



## Analytical Study of Colonoscopic Findings in a Tertiary Care Centre

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### Abstract

**Introduction:** Colonoscopy is the gold standard for the diagnosis of colon disease. The advantage of colonoscopy includes early diagnosis of potentially curable malignancy, facility of direct visualization and biopsy.

**Material and Method:** Prospective study of 50 cases undergoing colonoscopy with gastrointestinal symptoms.

**Results:** Male preponderance was noted. Majority of cases above the age of 40 years. Per rectal bleeding was the most common presenting symptom. Biopsy was done in 34 cases. Malignancy was the most common finding on biopsy.

**Conclusion:** The advantage of colonoscopy includes early diagnosis of potentially curable malignancy by direct visualization and biopsy.

### Introduction

Colonoscopy is the gold standard for the diagnosis of colon disease.<sup>1</sup> It has reached high levels of perfection and has success rate of 95% in reaching the caecum.<sup>2-3</sup> The technical success of colonoscopy is dependent on gender, age, obesity, bowel preparation, history of pelvic surgery, complicated diverticular disease, and/or a history of peritonitis.<sup>4</sup> Diagnostic accuracy of colonoscopy is dependent on the quality of colon cleansing.<sup>5</sup>

The advantage of colonoscopy includes early diagnosis of potentially curable malignancy facility of direct visualization and biopsy. It can also remove precancerous lesion in same setting.<sup>6</sup>

Colonoscopy is more sensitive than barium enema and allows biopsies and endoscopic therapy. The sensitivity of barium enema and colonoscopy for diagnosing colorectal cancer was 84% and 95% in a recent retrospective study.<sup>7</sup> As compared to rapid development and widespread application of endoscopy in upper GI tract, colonoscopy is still less accepted because of difficult intubation, occasional failure and the time consumed. But with the determination to master the skill and various advances in instrumentation are rewarding and colonoscopy now plays an essential role in the investigation and treatment of colonic diseases.

### Aims and Objectives

- 1) To study the efficacy of colonoscopy in diagnosis of colonic diseases.
- 2) To study histo-pathological diagnosis of biopsy taken during colonoscopy.

### Materials and Methods

A serial study of 50 patients was done who have undergone colonoscopy procedure to find out what etiological factor is responsible for their symptom.

### Patient selection

All patients with colonic symptoms likely to benefit from colonoscopy were included. Patients were referred to us from other specialties and other surgical units also. Careful history was taken and physical findings were recorded. Per rectal examination, proctoscopy and stool examination were done. Ultrasound and CT examinations were done when needed. Patient preparation was done as per the standard protocol. Bowel wash is given at night and early morning before colonoscopy. Biopsy taken during colonoscopy was sent for histopathological examination.

### Observation and Results

- During the study total 50 cases were studied.
- 76% of the cases were above the age of 40 years (Table 1).
- Male (58%) preponderance was noted with male: female ratio being 1.3 (Table 2).
- PR bleed and altered bowel habit was the commonest symptom (36%). More than one symptom were seen in 20% of cases (Table 3).
- Per Rectal examination was normal in majority of the cases followed by growth or mass in 9 cases. Three cases had both finding growth and blood stain on finger (Table 4).
- The most common pathology noted in colonoscopy was neoplasm in 26% of patients (Table 5).
- In 90% of cases colonoscope was passed up to caecum and terminal ileum (Table 6).

- Most common site for malignancy was rectum and second most common site was sigmoid colon (Table 7).
- In 33.33% of cases presenting with both PR bleed and altered bowel habits had malignancy and ulcerative colitis each (Table 8).
- In 50% of patients presenting with only PR bleed had Haemorrhoids (Table 9).
- In 23.08% of patients presenting with altered bowel habit had malignancy and polyp each and 30.77% patients had normal scopy (Table 10).
- In 40% of patients presenting with more than one symptom had malignancy (Table 11).
- Biopsy was performed in 34 cases.
- Out of total 34 biopsies, 14 (41.17%) biopsy reports were malignant. Out of which 12 (35.29%) were adenocarcinoma (Table 12).

