

Colonoscopic findings in patients referred to Erbil public endoscopy units

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Abstract

Background and objective: Colonoscopy, which is the visual examination of the large bowel and distal part of the small bowel, is an important diagnostic and therapeutic procedure. This study aimed to find out diagnostic findings of endoscopies in Erbil endoscopy unit and relation to important personal data including age and gender.

Methods: An observational study was carried out from July 2017 to October 2017. Colonoscopies were done for 125 patients who met the inclusion criteria.

Results: The findings of 125 colonoscopies were classified into gross and pathological findings. Colitis was found in 17 patients (13.6%), of which 10 patients (58.4%) had inflammatory bowel disease with higher incidence in females (60%). Polyps were found in 20 patients (16%) with adenomatous type being the most common pathological type (12 patients, 60%). Grossly sessile types were found in 13 patients (60%). Malignant tumors were found in eight cases (6.4%) with male predominance (62.5%). Ulcers were found in six cases (4.8%), and diverticula in five cases (4%). Normal colonoscopy was found in 46 cases (36.8%), with majority of these cases (37 cases) aged 21-41 years. Hemorrhoids were found in 23 patients (18.4%).

Conclusion: Polyps were the most common colonic mucosal pathology with male predominance and older ages, followed by colitis with a higher incidence in females. Malignancies had lesser frequencies, the majority being in male and old age people. Normal colonoscopies and hemorrhoids were the largest groups, and diverticula with ulcers were the least findings.

Keywords: Colonoscopy; Colitis; Polyps; Malignancy.

Introduction

Colonoscopy is the visual examination of the inner surface of the colon.¹ It is often performed in hospitals under conscious sedation by passing 130-180 cm long flexible endoscope through the anal canal in order to examine the entire colon and the terminal ileum.² Compared with other imaging modality, colonoscopy is more sensitive and specific. Especially, small lesions (particularly under 1 cm) and mucosal changes (such as colitis).³ The main indications of colonoscopy according to American society of gastroenterology are Evaluation of unexplained gastrointestinal bleeding, Iron deficiency of unknown origin, chronic diarrhea, colorectal surveillance

and screening, inflammatory bowel disease of colon for more precise diagnosis or the disease determination, intraoperative identification of the lesion which is not apparent at surgery (polypectomy site and locating the site of bleeding), evaluation of abnormality on barium enema, and removal of polyps.⁴ The main therapeutic uses of colonoscopy are polypectomies which can be done for almost all polyps, hemostasis, volvulus deflation, stenting either for cancer palliation or bridge for definitive cancer surgery, balloondilatation, fecal microbial transplantation, anal fissure botox injection and endoscopic band ligation for hemorrhoids.⁵ The complications of colonoscopy are mainly

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bleeding, perforation and postpolypectomy syndrome.⁶ The main reasons for colonoscopies are polyps, colitis with inflammatory bowel disease, chronic diarrhea, colonic surveillance and malignancies, lower gastrointestinal bleeding, anemia of unknown origin, and diverticula. Polyps are slow growing overgrowth of the colonic mucosa, which may carry a small risk (<1%) of becoming malignant. Polyps commonly found in the rectum and distal colon, which they may be sessile or pedunculated grossly. They are usually divided into hyperplastic polyp, sessile serrated polyp, hamartomatous or inflammatory polyps histopathologically.⁷ Inflammatory bowel disease is characterized by idiopathic gastrointestinal inflammation and is usually divided into Crohn's disease (CD) and ulcerative colitis. Long standing inflammatory bowel disease may be at increased risk of colorectal cancer that is why they should undergo for surveillance colonoscopy every one to two years beginning after eight years of diagnosis of the disease.⁸ Colonoscopy should be done for any patients with chronic diarrhea whose age is older than 50 years for colorectal cancer. Any patients younger than 50 years with features of inflammatory bowel disease should undergo colonoscopy. Any patients whose undergoing colonoscopy should have terminal ileum to be inspected and random biopsies should be taken in order to check for microscopic colitis.⁸ The second leading cause of cancer and cancer-related mortality in women and men in the United States is colorectal cancer. The lifetime cumulative risk of having colorectal cancer is one in 20 women and one in 19 men. The colorectal cancer incidences have decreased over the past 30 years. This is largely due to use of colorectal cancer screening. Required screening every 5 years beginning at the ages of 40, or 10 years younger than age at diagnosis of the youngest affected.⁷ The main causes of lower gastrointestinal bleeding can be classified into diverticular disease (30%),

