

Factors Associated with the Presence of Colorectal Polyps Measuring ≥ 10 Mm: A Single-Center Study

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Abstract

Original Research Article

Background/Introduction: Colorectal polyp size is a major determinant of the risk of progression to colorectal cancer. Polyps measuring 10 mm or larger are considered higher-risk lesions and require tailored endoscopic management. The objective of this study was to identify factors associated with the presence of colorectal polyps measuring ≥ 10 mm. **Patients and Methods:** This was a single-center cross-sectional study including 264 patients who underwent colonoscopy with discovery of at least one colorectal polyp. Primary analysis focused on 247 patients for whom polyp size was recorded. The primary outcome was the presence of at least one polyp measuring ≥ 10 mm. Demographic, clinical, and endoscopic factors were compared using Chi-square test, Mann-Whitney U test, and multivariate logistic regression. **Results:** Among 247 patients analyzed, 100 patients (40.5%) presented with at least one polyp measuring ≥ 10 mm. The median size of the largest polyp was 7 mm (range: 2–50 mm). A personal history of polyps was significantly associated with the presence of a polyp ≥ 10 mm in univariate analysis (44.4% vs. 27.2%; $p = 0.011$; unadjusted OR = 2.10, 95% CI: 1.22–3.60). In multivariate analysis, the number of polyps was the only factor independently associated with the presence of a large polyp (adjusted OR = 1.89; 95% CI: 1.11–3.21; $p = 0.018$). Age, sex, hematochezia, and personal history of polyps were not significantly associated after adjustment. **Conclusion:** In this cohort, approximately four out of ten patients presented with at least one colorectal polyp measuring ≥ 10 mm. A higher polyp count was independently associated with the presence of large polyps. These findings emphasize the necessity of complete colonic evaluation and tailored post-polypectomy surveillance.

Keywords: Colorectal polyps; Colonoscopy; Polyp size; Colorectal cancer; Polypectomy; Screening.

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1. INTRODUCTION

Colorectal cancer represents one of the most common malignancies worldwide. The vast majority of these cancers develop via the adenoma-carcinoma sequence from precancerous lesions that can be detected and removed during colonoscopy.

Polyp size is one of the principal predictive factors for the risk of advanced neoplasia and progression to colorectal cancer. Polyps measuring 10 mm or larger are generally categorized as higher-risk lesions, justifying complete endoscopic resection and tailored post-polypectomy surveillance.

Several clinical and demographic parameters have been reported in association with the presence of large polyps, including advanced age, male sex, personal or family history of polyps or colorectal cancer, total polyp count, and clinical presentations such as hematochezia or iron-deficiency anemia.

The primary objective of this study was to evaluate the frequency of colorectal polyps measuring ≥ 10 mm and to identify factors independently associated with their presence within a single-center patient cohort.

2. PATIENTS AND METHODS

2.1 Study Design and Population

This single-center cross-sectional study was conducted among patients who underwent colonoscopy with the detection of at least one colorectal polyp at the Department of Gastroenterology I of the Mohammed V Military Instruction Hospital in Rabat, Morocco. Patient records were identified from a clinical and endoscopic database containing clinical, procedural, and therapeutic parameters.

A total of 264 medical records were retrieved. The primary statistical analysis focused on 247 patients for whom the size of at least one polyp was fully documented.

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2.2 Primary Endpoint

The primary outcome measure was the presence of at least one colorectal polyp measuring ≥ 10 mm in maximum diameter. In cases where multiple polyps were identified, the maximum polyp size recorded for that patient was used for classification. Patients were categorized into two distinct groups:

- Small/intermediate polyp group: maximum polyp size < 10 mm
- Large polyp group: at least one polyp measuring ≥ 10 mm

2.3 Variables Studied

The following variables were collected and analyzed for each patient:

- Demographic features: age and sex
- Clinical presentation: hematochezia, altered bowel habits, abdominal pain, and iron-deficiency anemia
- Medical history: personal history of colorectal polyps or colorectal cancer, and underlying inflammatory bowel disease
- Endoscopic parameters: completeness of colonoscopy, total polyp count, maximum polyp size, location, and morphological classification

- Resection details: endoscopic resection techniques utilized

2.4 Statistical Analysis

Qualitative variables were expressed as frequencies and percentages. Quantitative variables were expressed as medians and ranges (extremes). Group comparisons were performed using the Chi-square test or Fisher's exact test for qualitative variables, and the Mann-Whitney U test for continuous quantitative variables.

A multivariate logistic regression model was constructed to identify factors independently associated with the presence of a polyp measuring ≥ 10 mm. Variables included in the model were age, sex, hematochezia, personal history of polyps, and total polyp count. The threshold for statistical significance was defined as $p < 0.05$.