**Table 1 : Age distribution of cases**

Age group (years)	No. of cases	Percentage
0-10	0	0%
11-20	0	0%
21-30	2	4%
31-40	10	20%
41-50	12	24%
51-60	14	28%
61-70	9	18%
71-80	2	4%
81-90	1	2%

**Table 2: Sex distribution**

Sex	No. of cases	Percentage
Male	29	58%
Female	21	42%

**Table 3: Incidence of each symptom**

Symptom	No. of cases	Percentage
PR bleed	6	12%
Altered bowel habit	13	26%
Vomiting & distention	3	6%
PR bleed and altered bowel habit	18	36%
More than one symptom	10	20%

**Table 4:** Per rectal / proctoscopy finding

Finding	No. of cases	Percentage
Normal	28	56%
Growth / polyp/ mass	9	18%
Haemorrhoids	6	12%
Blood stain on finger	5	10%
Inflamed rectal mucosa	1	2%
Fistula in ano	1	2%
Rectal prolapse	1	2%
Polyp	1	2%
Rectal stricture	1	2%

**Table 5:** Pathological lesions in colon

Colon pathology	No. of cases	Percentage
Neoplasm	13	26%
Ulcerative colitis	9	18%
Colorectal polyp	5	10%
Colonic tuberculosis	1	2%
Haemorrhoids	6	12%
Normal	10	20%
Radiation proctitis	2	4%
Rectal stricture	1	2%
Ischaemic colitis	1	2%
Amoebic colitis	1	2%
Solitary rectal ulcer	1	2%

**Table 6:** Colonoscopy tip can be passed upto

Site of colon	No. of cases	Percentage
Rectum	2	4%
Sigmoid colon	1	2%
Descending colon	1	2%
Transverse colon	0	0%
Ascending colon	1	2%
Caecum and terminal ileum	45	90%

**Table 7:** Site of malignancy

Site of malignancy	No. of cases	Percentage
Anal canal	1	7.14%
Rectum	6	42.86%
Sigmoid colon	3	21.43%
Descending colon	2	14.29%
Transverse colon	1	7.14%
Ascending colon	1	7.14%
Total	14	100%

**Table 8:** Diagnosis in patient presenting with both PR bleed and altered bowel habits

Diagnosis	No. of cases	Percentage
Malignancy	6	33.33%
Haemorrhoids	3	16.67%
Ulcerative colitis	6	33.33%
Normal	2	11.11%
Solitary rectal ulcer	1	5.56%
Total	18	100%

**Table 9:** Diagnosis in patient presenting with PR bleed

Diagnosis	No. of cases	Percentage
Malignancy	1	16.67%
Haemorrhoids	3	50%
Radiation proctitis	1	16.67%
Ischaemic colitis	1	16.67%
Total	6	100%

**Table 10:** Diagnosis in patient presenting with altered bowel habits

Diagnosis	No. of cases	Percentage
Malignancy	3	23.08%
Normal	4	30.77%
Polyp	3	23.08%
Ulcerative colitis	1	7.69%
Radiation colitis	1	7.69%
Amoebic colitis	1	7.69%
Total	13	100%

**Table 11:** Diagnosis in patient presenting with more than one symptom

Diagnosis	No. of cases	Percentage
Malignancy	4	40%
Ulcerative colitis	2	20%
Polyp	2	20%
Colonic tuberculosis	1	10%
Rectal stricture	1	10%
Total	10	100%

