

1 “ASSESSMENT OF COLONOSCOPIC FINDINGS IN PATIENTS
2 PRESENTING WITH LOWER GASTROINTESTINAL
3 SYMPTOMS”
4

5 **ABSTRACT**

6 **Background:** Colonic diseases present with a wide spectrum of symptoms such as
7 per rectal bleeding, altered bowel habits, chronic diarrhea, and unexplained weight
8 loss. Early and accurate diagnosis is essential for appropriate management and
9 prevention of complications, particularly colorectal malignancies. Colonoscopy is
10 considered the gold standard diagnostic procedure for evaluating diseases of the large
11 intestine as it allows direct visualization, localization of lesions, and biopsy when
12 required.

13 **Aim:** To study the role of colonoscopy in the evaluation of colonic diseases.

14 **Objectives:** To evaluate the causes of per rectal bleeding, to study benign and
15 malignant disorders of the large intestine, and to assess the colonoscopic findings in
16 patients presenting with inflammatory bowel symptoms and unexplained weight loss.

17 **Methods:** This hospital-based observational study included 120 patients who
18 underwent colonoscopic examination for various gastrointestinal symptoms
19 suggestive of colonic pathology. Demographic details, body mass index, clinical
20 indications, duration of symptoms, associated comorbidities, colonoscopic findings,
21 lesion location, and histopathological results were recorded and analyzed.
22 Colonoscopy was performed using standard procedures and biopsies were taken
23 whenever suspicious lesions were identified for histopathological evaluation.

24 **Results:** The majority of patients belonged to the 50–59 years age group (27.5%),
25 with males constituting 60% of the study population. Overweight and obesity were
26 observed in 60.8% of participants. Per rectal bleeding was the most common
27 indication for colonoscopy (25.8%), followed by chronic diarrhea (15.8%).
28 Colonoscopy revealed normal findings in 32.5% of patients, while abnormal findings
29 included neoplastic or pre-neoplastic lesions (20.8%), inflammatory conditions
30 (15.8%), and anorectal disorders (10.8%). The rectum was the most frequently
31 involved site (20%), followed by the sigmoid colon (13.3%). Histopathological
32 examination was performed in 33.3% of cases, with active colitis (7.5%), carcinoma
33 (5.8%), and ulcerative colitis (5%) being the most common diagnoses. No immediate
34 complications were observed following colonoscopy.

35 **Conclusion:** Colonoscopy is a safe and highly effective diagnostic tool for the
36 evaluation of colonic diseases. It plays an important role in identifying inflammatory,
37 benign, and malignant conditions of the large intestine, particularly in patients
38 presenting with rectal bleeding and persistent gastrointestinal symptoms. Early
39 colonoscopic evaluation facilitates timely diagnosis and appropriate management of
40 colorectal disorders.

41 **Keywords:** *Colonoscopy, Colonic diseases, Per rectal bleeding, Inflammatory bowel*
42 *disease, Colorectal lesions, Colonoscopic findings, Large intestine.*

43 **INTRODUCTION**

44 Colonoscopy is an essential diagnostic and therapeutic procedure for the
45 evaluation of lower gastrointestinal diseases. It enables direct visualization of the
46 colonic mucosa and allows tissue biopsy, polypectomy, and therapeutic interventions
47 during the same procedure. Common indications for colonoscopy include per rectal
48 bleeding, altered bowel habits, chronic diarrhea, constipation, anemia, unexplained
49 weight loss, and screening for colorectal cancer (CRC).

50 Colonoscopy is considered the gold standard for colorectal cancer screening
51 because of its high diagnostic accuracy and ability to detect and remove precancerous
52 lesions, thereby reducing CRC incidence and mortality. In addition to colorectal
53 malignancies, colonoscopy is valuable in diagnosing inflammatory bowel disease,
54 diverticular disease, infectious colitis, and other colorectal pathologies.^{1,2}

55 Globally, colorectal cancer represents a major public health concern, with
56 increasing incidence and mortality rates. In India, the burden of CRC is also rising,
57 particularly in urban populations, due to changing lifestyle patterns, dietary habits,
58 and improved diagnostic awareness. Despite its proven benefits, the uptake of
59 screening colonoscopy remains low in many low- and middle-income countries,
60 including India.³⁻⁷

61 Considering the increasing burden of colorectal diseases and the important
62 role of colonoscopy in diagnosis and management, the present study was undertaken
63 to evaluate the clinical indications, colonoscopic findings, lesion distribution, and
64 histopathological outcomes among patients undergoing colonoscopic evaluation. The
65 present study was conducted to evaluate the role of colonoscopy in the assessment of
66 large intestinal diseases, with particular emphasis on identifying the causes of per
67 rectal bleeding, studying benign and malignant disorders of the large intestine, and
68 assessing colonoscopic findings in patients presenting with inflammatory bowel
69 disease and unexplained weight loss.

