

ROLE OF COLONOSCOPY IN DIAGNOSIS OF COLORECTAL PATHOLOGIES : A STUDY IN A TERTIARY CARE CENTRE OF BUNDELKHAND REGION

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ABSTRACT

This paper evaluate colonoscopy in diagnosing different intestinal pathologies in the patients presenting with lower gastrointestinal tract symptoms. Total 76 patients with symptoms of lower GIT pathology were selected and further evaluated by colonoscopy. Biopsies were taken from lesions seen in colonoscopic examination. The final diagnosis was made after histopathological report. Colonoscopy findings showed pathologies in 50 cases while 26 cases showed no pathology. Majority of lesions were inflammatory (18 cases), then followed by colorectal carcinoma (11 cases), ulcerative colitis (8 cases), polyp (6 cases), solitary rectal cancer (4 cases) and Crohn's disease (3 case). Early diagnosis of carcinoma confirmed by biopsy and later surgery. Majority of patients (86.85%) showed no complications due to colonoscopy procedure. Colonoscopy is very useful in surveillance of high risk patients for colorectal carcinoma and long-standing cases of inflammatory bowel disease.

KEYWORDS: Colonoscopy, Screening, Colorectal Cancer, Polyp

Pathology of colon and rectum is better evaluated by sigmoidoscopy and colonoscopy. Colonoscopy is a highly sensitive and specific test. Colonic diseases produce characteristic colonoscopic findings. Colonoscopy is relatively safe with very rare incidence of serious complications like perforation, haemorrhage, cardiopulmonary arrest or sepsis. (Cappell MS, Friedel D 2002) Main advantage of colonoscopy is that it allows for intervention, since biopsies can be taken and polyps removed. Screening for colorectal carcinoma is also an indication. Because majority of colorectal cancer evolve through the growth of polypoidal adenoma over time. (Vogelstein B et al 1988) Now prevention of colorectal cancer can be done by early detection and removal of polypoid neoplasms. (Winawer SJ et al 1993) So Proper screening can help reduce mortality rates at all ages.

Objective of this study was to evaluate the role of colonoscopy to diagnose different colorectal pathological lesions in patients presenting with lower gastrointestinal (GIT) symptoms.

MATERIALS AND METHODS

This prospective observational study was carried out in Department of Surgery, MLB Medical College, Jhansi. Duration of study was one year from Nov 2012 to Oct 2013. Total 76 patients with symptoms of lower GIT pathology were selected and further evaluated by colonoscopy (Endoscope Video Processor, Smarteye-S model manufactured by Mitra). After taking detailed

informed consent, standard colon preparation was accomplished i.e. 4 litre polyethylene glycol solution.

Antibiotics prophylaxis had been given to patients with past history of endocarditis (2 cases in our study). Colonoscopy was performed by giving Tramadol intravenously and Diazepam and Tramadol had been used in anxious and apprehensive patients. During colonoscopy, biopsies were taken when any lesions detected. The final diagnosis was made after evaluating histopathology report.

RESULTS

Colonoscopy was performed in total 76 patients. Age of the patients varied from 11 to 70 yrs. 52 patients were male (68.42%) while 24 females (31.58%). Indications for colonoscopy were these symptoms/presentations in descending order i.e. Per-rectal bleeding, diarrhoea, iron deficiency anaemia of unknown aetiology, evaluation of known case of inflammatory bowel disease (IBD), surveillance for malignancy (in persons with positive family history) and altered bowel habits. (Table,1)

Colonoscopy findings showed pathologies in 50 cases, while 26 cases showed no pathology (Figure-1). Biopsies had been taken from lesions in 34 cases and sent for histopathological examination. After evaluation of all lesions, on the basis of colonoscopy findings and histopathological reports, we found majority of lesions were inflammatory (18 cases), then followed by colorectal carcinoma (11 cases), ulcerative colitis (8 cases), polyp (6 cases), solitary rectal cancer (4 cases) and Crohn's disease (3 case). (Table,2)

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Table 1: Indications for colonoscopy

Sl. No.	Indications	No. of patients	(%)
1	Per rectal bleeding	29	38.16
2	Altered bowel habits	14	18.42
3	Iron deficiency anaemia of unknown aetiology	11	14.45
4	Chronic diarrhoea	09	11.85
5	Evaluation of known case of inflammatory bowel disease	07	09.22
6	Surveillance for malignancy	06	07.90

