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Clinical Profile and Endoscopic Findings in Patients undergoing Colonoscopy at a Tertiary Care Centre of Western Nepal

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ABSTRACT

Background: Colonoscopy is an invasive procedure used for both diagnostic and therapeutic purpose for detection and management of the diseases of rectum, colon, and terminal ileum. This study was undertaken to assess the clinical profile and endoscopic findings in patients undergoing colonoscopy.

Methods: One hundred and sixty patients underwent colonoscopy from January 2018 till December 2019. Clinical profile, endoscopy and histological findings were studied after obtaining ethical clearance rom Institutional Review Committee and informed consent from the patient or patient relatives. Data entry was done in Statistical Packages for the Social Sciences version 20

Results: The commonest indications for performing colonoscopy were chronic diarrhea, altered bowel habits, chronic abdominal pain and bleeding per rectum. Colitis of unspecified etiology followed by ulcerative colitis and polyps were the common colonoscopy findings. Colorectal carcinoma were not uncommon.

Conclusions: Colonoscopy is the gold standard modality for diagnosis of pathologies of lower gastro intestinal tract and should be an integral part of management. Screening colonoscopy is strongly recommended.

Keywords: colitis; colonoscopy; colorectal disease.

INTRODUCTION

Colonoscopy is an invasive procedure used for both diagnostic and therapeutic purpose for detection and management of the diseases of rectum, colon, and terminal ileum.[1] Direct visualization makes it investigation of choice for colonic pathology. Indications for performing colonoscopy include screening or surveillance for colon cancer, evaluating colonic or terminal ileum pathologies, whereas, and indications for therapeutic intervention include polypectomy, stricture dilation, stent placement, colonic decompression and foreign body removal. Polypectomy during colonoscopy has been shown to decrease the incidence of colorectal cancer and associated mortality.[2] Mucosal biopsy for diagnostic purpose and minimal invasive therapeutic procedure can be done during the procedure. Patients with occult gastro intestinal (GI) bleed require colonoscopy to exclude pathologies of lower GI tract. Patients who are not good candidates for colonoscopy can be evaluated using CT colonography.[3] The decision to perform colonoscopy should take into account the indication and contraindication for the procedure, the risks of the procedure, and the cost.[4]

Despite its advantages, colonoscopy is not a routine performed tool. Due to unavailability of instruments, skilled manpower and itself being a discomfortable , invasive procedure, many of the patients do not undergo colonoscopy even when indicated. The procedure also requires sedation, which even limits its use.[5] In country like Nepal, colonoscopy is still being done for diagnostic purpose. Screening colonoscopy of patients aged > 50 years is still not in regular practice Very limited studies are available in this part of the country. Considering above facts this study was designed to study the clinical profiles and endoscopic finding of the patient undergoing colonoscopy in a tertiary care center at Pokhara, Gandaki Province, Nepal .

METHODS

This descriptive, cross sectional hospital based study was carried out in the unit of Medical gastroenterology under Medicine department at Manipal College of Medical Sciences and Teaching Hospital, Nepal from January 2018 to December 2019, duration of 24 months. Cases were studied from record of endoscopy unit and departmental record of admission and discharge summaries. All patients who underwent colonoscopy were enrolled in the study. History, physical examination and data considering demographic variables, clinical features, symptoms

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and indications for colonoscopy were noted. After taking proper consent, bowel preparation and pre medications, colonoscopy was performed. Bowel preparation was done using 2 liters of Poly Ethylene Glycol given 8 hours prior to procedure and patient kept on liquid diet from 24 hours prior to procedure. During procedure patient was laid on left lateral position, intravenous Hyoscine butyl bromide was given. Per-rectal examination was done following which each patient had undergone endoscopic investigation by standard flexible colonoscope (PENTAX EPK 700, PENTAX JAPAN Inc).