70 **MATERIALS AND METHODS**

71 This prospective observational study was conducted in the Department of
72 Surgery at Al-Ameen Medical College and Hospital from March 2024 to April 2026.
73 The study included patients undergoing colonoscopy for evaluation of lower
74 gastrointestinal symptoms and suspected colonic pathology.

75 Patients presenting with per rectal bleeding, constipation, chronic diarrhea,
76 weight loss, mucus in stool, occult blood positivity on stool examination, or
77 radiologically detected lower gastrointestinal lesions were considered for inclusion.
78 Participants were recruited from the surgical outpatient department as well as referred
79 cases from other departments.

80 The study population comprised adult patients aged more than 18 years
81 undergoing colonoscopic evaluation during the study period. Inclusion criteria were
82 patients with per rectal bleeding, constipation, chronic diarrhea, weight loss, mucus or
83 occult blood in stool, and radiologically detected lower gastrointestinal lesions.
84 Patients who refused consent, were unfit for colonoscopy, pregnant women,
85 individuals younger than 18 years of age, emergency colonoscopy cases, and
86 immunocompromised patients were excluded from the study. The calculated minimum

87 sample size was 96 participants. A total of 120 patients fulfilling the eligibility criteria
88 were included in the study.

89 Colonoscopy was performed using a Fujinon colonoscope under standard
90 bowel preparation protocols. Disinfectant solutions and biopsy channel forceps were
91 utilized whenever biopsy sampling was indicated. Data were collected prospectively
92 using a structured proforma. Demographic characteristics, clinical presentation,
93 comorbidities, colonoscopic findings, lesion location, histopathological findings, and
94 procedure-related complications were recorded.

95 The collected data were entered into Microsoft Excel and analyzed using
96 Statistical Package for Social Sciences (SPSS) version 26. Continuous variables were
97 expressed as mean \pm standard deviation or median with interquartile range, while
98 categorical variables were presented as frequencies and percentages. Appropriate
99 tables and figures were used for data presentation.

100 RESULTS

101 A total of 120 patients underwent colonoscopic evaluation during the study
102 period. The majority of patients were in the 50–59 years age group (27.5%), followed
103 by 40–49 years (23.3%). Male patients constituted 60% of the study population, while
104 females accounted for 40%. With respect to body mass index, 33.3% had normal
105 BMI, whereas 29.2% were overweight and 25% belonged to obesity class I. Overall,
106 60.8% of participants were either overweight or obese.

107 **Table 1. Baseline Demographic Characteristics of Study Participants (n = 120)**

Variable	Category	Frequency (n)	Percentage (%)
Age Group (years)	18–29	11	9.2
	30–39	19	15.8
	40–49	28	23.3
	50–59	33	27.5
	60–69	15	12.5
	70–79	10	8.3
	80–89	4	3.3
Sex	Male	72	60.0
	Female	48	40.0
WHO BMI Category	Underweight (<18.5)	7	5.8
	Normal weight (18.5–24.9)	40	33.3
	Overweight (25–29.9)	35	29.2
	Obesity Class I (30–34.9)	30	25.0
	Obesity Class II (35–39.9)	7	5.8
	Obesity Class III (\geq 40)	1	0.8

