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RESEARCH ARTICLE

“ASSESSMENT OF COLONOSCOPIC FINDINGS IN PATIENTS PRESENTING WITH LOWER GASTROINTESTINAL SYMPTOMS”

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Colonoscopy, Colonic diseases, Per rectal bleeding, Inflammatory bowel disease, Colorectal lesions, Colonoscopic findings, Large intestine.

Abstract

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

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

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

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

Results: The majority of patients belonged to the 50–59 years age group (27.5%), with males constituting 60% of the study population. Overweight and obesity were observed in 60.8% of participants. Per rectal bleeding was the most common indication for colonoscopy (25.8%), followed by chronic diarrhea (15.8%).

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Colonoscopy revealed normal findings in 32.5% of patients, while abnormal findings included neoplastic or pre-neoplastic lesions (20.8%), inflammatory conditions (15.8%), and anorectal disorders (10.8%). The rectum was the most frequently involved site (20%), followed by the sigmoid colon (13.3%). Histopathological examination was

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performed in 33.3% of cases, with active colitis (7.5%), carcinoma (5.8%), and ulcerative colitis (5%) being the most common diagnoses. No immediate complications were observed following colonoscopy.

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

Introduction:-

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

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

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

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

Materials and Methods:-

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

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

The study population comprised adult patients aged more than 18 years undergoing colonoscopic evaluation during the study period. Inclusion criteria were patients with per rectal bleeding, constipation, chronic diarrhea, weight loss, mucus or occult blood in stool, and radiologically detected lower gastrointestinal lesions. Patients who refused consent, were unfit for colonoscopy, pregnant women, individuals younger than 18 years of age, emergency colonoscopy cases, and immunocompromised patients were excluded from the study. The calculated minimum sample size was 96 participants. A total of 120 patients fulfilling the eligibility criteria were included in the study.