Meckel's diverticulum (6%), angiodysplasia (3%), inflammatory bowel disease (9%), ischemia (12%), anal disease e.g. hemorrhoids (14%) fissures (8%), carcinoma (6%), large polyps (6%), and solitary rectal ulcer (6%).⁷ When blood and its product cannot be seen by the naked eye, it is called occult blood. This condition may reach 200 ml per day, which may cause iron deficiency anemia with an indication of serious gastrointestinal disease. The goal of endoscopy is to exclude carcinoma or vascular anomaly with certainty since about 80% have a negative examination.⁷ Diverticula are an outpunching of colonic mucosa that usually occurs in old age due to long standing increased pressure inside the colon mainly because of constipation. It is asymptomatic mainly becomes symptomatic when it perforated or infected.⁸ This study aimed to find out the diagnostic findings of colonoscopies in Erbil endoscopy unit and relations of findings to important personal data, including age and gender.

Methods

An observational study was conducted with patients who were submitted to colonoscopy units from July 2017 to October 2018 with different clinical presentations. Patients intended for colonoscopy were excluded besides patients with an acute episode of inflammatory bowel disease, acute diverticulitis, abscess, and acute coronary syndrome. The main inclusion criteria were patients of all age groups and both gender with main indications of chronic diarrhea, lower gastrointestinal bleeding, colorectal screening and surveillance, constipation, anemia of unknown origin, and alternating bowel motions. Bowel preparation started 24 hours prior to examination by fasting from eating, but only drinking fluids. Besides taking the following preparations:

1. Twelve tabs of laxatives (Bisacodyl) 10 mg with the distribution of 4 tabs in the morning, 4 in the launch with 4 tabs in the night before colonoscopy.

2. Polyethylene glycol solution PEG (6 coloclensachets) dissolved in 24 cups of water, starting at 6 pm the day the procedure until 8 am of the same day of the procedure, which means each cup for a before half hour. The patient should be fasting in the same-day procedure performed. Full history and examination were carried out and recorded on a questionnaire containing related data for patients having biopsy were labeled to follow up the results of histopathology. Total colonoscopy was carried out using the colonoscope of OLYMPUS brand (LUCERA CV-260). Patients were monitored after the procedure for about

one hour to detect any acute complications with later follow up for the results of biopsies.

Data analysis

Data were analyzed using the statistical package for the social sciences (version 18). Categorical variables have been summarized to frequencies and percentages.

Results

Our study included 125 patients of all age groups (Table 1). The main indications of 125 colonoscopies are shown in Table 2. There were 68 (54.4%) males and 57 (45.6%) females.

Table1: Age distribution of the study participants.

Age Group	Frequency (No.)	Percent (%)
1-20	4	3.2
21-40	52	41.6
41-60	54	43.2
61-80	15	12.0
Total	125	100.0

Table 2: Indications of colonoscopy.

Indication	Frequency (No.)	Percent (%)
Bleeding Per rectum	33	26.4
Constipation	30	24.0
Alternating bowel motion	21	16.8
Diarrhea	18	14.4
Abdominal Pain	12	12.8
Follow up of malignancy	6	4.8
Anemia of unknown origin	1	0.8
Total	125	100.0

There were 101 (80.8 %) outpatients and 24 (19.2%) inpatients. Gross colonoscopic findings were divided into seven main groups; the frequency of each is shown in Table 3. Five of the 47 patients having biopsies were insufficient to conclude the final diagnosis. From 125 cases, 20 cases had polyps with males constituted 12 (60%) patients and females eight (40%) patients. In terms of the age distribution of polyps, three cases (15%) were within the age range 21-40, 12 patients (60%) were within the age range of 41-60, followed by five (25%) cases within the age range of

61-80 years (Table 4). Polyps less than 1 cm constituted (70%) and more than 1 cm (30%). Of the 20 cases with polyps, polyps were removed in 17 (85%) cases. Grossly sessile polyps were present in 13 patients (65%), followed by pedunculated type in seven patients (35%). For histopathological types, adenomatous with tubular and villous types were present in 12 patients (60%), hyperplastic polyps in five cases (35%) and unidentified due to insufficient piece for biopsy constituted 3 cases (15%), as shown in Table 5.

Table 3: Gross findings of colonoscopy.