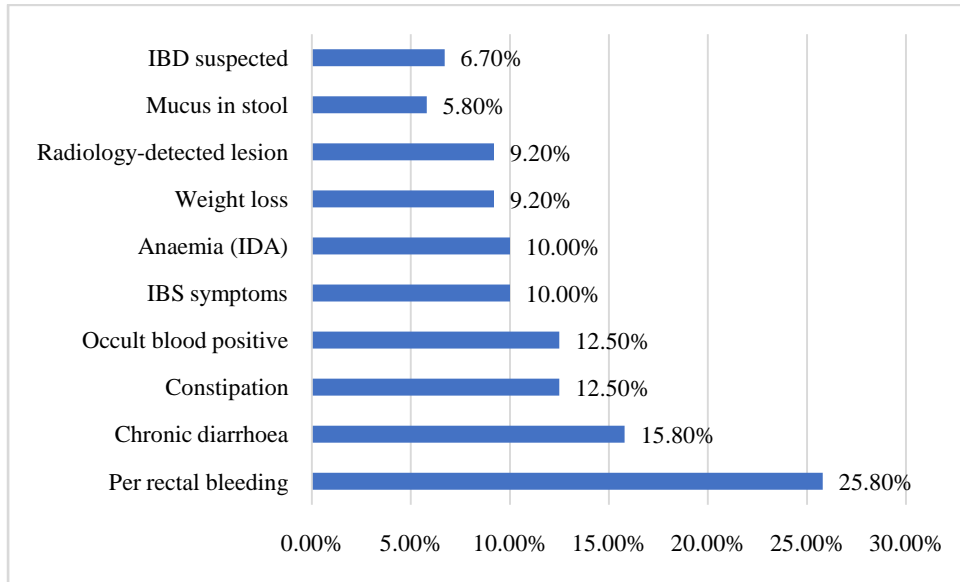
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109 Per rectal bleeding was the most common indication for colonoscopy (25.8%),
110 followed by chronic diarrhea (15.8%). Constipation and occult blood positivity in
111 stool each accounted for 12.5% of cases. Iron deficiency anemia and symptoms
112 suggestive of irritable bowel syndrome were observed in 10% each, while
113 unexplained weight loss and radiologically detected lesions were noted in 9.2% of
114 patients each.

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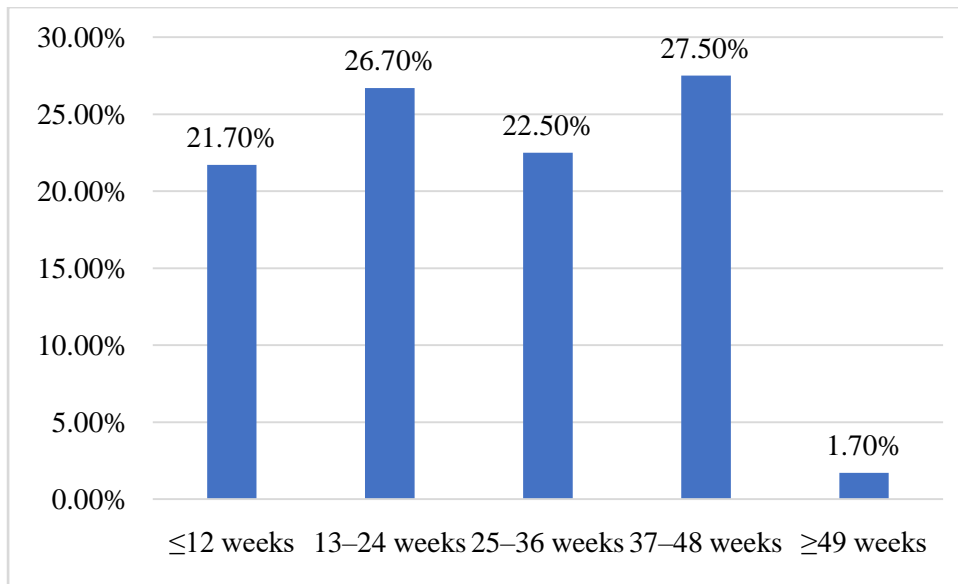
Figure 1: Indications for Procedure



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123 Most patients reported symptoms for 37–48 weeks (27.5%), followed by 13–24 weeks
124 (26.7%) and 25–36 weeks (22.5%). Hypertension (20.8%) and diabetes mellitus
125 (18.3%) were the most common comorbidities, whereas 39.2% of patients had no
126 associated comorbid illness. Normal colonoscopic findings were observed in 32.5% of
127 patients. Among abnormal findings, neoplastic or pre-neoplastic lesions such as
128 polyps and mass lesions were the most common (20.8%), followed by inflammatory
129 conditions (15.8%). Anorectal conditions including hemorrhoids and anal fissures
130 accounted for 10.8%, while structural abnormalities such as diverticulosis and
131 strictures were identified in 9.2% of cases. Inflammatory bowel disease was
132 diagnosed in 6.7% of patients, and vascular lesions were identified in 4.2%.