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

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

Results:-

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

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 (≥40)	1	0.8

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

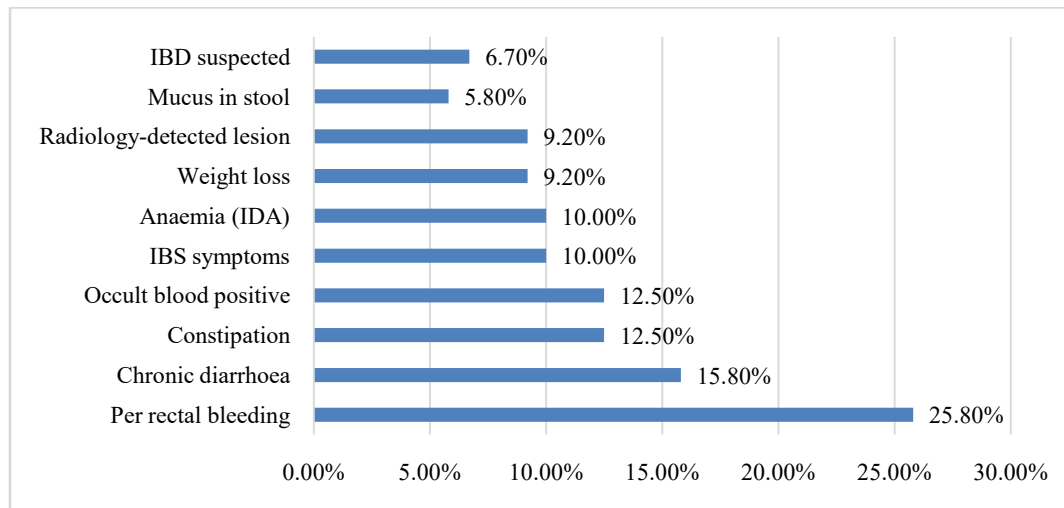


Figure 1: Indications for Procedure

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

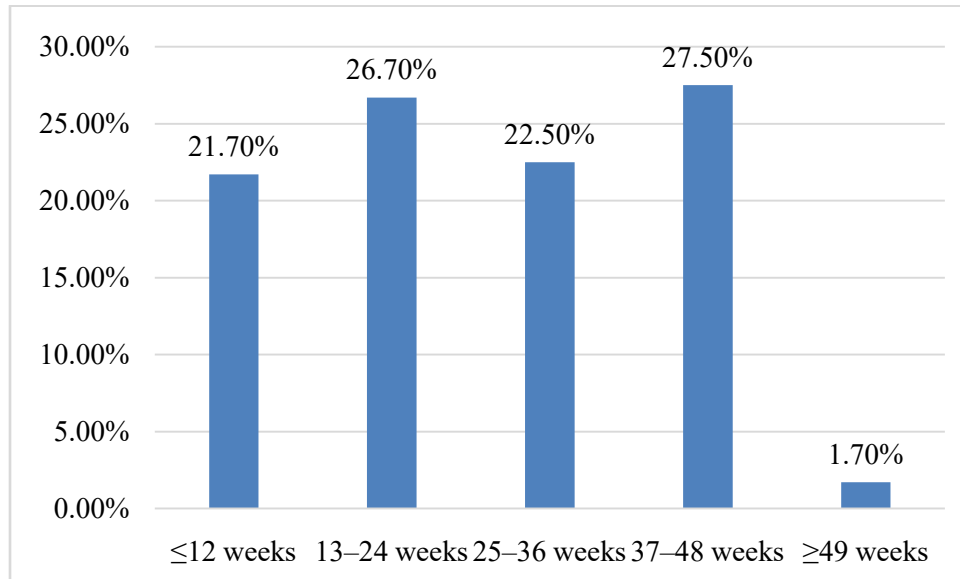


Figure 2: Symptom Duration (weeks)

