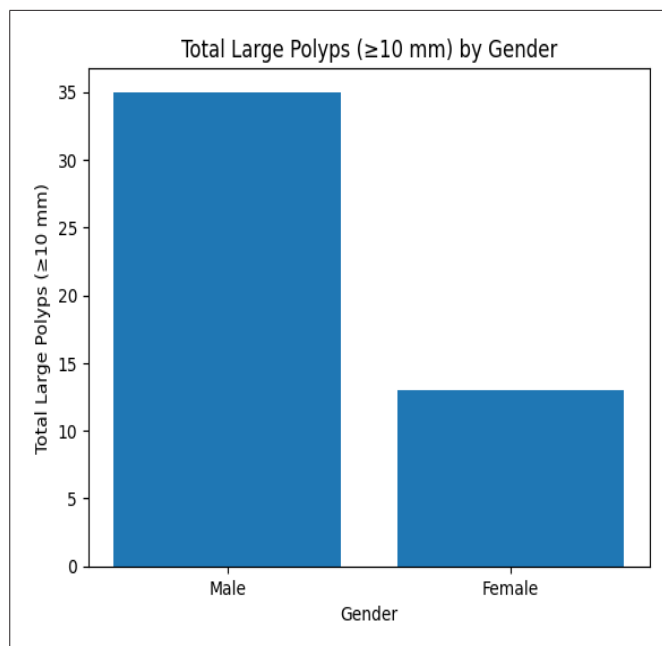


Figure 4. Total number of polyps larger than 1 cm according to gender criteria.

Thirty-five patients who had an adenoma in their initial colonoscopy were examined; in subsequent colonoscopies, adenomas were detected in 13 of them, no polyps were found in 12, benign polyps were found in 6, and adenocarcinoma was diagnosed in 4. Based on these findings, the rate of adenoma detection in subsequent colonoscopies was determined to be 34% in patients who had an adenoma in their first colonoscopy. In 150 patients, the number of adenomas detected in the first colonoscopy was 34, representing 21%. The probability of detecting an adenoma in a second colonoscopy was significantly higher in patients who had an adenoma in their first colonoscopy compared with those who did not (Z-test, $p < 0.05$).

When patients in whom adenomas were detected in both colonoscopies were examined, 7 were male and 6 were female. Eight of the second polypectomies were in the left colon and 5 were in the right colon. The likelihood of detecting adenomas in follow-up colonoscopies was found to be unrelated to gender or the location of the polyp in the colon (Chi-square test, $p > 0.05$). While the mean age of the 150 patients included in the study was 57.5, the mean age of the 13 patients in whom adenomas were detected in both colonoscopies was 54.9. Compared to the general population, age was not considered a significant risk factor for adenoma detection (t-test, $p > 0.05$).

Of the 150 patients included in the study, 33 had polyps larger than 1 cm (approximately 21%). Of the 13 patients who had adenomas detected in their second colonoscopy, 6 had polyps larger than 1 cm in their first colonoscopy (approximately 46%). It was observed that patients who had polyps larger than 1 cm in their first colonoscopy had a higher probability of adenoma detection in their second colonoscopy (Chi-square test, $p < 0.05$).

Discussion

The results of this study indicate that male gender and advanced age increase the likelihood of multiple colon polyps and polyps larger than 1 cm. It has been reported in many studies that colorectal cancer incidence increases with age.^[8]

Patients who had an adenoma detected in their first colonoscopy had a significantly higher risk of adenoma detection in subsequent colonoscopies compared with those who did not. This finding highlights the importance of screening and excision of precancerous lesions, as well as follow-up colonoscopy. Current guidelines also recommend follow-up colonoscopy, particularly for high-risk patients.^[9]

It was observed that detection of polyps larger than 1 cm during the first colonoscopy significantly increases the risk of adenoma detection in subsequent colonoscopies. It should also be noted that polyps smaller than 1 cm may be missed during colonoscopy.^[10] In patients who have had polyps larger than 1 cm excised during their first colonoscopy, follow-up colonoscopy is essential to detect missed lesions and newly developed adenomas.

Most polyps detected in this study were diminutive polyps. Previous studies have similarly demonstrated that the majority of colorectal polyps detected during colonoscopy are small or diminutive lesions. Early detection and removal of these lesions may reduce the incidence of colorectal cancer.

Previous studies have also shown that colonoscopy significantly reduces colorectal cancer incidence through the detection and removal of adenomatous polyps. Our findings are consistent with these studies.

Differences between studies regarding polyp distribution and morphology may be related to variations in population characteristics, sample size, and colonoscopy indications. Ethnic and regional differences may also contribute to variations in colorectal polyp prevalence.

Conclusion

In conclusion, repeat colonoscopy should be recommended for patients in whom adenomas or polyps larger than 1 cm are detected during the initial colonoscopy. Colonoscopy remains a highly effective diagnostic and therapeutic tool for detecting colorectal polyps. Early identification and removal of precancerous lesions may significantly reduce colorectal cancer incidence. Future prospective studies with larger populations may further clarify the characteristics and distribution of colorectal polyps.

Disclosures

Ethics Committee Approval: This study was approved by the Sancaktepe Şehit Prof. Dr. İlhan Varank Training and Research Hospital (Date: 10.12.2025, No: 460).

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Informed Consent: Written informed consent was obtained.

Use of AI for Writing Assistance: None declared.

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