133 **Figure 2: Symptom Duration (weeks)**



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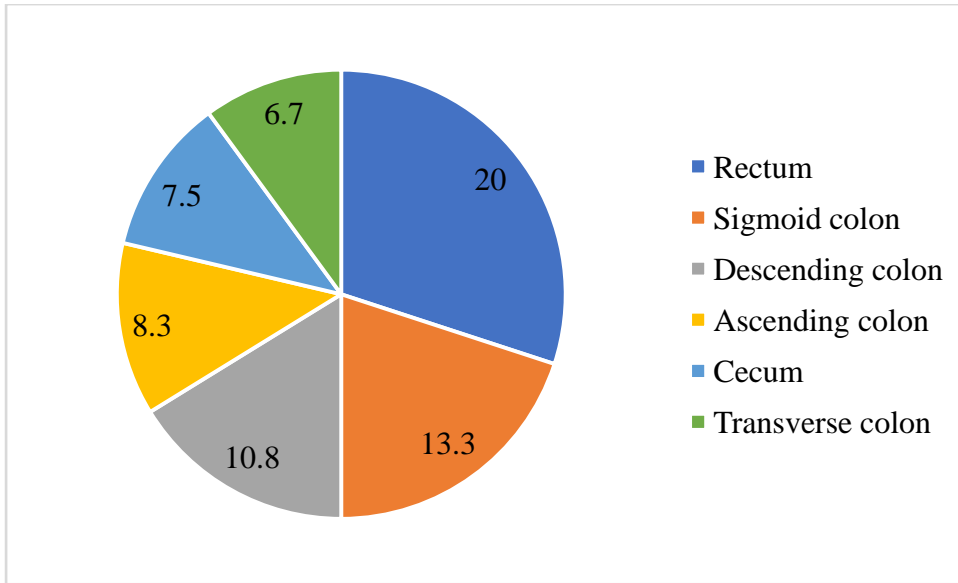
136 **Table 2: Colonoscopy Findings (N = 120)**

Finding Category	Components Included	Frequency (n)	Percent (%)
Normal findings	Normal	39	32.5
Inflammatory conditions	Inflammation, Infectious colitis, Microscopic colitis	19	15.8
Inflammatory bowel disease (IBD)	Crohn's disease, Ulcerative colitis	8	6.7
Neoplastic / pre-neoplastic lesions	Polyps, Mass lesion	25	20.8
Vascular lesions	Angiodysplasia	5	4.2
Structural abnormalities	Diverticulosis, Stricture	11	9.2
Anorectal conditions: Haemorrhoids, Anal fissure		13	10.8
Total		120	100

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138 The rectum was the most commonly involved site (20%), followed by the
 139 sigmoid colon (13.3%) and descending colon (10.8%). No immediate complications
 140 were observed following colonoscopy. Histopathological examination was not
 141 performed in 66.7% of patients. Among biopsied cases, active colitis was the most
 142 common histological diagnosis (7.5%), followed by carcinoma (5.8%) and ulcerative
 143 colitis (5%). Hyperplastic polyps, chronic colitis, infective colitis, tubulovillous
 144 adenoma, and Crohn's disease were less frequently observed.

145 **Figure 3: Lesion Location**



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153 **Table 3: Distribution of Colonoscopic Diagnoses (N = 81)**

Combined Diagnosis	Frequency	Percentage (%)
Polyps – Ascending colon	6	7.4
Polyps – Sigmoid colon	5	6.2
Polyps – Transverse colon	3	3.7
Polyps – Cecum	2	2.5
Polyps – Descending colon	1	1.2
Polyps – Rectum	1	1.2
Inflammation – Descending colon	5	6.2
Inflammation – Sigmoid colon	3	3.7
Inflammation – Rectum	3	3.7
Inflammation – Transverse colon	2	2.5
Inflammation – Ascending colon	2	2.5
Inflammation – Cecum	1	1.2
Diverticulosis – Sigmoid colon	6	7.4
Diverticulosis – Descending colon	2	2.5
Angiodysplasia – Cecum	5	6.2
Mass lesion – Rectum	2	2.5
Mass lesion – Ascending colon	1	1.2
Mass lesion – Descending colon	1	1.2
Mass lesion – Transverse colon	1	1.2
Mass lesion – Cecum	1	1.2
Mass lesion – Sigmoid colon	1	1.2