Table 2: Pathologies found inn the patients

Sl. No	Pathological diagnosis	No. of cases	(%)
1	No pathology	26	34.21
2	Inflammation	18	23.68
3	Colorectal Carcinoma	11	14.47
4	Ulcerative colitis	08	10.53
5	Polyp	06	07.89
6	Solitary rectal ulcer	04	05.26
7	Crohn’s disease	03	03.95
Total		76	100

There were no complications of procedure in majority of patients (86.85%) while abdominal pain and distension was most common complication after colonoscopy (07.89%), which relieved spontaneously within 1-2 hour after passing flatus. In one patient distension was severe and required admission for 24 hr with nasogastric decompression. Bleeding after minor traumatic injury occurred in three patients (03.95%), which was managed conservatively. (Table,3)

Table 3: Complications of colonoscopy procedure

Sl. No.	Complication	No. of cases	(%)
1	No complication	66	86.85
2	Abdominal pain & distension	06	07.89
3	Bleeding	03	03.95
4	Bacteraemia	01	01.31
Total		76	100

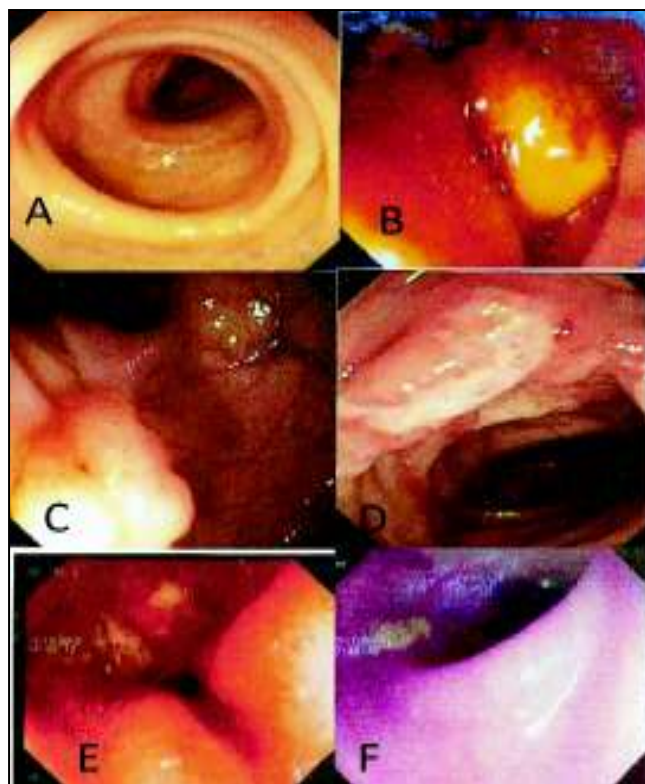


Figure 1: Colonoscopic findings of (A) Normal Colon (B) Carcinoma colon (C) Rectal polyp (D) Crohn’s disease (E) Ulcerative Colitis (F) Solitary rectal ulcer

DISCUSSION

Colonoscopy is an established procedure for screening of patients with lower gastrointestinal (GIT) symptoms. Colonoscopy is very useful for direct mucosal inspection of the entire colon. Lower gastrointestinal bleeding may reflect serious pathology of colon. Colonoscopy is generally accepted as the diagnostic procedure of choice (Fernandez E et al 1996)

Fernandez E et al also conducted similar study with 457 colostomies in patients with lower GIT bleeding and found 32% cases without any pathology, followed by polyps (25.1%), diverticular disease (24%), neoplasia (12.6%), inflammatory bowel disease (9.4%) infectious colitis (1.1%). (Fernandez E et al 1996)

While in our study non-specific inflammation was the most frequent pathology (23.68%) encountered. In this region infective diarrhoea is still common. Malignancy was seen in 14.47% of cases followed by ulcerative colitis (10.53%), polyp (7.89%) solitary ulcer (5.26%), and Crohn’s disease (3.95%).