**Table 12:** Biopsy report

Biopsy report	No. of cases	Percentage
Adenocarcinoma	12	35.29%
Negative for malignancy	2	5.88%
Tubulo-villous adenoma	3	8.82%
Tubular adenoma	1	2.94%
Chronic non-specific inflammation	7	20.59%
Chronic Ischaemic ulcer	1	2.94%
Ulcerative colitis	5	14.71%
Tuberculous lesion	1	2.94%
Malignant melanoma	1	2.94%
Malignant spindle cell tumour	1	2.94%
Total	34	100%

## Discussion

Maximum (36%) i.e 18 patients is presenting with PR bleed and altered bowel habits of which 6 patients is having malignant growth arising in the colon. Another 6 patients were diagnosed to have ulcerative colitis. Three of them had hemorrhoids. There was one case of solitary rectal ulcer,

biopsies taken was reported as chronic nonspecific inflammation.

The next largest group is of 13 (26%) patients presenting with altered bowel habit of which 3 patients was found to have malignant growth arising in the colon. Another 3 patients had polypoid growth out of which one patient is having malignant melanoma of anal polyp and other two had no evidence of malignant foci either on gross or microscopic examination. There was one case of amoebic colitis, one case of ulcerative colitis and one case of radiation proctitis.

Six patients presenting with bright red blood passed per anus and obvious haemorrhoids or fissures. They were examined by colonoscopy to rule out additional source of bleeding. Forde Waye et al pronounced the need to perform full colonoscopy in middle aged person and felt that the additional yields in diagnosis was worthwhile. Areas of superficial inflammation, vascular ectasia, ischaemic ulceration and superficial carcinoma were detected by this authors on colonoscopy.<sup>8</sup> In our patients three of them were having haemorrhoids, one patient was found to have malignant growth, one had ischaemic colitis and one had radiation induced proctitis.

Three patient required colonoscopy presenting with symptoms constipation, vomiting and / or abdominal distention. Out of them one patient was examined endoscopically in order to screen for recurrence of malignancy of the colon. He was examined by passing the scope through the colostomy. The other two was diagnosed Ogilvie's syndrome, presenting typically with abdominal distension but having no mechanical obstruction on scopy. Groff reviewed cases of pseudo-obstruction (Ogilvie's syndrome) and noted that the pseudo-obstruction of left colon may lead to catastrophic consequences like necrosis or perforation of the bowel wall. The diagnosis is often made in very ill people, usually hospitalized and hence, the morbidity and mortality are very high. While conventional treatment was caecostomy, for decompression when the bowel diameter exceeded 12 cm in supine position.

Fiberoptic colonoscopy with safe endoscopic decompression is now an acceptable new therapy.<sup>9</sup> Remaining 10 patients i.e. 20% had more than one symptom of presentation. Among this group 4 patient had malignant growth in the colon. Two were diagnosed to have ulcerative colitis and two had polyp. Biopsy taken from the polyp was reported as tubule-villous adenoma. In one case we were suspecting tuberculosis of ileocecal region and we got biopsy report positive for A.F.B. Other had rectal stricture which was felt by PR examination, but biopsy report was negative for malignancy.

In 45(90%) patients, colonoscope was passed up to caecum and terminal ileum. In 5 patients we couldn't reach up to caecum, out of which in two patient we had reach only up to rectum because one had rectal stricture and another had rectal growth. In 1 patient we could not negotiate sigmoid colon because patient was having long redundant sigmoid colon. Another 2 was having growth, one had in ascending colon and another had in descending colon obstructing the lumen so we could not negotiate beyond the respective lesion.

Comparison of diagnostic yield from colonoscopy with biopsy in our study: As already shown in observation table no 12 there were 34 patients in our series in whom we had taken biopsy. In only two cases there had different finding on biopsy report as compared to colonoscopic finding. In one case there was rectal stricture and in other case there was growth in rectum both were suspected to be malignant on colonoscopy but the biopsy report of both cases was negative for malignant cells.