IBD (Ulcerative colitis) – Rectum	3	3.7
IBD (Ulcerative colitis) – Sigmoid colon	1	1.2
IBD (Ulcerative colitis) – Descending colon	1	1.2
IBD (Ulcerative colitis) – Transverse colon	1	1.2
IBD (Crohn’s disease) – Transverse colon	1	1.2
IBD (Crohn’s disease) – Descending colon	1	1.2
Infectious colitis – Ascending colon	1	1.2
Infectious colitis – Descending colon	1	1.2
Stricture – Rectum	2	2.5
Stricture – Descending colon	1	1.2
Haemorrhoids	11	13.6
Anal fissure	2	2.5
Microscopic colitis	1	1.2
Total	81	100

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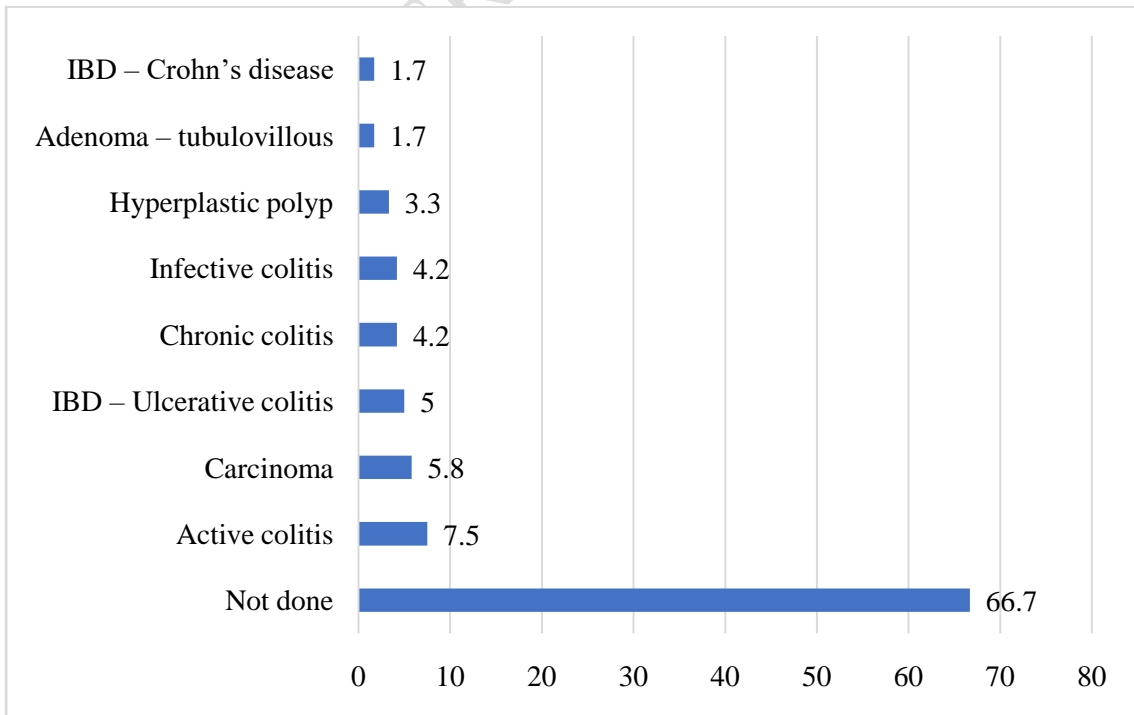
155 Detailed analysis of colonoscopic diagnoses showed that polyps were more
 156 frequently identified in the ascending and sigmoid colon, while inflammatory lesions
 157 commonly involved the descending colon, sigmoid colon, and rectum. Diverticulosis
 158 predominantly affected the sigmoid colon, and angiodysplasia was mainly observed in
 159 the cecum. Hemorrhoids represented the most common anorectal diagnosis (13.6%).

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163 **Figure 4. Histological Findings**



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166 **DISCUSSION**

167 The present prospective observational study evaluated colonoscopic findings
168 in 120 patients presenting with lower gastrointestinal symptoms including per rectal
169 bleeding, chronic diarrhoea, constipation, anaemia, weight loss, and suspected
170 inflammatory bowel disease. Colonoscopy remains the gold standard investigation for
171 evaluation of lower gastrointestinal pathology because it enables direct visualization,
172 tissue biopsy, and therapeutic intervention.