Goenka MK et al 1993 demonstrated idiopathic ulcerative colitis as leading cause of lower GIT bleeding in their study (19.3%), while other causes were acute colitis (12%), colonic polyps (10.2%), radiation colitis (9%), solitary ulcer (7.8%), carcinoma (7.2%) and colonic tuberculosis in 4.2% of cases.

In our study we observed colorectal carcinoma as important cause of lower GIT symptoms (14.47%). Histopathological examination confirmed that colonoscopy is very useful in screening and early diagnosis of carcinoma.

Colorectal Cancer is the third leading cause of deaths due to cancer in United States. (Fatima AH, Robin PB 2009) Now colorectal cancer has been steadily increasing in Asia. (Goh KL 2007)

Majority of Colorectal Cancers occurs due to malignant transformation of polyp (benign lesion) also called adenoma. (Cannon-Albright LA 1988) It is believed that these polyps grow slowly over years before malignant change occurs. The risk of malignant change increases with increasing size of adenoma. Time span of this malignant change from benign adenoma, is believed to be an average 10 years. (Noffsinger AE 2009, Levine JS, Ahnen DJ 2006) So we can prevent colorectal cancer by early detection and removal of polyps (Levin B et al 2008) Colonoscopy allows biopsy sampling or polypectomy in the case of precancerous polyps. (Levin B 2008) In present study we detected polyps in 7.89% of cases. Lower GIT symptoms suggestive of colorectal cancer may be different based on location (proximal or distal). Symptoms like bleeding per rectum & constipation are suggestive of distal colorectal cancer. Whereas abdominal pain, anorexia, low haemoglobin and palpable mass are highly suggestive for proximal colorectal cancer. (Peedikayil MC et al 2009)

Proper bowel preparation is very important in the accuracy of screening with colonoscopy (Rex DK 2002). Mild sedatives might be used prior the procedure, but it is not essential for those patients who tolerate procedure well (Takahashi Y et al 2005) In our study, we used sedatives only in 6.58% of cases.

A Randomized controlled trial by The University of Minnesota, observed a 20% reduction in incidence of Colorectal Cancer. The authors attributed this reduction to screening colonoscopy and polypectomy in patients with a positive faecal occult blood test (Mandel JS et al 2000)

Colonoscopy allows full structural examination of rectum and colon in a single session. Colonoscopy is very useful for detection of colorectal polyps and polypectomy. All other forms of screening if positive, require colonoscopy as second procedure.

However, colonoscopy is an invasive procedure, and surveys indicate that many adults prefer other non-invasive options for colorectal cancer screening (Schroy PC 3rd et al 2007, Leard LE et al 1997, Ling BS et al 2001). Colonoscopy require one or more days of dietary preparation and bowel cleansing and effective performance of procedure is dependent on thorough bowel preparation. Controlled studies have shown the colonoscopy miss rate for large adenomas (≥ 10 mm) to be 6%-12%. (Rex DK et al 1997, Pickhardt PJ et al 2004). while the reported colonoscopy miss rate for cancer is about 5%. (Rex DK et al 1997, Bressler B et al 2004).

Colonoscopy is sometimes associated with complications like bleeding, perforation. Risk of perforation increases with increasing age and presence of diverticular disease and was recently estimated to occur in 1 in 1000 screened patients. (Gatto NM et al 2003) In addition, cardiopulmonary complications e.g. cardiac arrhythmia, hypotension, oxygen desaturation may occur rarely.

In present study no, serious complication like perforation had been reported. Few patients (7.89% cases) showed abdominal pain & distension, while 3.89% cases showed bleeding. These complications were successfully managed conservatively. Majority of patients (86.85%) showed no complication.

The appropriate interval between negative colonoscopy screening exams is not clear due to lack of long term follow up data. However, at present colonoscopy every 10 years is an acceptable criterion for colorectal cancer screening in average risk adults beginning at age 50 years. (Levin B et al 2008)

CONCLUSION

In the present study, we found bleeding per rectum as most common indication of colonoscopy. The most common colonoscopic pathologic finding was inflammation followed by colorectal carcinoma. No serious complication (e.g. perforation) was seen due to colonoscopy. We conclude that, Colonoscopy is safe and very useful in surveillance of high risk patients for colorectal carcinoma, and long-standing cases of inflammatory bowel disease.

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