Findings	Frequency (No.)	Percent (%)
Normal	46	36.8
Hemorrhoids	23	18.4
Polyp	20	16
Colitis	17	13.6
Tumors	8	6.4
Ulcers	6	4.8
Diverticula	5	4
Total	125	100.0

Table 4: Age distribution of polyps.

Age Range	Frequency (No.)	Percent (%)
21-40	3	15.0
41-60	12	60.0
61-80	5	25.0
Total	20	100.0

Table 5: Pathological diagnosis of resected retrieved polyps.

Pathological Diagnosis	Frequency (No.)	Percent (%)
Adenomatous Polyp	10	50.0
Hyperplastic Polyp	7	35.0
Insufficient piece for biopsy	3	15.0
Total	20	100.0

Of the total colonoscopies, 17 cases of colitis were found; nine (52.9%) females and 8 (47.1%) males. The age distribution of these cases is shown in Table 6. The pathological diagnosis is shown in Table 7. Of 125 cases, eight patients (6.4%) had malignancy. Four patients (50%) presented with abdominal pain, two patients with chronic diarrhea, and the two others with constipation. Four of the eight patients (50%) were 41-60 years old. Males were predominant with five patients (62.5%) and females with three patients (37.5%). The tumor was in rectosigmoid region in five (62.5%) patients and in other parts in 3 (37.5%) patients. All the eight patients were of adenocarcinomatous type. Six patients (4.8%) had ulcers. Two of them in the ileum and cecum in which biopsy was taken and revealed to be inflammatory bowel disease (Crohn's disease), and three of the ulcers were in the rectum revealed to be solitary rectal ulcers. Therapeutic procedures were done for 17 patients, which was only for polypectomy.

were analyzed and histopathological findings were also analyzed in cases in which biopsies were taken in order to know the percentage of each gross findings and their pathological significance. In 125 patients male constituted 68 patients (54.4%) and females with 57 patients (45.6%). Outpatients constituted the majority of our cases 101 cases (80.8%) and much less with inpatients 21 cases (19.2%). This is consistent with a study conducted in Al Amiri hospital in Kuwait city, which was done between January and December 1999 over 3000 colonoscopies in which males constituted 62% and females 38%.⁹ Most patients were in the age group of 41-60 years, which is possibly due to having a higher prevalence of colonic diseases in this age group. Five patients (10.6%) from 47 patients whom the biopsies were taken were undiagnosed pathologically due to insufficient piece for biopsy. This was more due to poor preparation of patients and poor technique. The gross finding from 125 colonoscopies in this study included normal colonoscopies in 46 patients (36.8%), piles in 20 patients 18.4%), polyps in

Discussion

In our study, optical colonoscopic findings

Table 6: Age distribution of colitis patients.

Age Group	Frequency (No.)	Percent (%)
1-20	1	5.9
21-40	8	47.1
41-60	4	23.5
61-80	4	23.5
Total	17	100.0

Table 7: Pathological diagnosis of colitis.

Pathological Diagnosis	Frequency (No.)	Percent (%)
Ulcerative Colitis	6	35.3
Crohn's disease	4	25.5
Infectious Colitis	3	17.6
Microscopic Colitis	1	5.9
Ischemic colitis	1	5.9
Insufficient piece for biopsy	2	11.8
Total	17	100.0

20 patients (16%), colitis (in 17 patients (13.6%), malignancy in eight patients (6.4%), ulcers in six patients (4.8%), and diverticula in 5 patients (4.0%). This result was close to a study done in Soma hospital in Khartoum city of Sudan by Mudawi et al. in 2005, which included 168 colonoscopies and revealed normal findings in 61 patients (36.3%), polyps in 24 cases (14.3%), neoplasm in 18 cases (10.7%), colitis with all its forms in 26 cases (15.5%), piles in 19 cases (11.3%) and diverticulosis in five cases (3%).¹⁰ Of the 46 patients with normal colonoscopies, 37 patients (80.4%) were aged 18-44 years, and this reflects a lower incidence of colonic pathologies in this age group. Out of 125 colonoscopies, 20 patients (16%) were found to have polyps. This information is close to what is mentioned in the literature about the prevalence of polyps, which found to be 16% to 29.9% in colonoscopies.¹¹ From 125 cases, we had 20 polyps with males constituted 12 patients (60%) and females 8 patients (40%) and this was not statically significant, possibly due to a the small number of polyp patients. In other studies that included only polyp patients showed that males consisted higher rates. In this study, the highest number of polyps (12 cases, 60%) were in the age range of 41-60 years, but it was statically insignificant due to the small number of polyp patients in total colonoscopies. In the other studies that only included polys showed higher incidence in older patients.¹²⁻¹⁴ In our study, the size of most of the polyps was less than 1 cm (14 cases, 70%), and this is close to Hadi et al., which found that most of the Iraqi patients were having polyps less than 1 cm (60.7%). We found 13 sessile polyps (65%), which is also close to Hadi et al., which found (60%) with sessile types. We found 7 polyps (35%) of a pedunculated type, and this is close to Hadi et al. 40%).¹¹ Adenomatous polyp, both tubular and villous types, were present in 12 patients (60%), which is close to Hadi et al. in Baghdad 2001 and Sandra et al. In Brazil 2011, which found 61.5%