173 In the present study, the majority of patients belonged to the 50–59 years age
174 group, followed by 40–49 years and 30–39 years, indicating that colonoscopic
175 evaluation is more frequently required in middle-aged and elderly individuals. Similar
176 findings were reported by Matkovic et al.⁸, Brand et al.⁹,Haweizy et al.¹⁰ and Nikpour
177 et al.¹¹, who demonstrated increased prevalence of clinically significant colorectal
178 pathology with advancing age.

179 Male predominance was observed in the present study, with males accounting
180 for 60% of participants. Similar observations were reported by Matkovic et al.⁸ and
181 Haweizy et al.¹⁰. Alexandersson et al.¹² also demonstrated higher colonoscopy
182 utilization among males, particularly for colorectal cancer screening and diagnostic
183 evaluation. Assessment of body mass index revealed that overweight and obese
184 individuals constituted the majority of the study population. Gupta et al.¹³ similarly
185 demonstrated a significant association between obesity and colorectal pathology.

186 Per rectal bleeding was the most common indication for colonoscopy in the
187 present study, followed by chronic diarrhoea, constipation, occult blood positivity,
188 and IBS-like symptoms. Similar findings were reported by Matkovic et al.⁸, Brand et
189 al.⁹, and Nikpour et al.¹¹, all of whom identified rectal bleeding as the leading
190 indication for colonoscopic evaluation and emphasized the importance of
191 colonoscopy in detecting significant colorectal lesions.

192 Most patients in the present study reported prolonged symptom duration prior
193 to colonoscopy. Similar findings were noted by Singh et al.¹⁴, Gupta et al.¹³who
194 reported delayed presentation among patients with gastrointestinal complaints and
195 highlighted the importance of early colonoscopic evaluation. Hypertension and
196 diabetes mellitus were the most common comorbidities observed in the present study.
197 Similar observations were reported by Gupta et al.¹³ and Singh et al.¹⁴.

198 Among colonoscopic findings, neoplastic and pre-neoplastic lesions were the
199 most common abnormal findings, followed by inflammatory conditions, inflammatory
200 bowel disease, anorectal disorders, and vascular lesions. Brand et al.⁹ and Nikpour et
201 al.¹¹ reported similar findings, with polyps and colorectal malignancy accounting for
202 a substantial proportion of colonoscopic abnormalities. Haweizy et al.¹⁰ reported
203 inflammatory bowel disease in a comparable proportion of patients. Yu et al.¹⁶ and
204 Aziz et al.¹⁷ further emphasized the role of colonoscopy in diagnosing inflammatory
205 and neoplastic colorectal diseases.

206 In the present study, the rectum and sigmoid colon were the most common
207 sites of lesions. Similar distal predominance of colorectal lesions was reported by
208 Nikpour et al.¹¹ and Brand et al.⁹. Whitlock et al.¹⁸ and Zhang et al.¹⁹ also
209 demonstrated frequent involvement of the distal colon during colonoscopic
210 examinations. However, Yu et al.¹⁶ emphasized the importance of complete
211 colonoscopy because proximal lesions may be missed with limited sigmoidoscopy.

212 No immediate complications were observed in the present study,
213 demonstrating the safety of colonoscopy when performed under standard clinical
214 conditions. Similar findings were reported by Singh et al.¹⁴, Gupta et al.¹³, Sharma et
215 al.²⁰, and Kumar et al.²¹, all of whom confirmed that diagnostic colonoscopy is a safe
216 and well-tolerated procedure with a very low complication rate.

217 Histopathological examination most commonly revealed active colitis,
218 followed by carcinoma, ulcerative colitis, and chronic colitis. Haweizy et al.¹⁰ and Yu
219 et al.¹⁶ similarly highlighted the importance of colonoscopic biopsy in confirming
220 inflammatory bowel disease and identifying dysplastic or malignant lesions. Qu et
221 al.²² demonstrated the significance of adenomatous polyps in the adenoma–carcinoma
222 sequence.

223 Polyps in the present study were commonly identified in the ascending and
224 sigmoid colon, while diverticulosis predominantly involved the sigmoid colon and
225 angiodysplasia commonly affected the cecum. Similar findings were reported by
226 Gupta et al.¹³, Singh et al.¹⁴, Sharma et al.³⁷, and Kumar et al.²¹, who described
227 comparable distribution patterns of colorectal lesions and anorectal disorders.

228 **LIMITATIONS**

229 The present study was conducted at a single tertiary care center with a
230 relatively small sample size, which may limit the generalizability of the findings.
231 Histopathological examination was performed only in selected patients with
232 suspicious lesions, limiting complete pathological correlation in all cases. In addition,
233 long-term follow-up and assessment of lifestyle-related risk factors such as diet,
234 smoking, alcohol consumption, and family history were not included in the study.