Colonoscopy findings were noted and biopsy of tissue were sent when relevant . All patients who performed colonoscopy during the study period and aged above 16 irrespective of sex and presentation were included in the study. Patients with incomplete records were excluded from the study. The study was approved and verified by the Institutional Review Committee (MEMG/IRC/292/GA) and the work was carried out following the rules and regulations laid down by the Institutional Review Committee. Informed consent was obtained from patients or patient relatives.

Data were collected covering the relevant parameters for the study. All categorical data were expressed in percent and absolute number. All numerical continuous data was expressed in mean ±SD. The data analysis was done using Statistical Packages for the Social Sciences (SPSS) 20.

RESULTS

A total of 174 patients underwent colonoscopy between January 2018 till December 2019. But 14 patients had to be excluded because of inadequate data. Finally a total of 160 patients that comprised of 96 (60%) male and 64 (40%) female were taken up for the study. Emergent colonoscopy were performed in only 6 cases and they all had frank active rectal bleeding. All other cases had planned elective colonoscopy as per appointments. The mean age of subjects was 54±11.84 years with a range of 22 – 88 years of age. Patients were further classified as per sex and age groups with maximum cases in 40-59 years of age group (Table 1).

Table 1. Age groups/sex distribution of patients.

Age Group	Sex	
	Male	Female
<40	28 (29.17)	9 (14.06)
40-59	44 (45.83)	33 (51.56)
60-79	18 (18.75)	17 (26.56)
≥80	6 (6.25)	5 (7.81)

Chronic diarrhea, abdominal pain, blood mixed stools and rectal bleeding were the most common indication for colonoscopy The others indications were as in (Table 2). Six patients had to undergo emergent colonoscopy. All these patients presented with ongoing lower gastrointestinal bleed and hypotension (systolic BP < 90 mmHg). All patients were haemodynamically stabilized with blood transfusion (average of 2.5 units and maximum of 6 unit) before colonoscopy. Complete colonoscopy with visualization of terminal ileum could be performed in only 140 (87.5%) patients. Terminal ileum could not be intubated in 12 patients. Scope could not be negotiated beyond hepatic flexure in another subset of 8 patients. The location of the lesions and the relative frequency (Figure 1).

Table 2. Indications of colonoscopy.

Indication	Frequency	Percentage
Chronic diarrhea	31	19.4
Altered bowel habits	10	6.25
Chronic constipation	13	8.12
Chronic abdominal pain	28	17.5
Rectal bleeding	12	7.5
Blood mixed stools	22	13.75
Stool for occult blood positive	12	7.5
Anemia of unknown origin	10	6.25
Hemorrhoids / mass per rectum on proctoscopy	16	10
Screening colonoscopy	6	3.75

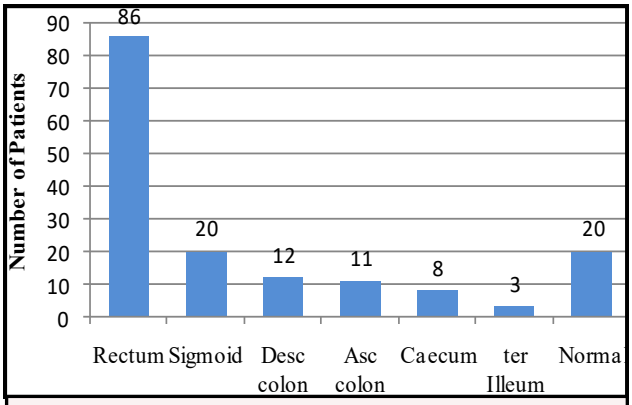

Figure 1. Sites of colonic pathology on colonoscopy among 160 participants.