Colonoscopy was passed up to caecum and terminal ileum in 90% of our patients. While Completion rates of 92–98% are reported in studies performed in expert centers, because few patients had narrowing, stricture or malignant disease that precluded further passage of colon.<sup>10</sup> Although colonoscopy known to be more hazardous than Barium studies. We had no record of any complication in the study carried out,

which could be attributed to the fact that the procedure of colonoscopy was modified as per the pathology to be investigated. Example for the patient of ulcerative colitis we saw it that air insufflation was kept to a minimum to avoid perforation. Thus, the overall the procedure was safe and simple with minimal inter observer variation as there is a chance of multiple observer to be present at one time. There is also the added advantage of lesion being subjected to biopsy.

### **Value Of Colonoscopy In Various Disorders**

Our experience and comparison with reported studies.

A) Ulcerative colitis: We found 9 cases. In each case colonoscopic appearance was vital in clinching the diagnosis. In one patient there was a narrowed colon with loss of distensibility, pseudopolyps, ulcerations and inflammation. Another patient had granulomatous polypoid lesion all over the colon. After giving salazopyrine for three weeks, a repeat scopy showed marked reduction in congestion. Colonoscopy after 2 months showed extensive granulomas but active bleeding was absent. No malignant changes were visualized. An unusual case had two strictures in sigmoid colon and extent of involvement was from 10 to 25 cm from anus, with further satellite lesions. Actually, the visual impression was of malignancy, but biopsy only showed inflammation. Repeat colonoscopy after conservative therapy and anti-inflammatory drugs showed resolution of nodules and the lesion looked hemorrhagic and inflammatory.

Biopsies from multiple sites ruled out malignancy. Thus, in our experience colonoscopy was useful to diagnose, follow up and screen patients of ulcerative colitis for malignant change. However, there was a real need of pathologists specially experienced in the examination of colonoscopic biopsies, as the specimens obtained were very small in size, limited by the size of the biopsy forceps. Rosenstock, Farmer et al reviewed retrospectively 298 patients undergoing colonoscopy for surveillance of malignant

changes in ulcerative colitis. Carcinoma or dysplasia was found in 16 patients with mean duration of disease 16 years. 9 patients had dysplasia alone, 6 had dysplasia with cancer and one had only cancer. They concluded that high grade dysplasia was a strong indication for surgery.<sup>11</sup>Waye from Mount Sinai Hospital reported an incidence of cancer found in 11% of patients with chronic ulcerative colitis over 8 years of duration.<sup>12</sup> 16% of patients with dysplasia will subsequently be found to have cancer colon. Delpre et al reported 15 patients with ulcerative colitis with the aim of comparing endoscopic aspects with light and electron microscopic features in biopsies from multiple sites. Patients with severe colitis were examined without prior preparation. In milder cases saline enemas were given. In 94.7% of biopsies the endoscopic appearances correlated well with histologic findings.<sup>12</sup>

B) Amoebic colitis: We diagnosed amoebic colitis in 1 patients with diarrhea and mucus in stools. Findings on endoscopy were superficial ulceration, congestion, necrosis with yellowish slough. Blumencranz, Kasen et al reported 3 patients with diagnostic appearance on endoscopy. They felt that gross appearance was of great help in diagnosis of amoebic colitis.<sup>13</sup>

C) Colonic malignancies: In our series, 14 patients had colonic malignancies, most of the patients had either ulcers or ulcerated growths. Biopsies were conclusive from most of them. Satellite nodules were discovered in two cases and showed biopsy pictures negative for malignancies. We were able to screen the rest of the colon to demonstrate the absence of metachronous tumours. Two cases had narrowing of the colonic lumen. Difficulty has experienced in negotiating the strictures. Any radical surgery requires prior confirmation by histology that can only be provided by colonoscopic methods.

We also performed screening colonoscopy for recurrent malignancies in 1 patient who was operated for carcinoma descending colon. Wide excision of lesion with colo-colonic anastomosis



with transverse loop colostomy was done. Preparation of the patient with colostomy for endoscopy was difficult, as the bowel wash fluid tends to leak out from the colostomy. Colonoscopy through the stoma was easier. In that case there was no evidence of recurrence of malignancy. Neither was any benign lesions found.

