

# Lower gastrointestinal endoscopy results of surgical endoscopy unit

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## Abstract

**Aim:** Endoscopic examinations are gold standard methods with great potential for early diagnosis of colorectal adenomas and carcinomas and reduction of colorectal cancer incidence, and mortality. Our aim in this retrospective study was to evaluate our results regarding the patients who underwent lower gastrointestinal system endoscopy in the general surgical endoscopy unit in Derince Research and Training Hospital.

**Material and Methods:** We retrospectively evaluated the data of patients undergoing colonoscopy or rectosigmoidoscopy after admission to the general surgery clinic between January 2015 and December 2017 due to complaints of the lower gastrointestinal system or for bowel preparation for control purposes.

**Results:** Colonoscopies were performed to 57% (n = 2784) of the patients and rectosigmoidoscopy procedure was performed in 43% (n = 2100) of 4884 patients. 49.5% (n = 2417) of the patients were males and 50.5% (n = 2467) were females. In 81.5% of the patients the procedure was completed adequately and successfully. The number of patients evaluated as inadequate procedure was 903 (18.5%). Reasons for inadequate procedure were insufficient bowel cleansing in 12.7% (625/4884) of patients and intolerance due to pain in 5.5% (270/4884) of patients. Endoscopic procedures revealed no pathology in 28.7% of the patients (n=1170), hemorrhoids in 30.1 % (n=1198), polyps in 15.7% (n=625), anal fissure in 6.3% (n=250), and malignant diseases in 4.6% (n=183).

**Conclusion:** In this study we evaluated the endoscopy results of the lower gastrointestinal system in our unit, we found that the inadequacy rate of operation was high and the most important cause of this was insufficient bowel cleansing. Being more careful about patient preparation before the procedure, and informing the patient in detail will increase the success of the procedure and prevent unnecessary repetition of the procedure.

**Keywords:** Colonoscopy; Rectosigmoidoscopy; Colon Polyps; Colon Neoplasm.

## INTRODUCTION

Colonoscopy and rectosigmoidoscopy towards lower gastrointestinal system play important roles in diagnosis and treatment of colorectal lesions. Today, endoscopic procedures are commonly preferred when pathology of the gastrointestinal system is considered. Some indications that stand out are rectal bleeding, fecal occult blood positivity, change in bowel habits, anemia etiology, abdominal pain, ileus etiology. Besides the above list it is used also for screening. In addition to diagnostic procedures such as biopsy with lower gastrointestinal system endoscopy, procedures for treatment such as polypectomy, intervention to hemorrhagic lesions, stent placement, and foreign body removal can also be performed.

Nowadays with flexible endoscopes and videoendoscopic systems these operations are performed much more efficiently. In this method, other people in the room other than the endoscopist can follow up the process and it contributes to the learning process.

The imaging of the colon, rectum and anus was in parallel with the more accurate diagnosis and treatment of surgeons in this area (1). The prognosis of cancer patients in the lower gastrointestinal tract precursor lesions or cancer depend on early recognition. The most important diagnostic tool in this regard is endoscopic examinations. Recent technological changes in imaging systems may allow pathologic diagnosis and resection during endoscopy (2,3).

The aim of this study to evaluate and present the results

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of the endoscopy of the lower gastrointestinal system performed in our endoscopy unit.

### MATERIAL and METHODS

Patients for all lower gastrointestinal system endoscopies, who were admitted and hospitalised in Ministry of Healthin DerinceResearch and Training Hospital between January 2015 and December 2017 were retrospectively evaluated from the patient charts, epicrisis, and pathology reports.

All of our patients received clear diet, sennoside A+B calcium oral laxative solution (X-M diet solution) and bowel preparation solutions were prepared with 19 g sodium dihydrogen phosphate + 7 gr Disodium Hydrogen Phosphate enema (BT enema). The bowel solutions were applied to patients who received RS 2 hours and 60 minutes before the procedure and the preparations were completed. The procedure was performed using Fujinon endoscopy system 2200.

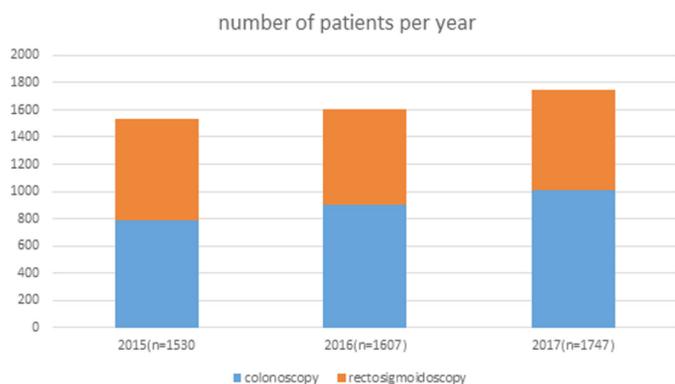
In colonoscopies, cecal intubation and rec to sigmoidoscopyin descending colon was applied and it stopped to be adequate when reac hedenough length.