Rectal erosions, ulcers and hemorrhoids were the most common findings in colonoscopy. These were followed by polyps, growth and mass encroaching lumen followed by strictures and diverticulum of the patients. Twenty patients reveal normal colonoscopy. Polypectomy was done in 10 patients with large solitary polyp. For multiple small polyps, biopsy were taken and sent for histopathology. Ten of the patients with hemorrhoids had concomitant malignant like appearing mass or growth within the colon. The most common histological findings of colonic pathologies were non specific colitis with no dysplasia followed by ulcerative colitis. The final diagnosis of the patients under study after colonoscopy and histological diagnosis were as in (Table 3).

Non specific colitis seen in 36 biopsies was the most common histological finding. Colitis was more common in males (M: F =3:2) with mean age of 34±7.25 years. Rectum was the most common site of involvement and was seen in more than 2/3rd of cases followed by sigmoid colon and caecum. Isolated illeal erosions were seen in 3 patients. Chronic diarrhea seen in 24 (66%) and pain abdomen seen in 16 (44%) were the most common complaints in these patients with histology of non specific colitis. Inflammatory bowel disease was the second most important colonic pathology and was seen in 33 (20.6%) patients.

Table 3. Final diagnosis of patients after colonoscopy and histology. (n=160)

Colonic Pathologies	Patients	Percentage
Ulcerative colitis	30	18.75
Crohns disease	3	1.87
Ileo cecal Tuberculosis	3	1.87
Carcinoma rectum	12	7.5
Carcinoma colon	6	3.75
Hemorrhoids	24	15
Polyps	20	12.5
Diverticulum	6	3.75
Non specific colitis	36	22.5
No abnormal findings	20	12.5

Mean age at presentation was 37±9.25 years with slight female predominance (M:F =5:6). About 75% of the cases were identified in age group below 40 years of age. Thirty patients had ulcerative colitis. Ulcerative colitis was 10 times more common than Crohns disease. The most common site for ulcerative colitis was seen in recto sigmoid in 25 out of 33 (75.8%). Pan colitis was observed in 10 (30.3%) patients. Blood mixed with stools in 27(90%) and rectal bleeding in 15 (50%) followed by chronic diarrhea in 14 (47%) and chronic abdominal pain in 12(40%) were the most common complaints in patients with ulcerative colitis. Three patients who underwent emergent colonoscopies were identified with severe pan colitis and histogically proven ulcerative colitis. Crohn's disease was seen in only 3 patients; all male. They were observed in patients with ages of 27, 31 and 42 years of age. All these patients had complaints of chronic abdominal pain and weight loss. Hemorrhoids were seen in 24 (15%) patients. Majority (60%) of the hemorrhoids were of Grades I/II. They were seen at mean age of 37±8.28 with male predominance (M: F=3:2).

About 2/3rd of the cases were identified in age group below 40 years of age. Concomitant colonic growth or mass were seen in 10 patients with hemorrhoids of Grade II/ III. Twenty two (92 %) patients with hemorrhoids had history of bleeding per rectum at the end of defecation. All patients with hemorrhoids gave history of chronic constipation. Polyps were the common findings and seen in 20(12.5%) patients. Mean age of these patients was 47±7.37 with male predominance (M:F=3:1). Rectum was the most common site for polyp and was seen in 12 (60%) patients . Multiple small sessile polyps in the recto sigmoid were seen in about 1/3rd of cases. Polyposis of colon involving recto sigmoid and also involving other parts of the colon were observed in 8(40%) patients. Three patients had 2 large pedunculated polyps, 5 had single pedunculated polyp, which were removed by polypectomy.