Bat et al reported a series of 50 cases of colonic cancer screened for synchronous neoplasms before and after resection. Synchronous multiple adenomas were found in 29 cases and invasive cancer in 3 cases. All these were missed by intraoperative bowel palpation. Synchronous neoplasms occur more frequently with occluding than non-occluding malignancies.<sup>14</sup>

D) Polyposis and therapeutic polypectomy: Our series included 8 colonoscopies in patients with polyposis. 1 had anal polyp which was black in color and biopsy report was malignant melanoma. Rest all polyp were benign. Therapeutic polypectomy is not done in our institute.

E) Acute and chronic rectal bleeding: 24 patients were examined for hematochezia or melena. 7 patients had malignancy, 6 had haemorrhoids, 6 had ulcerative colitis, 1 had ischaemic colitis, 1 had radiation proctitis, 1 had solitary rectal ulcer and 2 cases were normal.

Caos et al studied 35 patients with acute hematochezia. They found bleeding lesions in 24 patients. 3 patients were bleeding from proximal sites beyond ileo-caecal valve<sup>15</sup>. Shinya et al had the largest reported series of 2200 patients. They found neoplastic polyps to be the commonest cause. Cancer was found in 19% of cases. They advised upper and lower GI investigation for people with occult bleeding, barium enema and colonoscopy for patients passing bright red blood in small amounts and selective mesenteric angiography for massive lower GI tract hemorrhage<sup>16</sup>. Only if this was not feasible, colonoscopy was advised in the massive bleeding group. Blood itself acts as a cathartic, but rectal irrigation was needed for preparation. They found inflammatory bowel disease, proctitis, internal

haemorrhoids and also 141 patients in whom no cause could be demonstrated<sup>16</sup>. Tedesco and Pickens examined the role of colonoscopy in acute, chronic and occult rectal bleeding and found 16 patients out of 53 examined to have pathologic conditions including polyps, cancer, vascular ectasia and Crohn's disease<sup>17</sup>.

Tedesco and Gottfried prospectively evaluated 176 hospitalized patients with nonactive lower intestinal bleeding. They found barium enema not to be a necessary pre-requisite for a sensitive and safe colonoscopy. Colonoscopy was better at detecting polyps and malignancies<sup>18</sup>. Theoni et al examined 136 patients with hematochezia or occult blood in stools. Barium enema missed 45 out of 155 proved bleeding sites, a sensitivity of 71% and also 13 out of 15 non-bleeding lesions. Colonoscopy had a better sensitivity of 92% missing 13 out of 155 bleeding sites and 7 out of 35 non-bleeding sites.<sup>19</sup>

F) Miscellaneous disorders: We had two patients with pseudo-obstruction (Ogilvie's syndrome). Aspiration was successful in decompression of the colon. Similar 25 reports has been made by Groff.<sup>9</sup> We examined six patients with known haemorrhoids to screen them for additional sources of bleeding within the colon. All had normal colonoscopic findings. Forde et al proposed the need for such examination, especially in middle aged people in whom risk of cancer of colon is an important consideration.<sup>8</sup>

## Conclusion

- The study conducted covered a total of 50 cases of varied pathological spectrum involving the colon.
- Out of 50 patients positive finding were noted in 40 patients and in them, definitive diagnosis could be reached.
- In 45 (90%) patients we could examine the colon to its full extent, this can be considered as a fairly rate of success as compared to completion rate of 92-98% in expert centers. We have not come across any complication during colonoscopy.

- The advantage of colonoscopy includes early diagnosis of potentially curable malignancy by direct visualization and biopsy.
- It has definitely established its value in our hospital in diagnosis and management of colorectal disorder.

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