3. RESULTS

3.1 Population Characteristics

Among the 247 patients included in the main analysis, 100 patients (40.5%) had at least one colorectal polyp measuring ≥ 10 mm, whereas 147 patients (59.5%) presented exclusively with polyps measuring < 10 mm. The overall median size of the largest polyp was 7 mm (range: 2–50 mm).

Table 1: Distribution of patients according to maximum colorectal polyp size (N = 247)

Maximum Polyp Size Category	Patient Count (n)	Percentage (%)
< 6 mm	87	35.2%
6–9 mm	60	24.3%
≥ 10 mm	100	40.5%

3.2 Factors Associated in Univariate Analysis

In univariate analysis, a personal history of colorectal polyps was significantly associated with the presence of a polyp measuring ≥ 10 mm. Specifically, a personal history of polyps was noted in 44.4% (44/100)

of patients with large polyps compared to 27.2% (40/147) of patients without large polyps ($p = 0.011$), corresponding to an unadjusted odds ratio (OR) of 2.10 (95% CI: 1.22–3.60).

Table 2: Clinical and endoscopic factors associated with polyp size ≥ 10 mm in univariate analysis

Clinical / Endoscopic Factor	Polyp < 10 mm (n=147)	Polyp ≥ 10 mm (n=100)	p-value
Median age (years)	60	59	0.519
Hematochezia	36 (24.5%)	22 (22.0%)	0.726
Iron-deficiency anemia	7 (4.8%)	3 (3.0%)	0.705
Abdominal pain	9 (6.1%)	6 (6.0%)	1.000
Personal history of polyps	40 (27.2%)	44 (44.0%)	0.011*
History of colorectal cancer	19 (12.9%)	15 (15.0%)	0.784
Multiple polyps	32 (21.8%)	30 (30.0%)	0.189

*Statistically significant ($p < 0.05$).

Symptoms including hematochezia, iron-deficiency anemia, and abdominal pain, as well as age and sex, showed no statistically significant association with the presence of large polyps.

3.3 Multivariate Analysis

In multivariate logistic regression analysis, total polyp count was identified as the sole independent factor associated with the presence of a polyp measuring ≥ 10 mm. Each additional polyp was associated with an increased likelihood of presenting with a large polyp (adjusted OR = 1.89; 95% CI: 1.11–3.21; $p = 0.018$).

Table 3: Factors independently associated with polyp size ≥ 10 mm in multivariate logistic regression

Variable	Adjusted OR	95% CI	p-value
Age	0.99	0.97–1.02	0.636
Female sex	1.04	0.52–2.06	0.918
Hematochezia	1.40	0.62–3.15	0.413
Personal history of polyps	1.79	0.88–3.64	0.110
Number of polyps	1.89	1.11–3.21	0.018*

*Statistically significant ($p < 0.05$). OR: Odds Ratio; CI: Confidence Interval.

Personal history of polyps showed a trend toward an increased risk (adjusted OR = 1.79), but did not retain statistical significance after multivariate adjustment.

4. DISCUSSION

In this single-center study, approximately 40% of patients diagnosed with colorectal polyps presented with at least one lesion measuring 10 mm or larger. This high proportion underscores the importance of thorough colonic evaluation and meticulous size measurement during colonoscopy, as polyp size directly dictates histological risk and post-polypectomy surveillance intervals.

The major finding of this study is the independent association between the number of polyps and the presence of a polyp measuring ≥ 10 mm. Patients presenting with multiple polyps represent a subgroup at higher risk for advanced colorectal neoplasia, supporting international guidelines that recommend more frequent surveillance intervals for patients with higher polyp burdens.

Although personal history of polyps was significantly associated with large polyps in univariate analysis (OR = 2.10), it was not confirmed as an independent predictor in multivariate modeling. This attenuation may be explained by statistical overlap between a prior history of polyps and current polyp multiplicity, as well as sample size constraints.

Interestingly, presenting symptoms such as hematochezia, iron-deficiency anemia, and abdominal pain were not associated with polyp size. This aligns with clinical observations that small polyps can occasionally bleed, while many large adenomas remain entirely asymptomatic and are detected incidentally during screening or diagnostic procedures.

5. CONCLUSION

In this single-center cohort, 40.5% of patients with colorectal polyps had at least one lesion measuring ≥ 10 mm. Total polyp count was the sole independent factor associated with the presence of large polyps. These findings highlight the critical role of complete high-quality colonoscopy, precise lesion sizing,

complete resection, and tailored post-polypectomy surveillance, particularly in patients with multiple polyps.

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