235 **RECOMMENDATIONS**

236 Early colonoscopic evaluation should be encouraged in patients presenting
237 with persistent lower gastrointestinal symptoms such as per rectal bleeding, chronic
238 diarrhea, constipation, unexplained anemia, and weight loss. Screening colonoscopy
239 may be considered in high-risk individuals, particularly those above 50 years of age.
240 Histopathological examination should be performed whenever suspicious lesions are
241 identified. Further large-scale multicentric studies with long-term follow-up are
242 recommended to better evaluate the epidemiology and outcomes of colorectal
243 diseases.

244 **CONCLUSION**

245 The present study demonstrates that colonoscopy is a safe and effective
246 diagnostic modality for the evaluation of colonic diseases. Per rectal bleeding was the
247 most common indication for colonoscopy, while neoplastic, inflammatory, and
248 anorectal lesions constituted the most frequent abnormalities detected. The rectum
249 and sigmoid colon were the most commonly involved sites. Histopathological
250 examination aided in confirming inflammatory and malignant lesions in selected
251 cases. No immediate complications were observed, emphasizing the safety and
252 diagnostic utility of colonoscopy in the evaluation and management of colorectal
253 diseases.

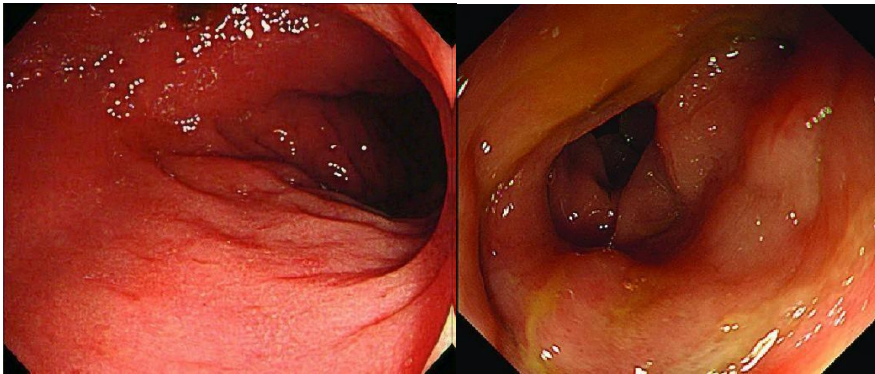


Polypin ascendingcolon



Angiodysplasiaofcecum

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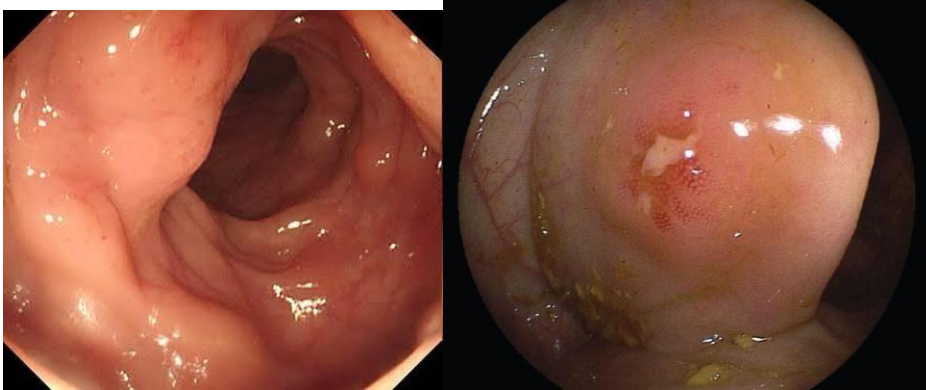


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Inflammationofdescendingcolon

Diverticulosisofsigmoidcolon

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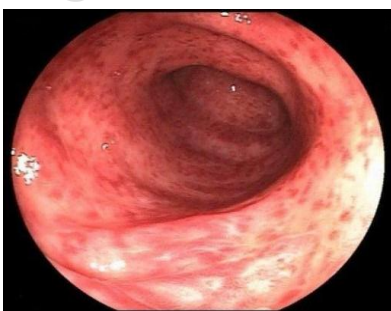


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Mass lesion in rectum

Crohn'sdiseasedescendingcolon

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Ulcerativecolitisofdescendingcolon

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