Histology of majority of these polyps had no malignant potential. Three of the rectal polyp had adenomatous polyp with severe dysplasia and only 1 had adenocarcinoma. Only 6 (30%) patients had history of lower gastro intestinal bleed. Among patients who underwent emergent colonoscopy for bleeding per rectum , one patient had 2 large rectal polyps. Haemostatic was achieved after snare polypectomy. Only 8 (40%) patients with polyps had history of bleeding per rectum. Carcinoma of colon was seen in 19 (11.9%) patients. Mean age of presentation was 65±11.53 with male predominance (M:F=3:1). Twelve (63.2%) patients were aged between 60 -79 years of age. Four cases were aged below 40. The youngest patient with colon carcinoma was a 32 year male. All cases were adenocarcinoma. Rectal carcinoma was the commonest seen in 6 (31.6%) patients followed by carcinoma of sigmoid in 4(21.1%) and ascending colon in 39(15.8%) patients. About 2/3rd (12 out of 19) of colonic carcinoma were left sided. Blood mixed stool and weight loss were the main complaint and described by all the patients. Chronic abdominal pain and altered bowel habits were described by almost half of these patients. Two of these patients had active fresh bleeding per rectum and had undergone emergent colonoscopy. Biopsies from diverticulum were of normal or benign histology. Ileo-caecal Tuberculosis were seen in 3 patients

DISCUSSION

In the 1960s, William Wolff and Hiromi Shinya developed a way to probe the full length of the colon using a tube with electronic sensors.[6] Colonoscopy has become a very popular method for screening of colorectal polyps and cancers; and for treating a variety of conditions of the lower gastrointestinal (GI) tract. American College of Gastroenterology recommends colonoscopy every 10 years, beginning at 50 years of age for screening of colorectal polyp and carcinoma.[7] Patients should be offered an alternative CRC prevention test (flexible sigmoidoscopy every 5-10 years, or a computed tomography (CT) colonography every 5 years) or a cancer detection test (fecal immunochemical test for blood, FIT) when patients refuse colonoscopy.[7] Patient

undergoing colonoscopy in this study were predominantly males (M: F = 3:2). Various colonoscopy studies have reported male predominance. Studies by Salamat et al.,[8] in Rawalpindi, Pakistan, Dinesh et al.,[9] in Mysore, India, Ngim et al.,[10] in Nigeria have demonstrated male predominance amongst colonoscopy patients. Similar male predominance have also been observed in studies by Shrestha et al.,[11] and Chaudhary et al.,[12] in Nepal. Less opting for colonoscopy in females could be due to social factors , lack of education ,feel of discomfort and embarrassment in telling to family members and physicians regarding ano-rectal pathology and carrying out the procedure itself. Mean age of patient who underwent colonoscopy were 46.9 years ,43.5 years and 56.4 years respectively by Osinowo et al.,[13] and Ismaila et al.,[14] and Arigbabu et al.,[15] in three different centers in Nigeria. Mean ages of 60.6 years and 50 years respectively were recorded in studies done by Plummer et al.,[16] in Jamaica , and by Salamat et al., [8] in Pakistan. The mean age of the patient appearing for colonoscopy was 45.23 and 46.98 years by Chaudhary et al.,[12] and Shrestha et al.,[11] in Nepal respectively. The mean age of patient undergoing colonoscopy was 54±11.84 years in the present study which is a bit higher than its preceding studies in Nepal.

Rectal bleeding, chronic diarrhea and chronic abdominal pain were common indication for colonoscopy in studies by Salamat et al.,[8,] Ngimet al.,[10] Osinowo et al.,[13] and Plummer et al.,[16] In a study by Wang et al.,[17] in a tertiary hospital in America, the commonest indication was screening for colorectal polyp and carcinoma. The most common indication was bleeding per rectum and was observed in 37.9% patients in the study by Dinesh et al.,[9] in India.