Biopsy was performed with biopsy forceps, and also polypectomy was performed with snear and forceps. Vio200s ERBE machine was used for bleeding control and cutting during polypectomy.

No premedication for sedation was used for the patients.

### RESULTS

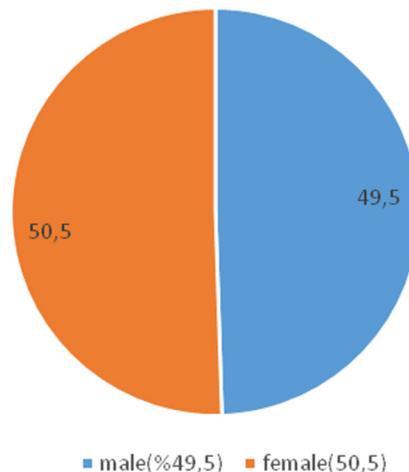
In our endoscopy unit, 2784 (57%) colonoscopy and 2100 (42.99%) rectosigmoidoscopy procedures were applied to 4884 patients undergoing lower gastrointestinal system endoscopy. The number of patients treated and the distribution of procedures increased over the years (Graphic 1).



Graphic 1. Number of patients per year

2417 (49.5%) of the patients were males and 2467 (50.49%) were females. The mean age of our patients was 47.7 years (Graphic 2).

We evaluated 1908 (38.2%) cases of rectal bleeding, 1047 (21%) of abdominal pain etiology, 839 (16.3%) of bowel habits, and 649 (11.2) anal region complaints according to the indications of the patients (Table 1).



Graphic 2. Gender

Table 1. Indications

| Indications                                   | n    | %  |
|---|------|----|
| Rectal bleeding                               | 1908 | 39 |
| Abdominal pain                                | 1047 | 22 |
| Bowel habit                                   | 839  | 17 |
| Anal region complaints                        | 649  | 13 |
| Other(family history, ety. of anemia, mass ?) | 440  | 9  |

The lower gastrointestinal system endoscopic examination was normal in 1170 (28.7%) of our cases and no lower gastrointestinal system pathology for the complaints was found.

The number of patients evaluated as inadequate procedure was 903 (18.5%). When the causes of inadequate procedure were examined, it was reported that in 625 patients (69.2%) the procedure can't be performed because the mechanical bowel clearance was insufficient to allow examination of the colon and in 270 patients (30%) the procedure couldn't be tolerated. The number of transactions was 3981 (81.5%)

Results of our colonoscopies and rectosigmoidoscopies were summarized in Table 2.

Table 2. Result of endoscopy

| Results              | n    | %    |
|----------------------|------|------|
| Normal               | 1170 | 28.7 |
| Hemorrhoid           | 1198 | 30.1 |
| Chronic anal fissure | 250  | 6.3  |
| Polyp                | 625  | 15.7 |
| Malignancy           | 183  | 4.6  |
| Diverticulosis       | 196  | 4.9  |
| Other                | 382  | 9.6  |

One thousand one hundred seventy of our patients were reported to be normal. 1198 (30.1%) patients had hemorrhoids. 625 (15.7%) patients had polyps, 250 (6.3%) patients had chronic anal fissure, 196 (4.9%) patients had diverticulosis and 183 patients (4.6%) had malignancy.

If we look at the subgroups of patients evaluated as other; 64 (1.6%) were found to have inflammatory bowel disease, 147 (3.7%) rectitis, 40 (1%) perianal fistula and 17 (0.42%) anastomotic stenosis (Table 3).

When the location of the malignancies were considered 45 (24.4%) were at rectosigmoid junction, 28 (15.5%) were at sigmoid colon and 89 (48.8%) were at rectum (Table 4).

| Other                      | N   | %    |
|----------------------------|-----|------|
| Rectitis                   | 147 | 3.7  |
| inflammatory bowel disease | 64  | 1.6  |
| Perianal fistula           | 40  | 1    |
| Anastomotic stenosis       | 17  | 0.42 |
| Polyposis coli             | 13  | 0.33 |

| Malignancy         | n  | %    |
|--------------------|----|------|
| Rectum             | 89 | 48.8 |
| Rectosigmoid       | 45 | 24.4 |
| Sigmoid            | 28 | 15.5 |
| Anal               | 4  | 2.2  |
| Hepaticflexure     | 4  | 2.2  |
| Transvers colon    | 4  | 2.2  |
| Recurrent colon ca | 9  | 4.4  |

As a result of comparison of indications with endoscopy results; 74% of patients presenting with abdominal pain was reported as normal. Hemorrhoids were detected in 82% of patients with rectal bleeding. Malignancy had a history of rectal bleeding in 70.4% of patients (Table 5).