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

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

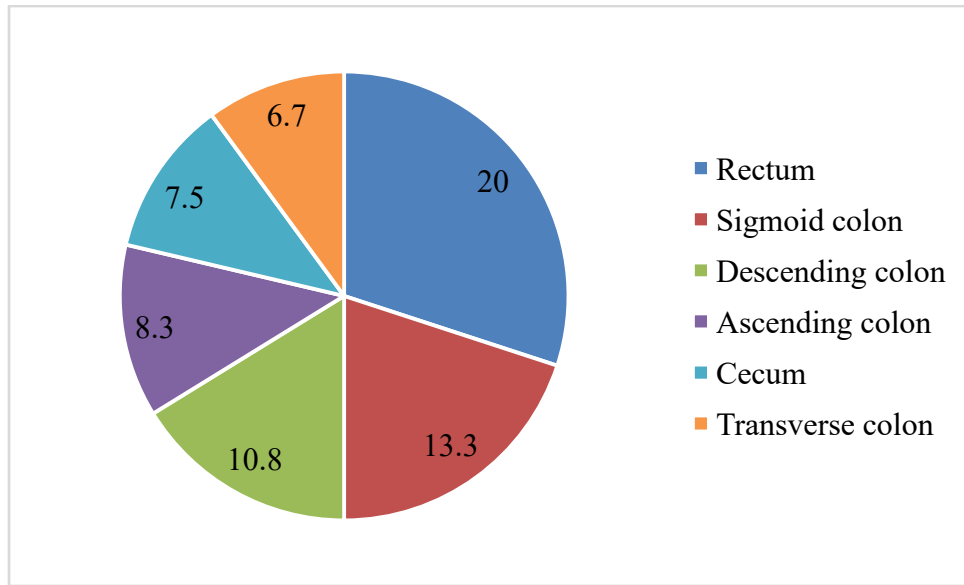


Figure 3: Lesion Location

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

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

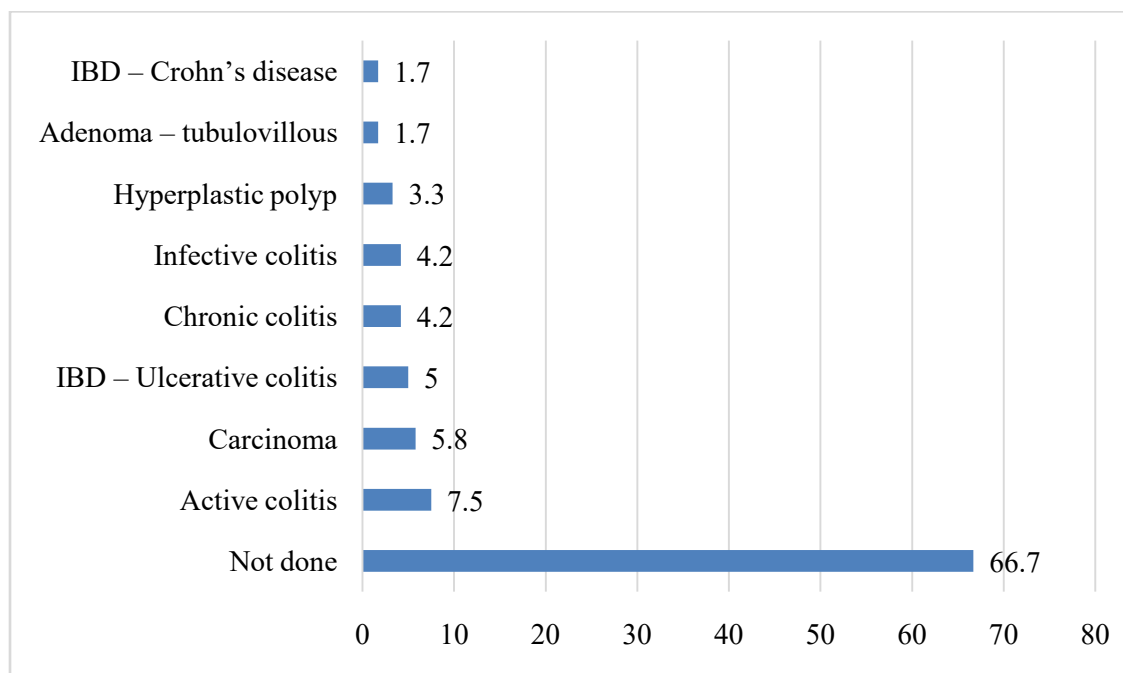


Figure 4. Histological Findings

Discussion:-

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

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

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

Per rectal bleeding was the most common indication for colonoscopy in the present study, followed by chronic diarrhoea, constipation, occult blood positivity, and IBS-like symptoms. Similar findings were reported by Matkovic

et al.⁸, Brand et al.⁹, and Nikpour et al.¹¹, all of whom identified rectal bleeding as the leading indication for colonoscopic evaluation and emphasized the importance of colonoscopy in detecting significant colorectal lesions.

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

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

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

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

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

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

Limitations:-

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

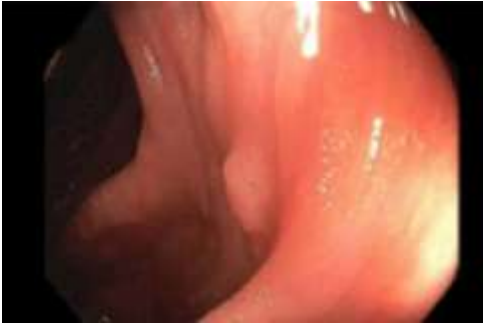
Recommendations:-

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

Conclusion:-

The present study demonstrates that colonoscopy is a safe and effective diagnostic modality for the evaluation of colonic diseases. Per rectal bleeding was the most common indication for colonoscopy, while neoplastic, inflammatory, and anorectal lesions constituted the most frequent abnormalities detected. The rectum and sigmoid

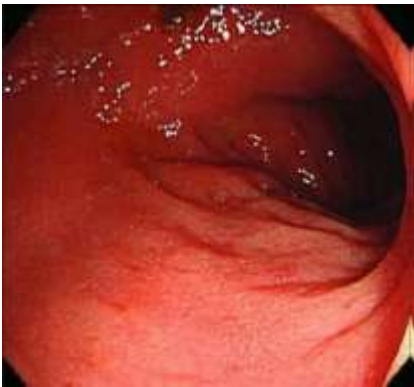
colon were the most commonly involved sites. Histopathological examination aided in confirming inflammatory and malignant lesions in selected cases. No immediate complications were observed, emphasizing the safety and diagnostic utility of colonoscopy in the evaluation and management of colorectal diseases.



Polypin ascending colon



Angiodysplasia of cecum



Inflammation of descending colon



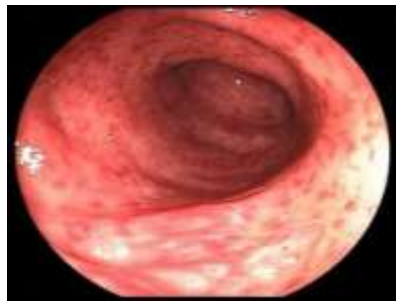
Diverticulosis of sigmoid colon



Mass lesion in rectum



Crohn's disease descending colon



Ulcerative colitis of descending colon

Declarations:-**Conflict Of Interest:** Nil**Source of Support:** Nil**Consent:** The authors confirm that written informed consent for publication of clinical details and accompanying images was obtained from the patient.**Ethical approval:** The study was approved by Institutional Ethics Committee of Al-Ameen Medical College, Vijayapura.**References:-**

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