The commonest indications for performing elective colonoscopy were chronic diarrhea , altered bowel habits , chronic abdominal pain and bleeding per rectum in the present study. Similar were the findings in the Nepalese study by Shrestha et al.[11] Chronic diarrhea and chronic abdominal pain were two common indications for undergoing colonoscopy in the study by Shrestha et al.[11] Unlike the study in America, where screening colonoscopy was the commonest indication , this was the least common indication in our present study. In comparative study done in China and USA by Wang et al.[17] common finding were polyps both in China and USA followed by colitis. In the study in Pakistan by Salamat et al.,[8] inflammatory bowel disease was dominant colonoscopy finding. Hemorrhoids were the most common lesion found on colonoscopy and was observed in 23% patients in the Indian study by Dinesh et al.[9]

The commonest endoscopic finding in the studies by Shrestha et al.,[11] in Eastern Nepal and Chaudhary et al.,[12] in Western Nepal were colitis of unspecified etiology, followed by ulcerative colitis. Similar were the findings in our present study. Non specific colitis seen in 22.5% followed by ulcerative colitis seen in 18.75% were the most common finding among the patients who underwent colonoscopy in our present study. In a study by Sood et al.[18], left sided ulcerative colitis was common followed by pan colitis and recto-sigmoid. Pan-ulcerative colitis was dominant followed by recto-sigmoid, left sided and right sided ulcerative colitis in the study by Shrestha et al.[11] Recto-sigmoid was the most common site of involvement and was seen in 25 out of 33 (75.8 %) patients of ulcerative colitis in our current study. Pan colitis was observed in 30.3% patients with ulcerative colitis. Polyps were diagnosed in 4.55 % of patients and rectal polyp was present in half of the patient in the study by Shrestha et al.[11] Polyps were seen in 20 (12.5%) patients in our present study. Rectum was the most common site. Multiple small sessile polyps in the recto sigmoid were seen in about 1/3 rd of cases .

Histology of majority of these polyps had no malignant potential. In the study by Makaju et al.,[19] in Dhulikhel, Nepal , rectal polyp with non malignant potential were the common findings among polyps. Out of a total of 580 patients, 43 (7.4%) had colon carcinoma, mostly arising from the recto sigmoid area in the study by Dinesh et al.[9] Carcinoma of colon was seen in 19 (11.9%) patients in the current study with mean age of 65±11.53 years. Four cases were aged below 40 years of age. Rectal carcinoma was the most common lower gastrointestinal malignancy followed by carcinoma of ascending colon in both the studies by Shrestha et al.,[11] and Chaudhary et al.,[12] respectively. Similar were the findings in our present study. Rectal carcinoma accounted to 31.6% among lower GI cancers in our study. This was followed by carcinoma of sigmoid and ascending colon. About 2/3rd of colonic carcinoma were left sided in our current study. In the study by Dinesh et al.,[9] 95.3% subjects had adeno carcinoma. However all colonic carcinoma were histologically adeno carcinoma in the current study.

Colonoscopy, preferably under anesthesia and cardiac monitoring , should be offered to the patients with lower gastro intestinal tract symptoms. When clinically indicated for colonoscopy, they should be referred to higher centers if facilities are not available at the primary health care centers. Patients should have the

benefits of polypectomy followed by histopathology in detection of colonic polyps. Screening colonoscopy for colorectal carcinoma and polyp every 10 years, beginning at age of 50 years is strongly recommended. Patients should be offered an alternative CRC prevention test (flexible sigmoidoscopy every 5-10 years, or a computed tomography (CT) colonography every 5 years) or a cancer detection test (fecal immunochemical test for blood, FIT) when patients refuse colonoscopy.

This study has some limitations. It reflects to a certain geographical area. Sample size was small. Due to lack of sedation, ileo-caecal intubation was not possible in a minority of cases. This was primarily due to patient refusal for further negotiation of the scope due to abdominal pain, discomfort and distension.

CONCLUSIONS

In this study chronic diarrhea ,chronic abdominal pain and bleeding per rectum were the common indications for colonoscopy. Colitis of unspecified etiology followed by ulcerative colitis and polyps were the common colonoscopy findings. Patients comply for colonoscopy or present late when their disease are usually locally advanced. Colorectal polyp and carcinoma were not uncommon findings especially in age group of 40 to 70 years of age. Screening colonoscopy is still not in practice even in major big cities and tertiary care Teaching Hospitals in Nepal.

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