|                | Rectal bleeding n (%) | Abdominal pain n (%) | Bowel habit n (%) | Anal region complaints n (%) |
|----------------|-----------------------|----------------------|-------------------|------------------------------|
| Normal         | 100 (8.5)             | 640 (74)             | 224 (19)          | 150 (12)                     |
| Hemorrhoid     | 982 (82)              | 40 (3.3)             | 2 (0.16)          | 154 (12.8)                   |
| Polyp          | 300 (48)              | 220 (35.2)           | 100 (16)          | 25 (4)                       |
| Diverticulosis | 19 (9.6)              | 75 (38.2)            | 102 (52)          |                              |
| Malignancy     | 129 (70.4)            | 10 (5.4)             | 40 (21.8)         | 4 (2.1)                      |

The only complication was perforation which was observed in only 1 of 3981 patients who underwent rectosigmoidoscopy. In this patient perforation occurred during rectosigmoidoscopy for the etiology of abdominal pain, he was operated immediately and diverticulitis was seen. Resection and anastomosis were performed and the patient was discharged with cure at 5th postoperative day.

## DISCUSSION

Lower gastrointestinal system endoscopy is a standard test used to evaluate large bowel, rectum, and anus. In addition to macroscopic evaluation, chance of diagnostic and therapeutic interventions is among its main advantages.

The purpose in lower gastrointestinal system endoscopy is imaging of cecum and in recto sigmoidoscopy ending colon (4).

The purpose of endoscopy units is to achieve cecum intubation in 90% or more of the colonoscopy cases (4). In our study rate of successful and adequate procedure was 81.5%. The success and adequacy of the procedure is affected from many factors. One of the most important factors that affect the success of the procedure is inadequate bowel cleansing. In 25% of unsuccessful colonoscopy procedures the reason was inadequate bowel cleansing (5). In our series the rate of inadequate bowel cleansing was 62.4% and this was the most important reason for the low rate of adequate procedures. Advanced age, obesity, female gender, comorbid states (diabetes, dementia, Parkinson), single and isolated patient, low socioeconomic status, multiple drug use, not obeying bowel preparation instructions, false timing of medications used for bowel cleaning and long appointment waiting period were reported to predispose to inadequate bowel cleansing (6,7).

Retrospective nature of this study, and absence of recording of demographic data of the patients, their comorbidities, previous drugs, operations, and sociocultural levels limited the study to define possible risk factors for bowel cleansing.

Patient intolerance was the second cause of inadequate procedure in our study. Due to the infrastructure of our endoscopy unit and absence of anesthesiology support none of our patients received sedation. In two studies performed without sedation the procedure was reported to be terminated in 16-56% of the patients due to intolerance (8,9). In our patient group, the procedure was terminated in 5% of all patients who underwent a colonoscopy due to intolerance with an inadequate procedure. Various clinical studies and treatment guidelines have reported that sedation at adequate levels provides clinical benefit in terms of procedural success and patient comfort (10-13).

In contrast, in a study of the procedures without sedation, it was reported that the treatment success was similar and that 97.4% of the patients without sedation wanted to have the next procedure without sedation (14).

Considering the technical infrastructure requirements, cost of operation, and sedation-related complications in endoscopy units, we think that it may be more appropriate to apply it in selected cases rather than routine sedation of all patients.

Lower gastrointestinal system endoscopy is the most important diagnostic tool for the diagnosis, follow-up

and exclusion of important colorectal diseases such as adenomatous polyps and cancer. Mortality rates can be reduced by up to 30% with early diagnosis in colorectal cancers, which rank second in the cancer-related death order (15,16).

As the result of the studies in our country, the percentage of colorectal cancer was 3% in Elazığ and 14.4% in Bursa (17). In our series, this rate was 4.6%. When colorectal polyps identified as precancerous lesions in colorectal cancer development are detected during colonoscopy, their removal with colonoscopy procedures if the conditions are appropriate is recommended (18).

In our work, polyps were detected in 15.7% of cases and polypectomies were performed. Studies involving different populations have rates of 25-40% polyps over the age of 50 (19,20,21). The low rate of polyps encountered in our study may be due to the combined results of RSS and colonoscopy and the low average age of patients in our series.

Colonoscopy is an invasive procedure. The most common complications are reported to be bleeding (0.24%-0.33%) and perforation (0.08%-0.19%). Bleedings commonly occur from diverticula and after polypectomy (22). We did not have hospital admissions due to bleeding in our study. In one patient, colon perforation developed after rectosigmoidoscopy.

## CONCLUSION

In conclusion, we found that lower gastrointestinal endoscopy was performed with acceptable complication rate in our unit, but the rate of inadequate operation was high. Results of lower gastrointestinal system endoscopies being at a wanted level is affected by many factors. The most important problem in our results seems to be inadequate bowel cleansing. Therefore, being more careful about patient preparation before the procedure, and informing the patient in detail will increase the success of the procedure and prevent unnecessary repetition of the procedure.

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