and 55.7%, respectively, followed by (hyperplastic polyp infive patients (35%), and three polyps (15%) unidentified due to insufficient piece for biopsy.^{15,16} From total colonoscopies, colitis was present in 17 patients (13.6%), including nine female cases (52.9%) and eight male cases (47.1%). The highest incidence of colitis (8 cases, 47.1%) were in the age range 21-40 years, which may be due to the severity of symptoms that makes patient to perform investigation thoroughly. Inflammatory bowel disease, both ulcerative colitis (6 cases, 35.5%) and Crohn's disease (4 cases, 23.5%), totally constituted 58.4% in which females constituted six cases (60%) and males four cases (40%). This was close to a study by Amira et al., which found higher incidence of inflammatory bowel disease in Iraqi females (51.6%), followed by infective colitis in three cases (17.4%) and one case for each of ischemic colitis and microscopic colitis. This result was close to a study done by Amira et al. in Baghdad in 2005, which found inflammatory bowl disease (71.5%) followed by infective colitis (13%) and microscopic colitis (8%) in a group of 130 patients. In our study, two cases of colitis were unidentified due to insufficient piece for histopathology.¹⁷ We found eight cases of malignancies (6.4%). Five patients were male (60%) and three were female (37.5%), which was statically insignificant to correlate to age and gender due to the small number of malignancies in overall patients who underwent colonoscopies. However, it gave a clue that male patients were larger in number in malignant patients only, and that is what Al Bayati found when he studied 30 patients of malignancies in Baghdad Yarmouk hospital, and found a higher incidence of malignancies in males (62.5%). Most of the tumors in our study were in the rectosigmoid (4 cases) and adenocarcinomatous type. Al Bayati also found 60% in the rectosigmoid region and mostly adenocarcinomatous.¹⁸ Six ulcers (4.8%) were found in our study; histopathological study was done for two of

them and revealed to be Crohn's disease in the terminal ileum and cecum, and the other four were in the rectal region and were considered solitary rectal ulcers. In our units, only polypectomy as therapeutic procedure was done for 17 patients, and no more advanced procedures were done. This proves that our units need more training and equipment for the more advanced procedures.

Conclusion

In our study, polyps were the highest colonic mucosal pathology with male predominance and older ages, followed by colitis with a higher incidence in females. Malignancies had the lesser frequencies, the majority being in male and old age people. Normal colonoscopies and hemorrhoids were the largest groups, and diverticula with ulcers were the least findings. We didn't find statically significant relations between colorectal pathologies and personal data. Thus, we have to do separate research to study such relations. In our units, only therapeutic procedure was polypectomy because of limited equipment. Thus, we recommend supplying the units with more equipment for performing more advanced procedures like cancer palliation.

Competing interests

The authors declare no competing interests.

References

- Larry PT, Francis WK, Smith, Dana A. Stedman's Medical Dictionary. 27th ed. Baltimore: Williams and Wilkins; 2000. P. 381.
- Saunders B. Viewing the colon: imaging and colonoscopy. *Medicine* 2003; 31:2.
- Jennifer LB, Burton K. Colonoscopy. Dec 2003. (Accessed March 12, 2017, at: <http://www.emedicine.com/med/topic2966.htm>).
- Podolsky DK, Fitz JG, Kalio AN, Shanshan F, Wango TC. Yamada's textbook of gastroenterology. Jerome D, Waye MD, Christopher B, Anandasapathy S. Colonoscopy and flexible sigmoidoscopy. 6th ed. Blackwell Publishing; 2009. P. 2650-61.
- Christopher BW, Robin KS. Flexible sigmoidoscopy and colonoscopy. *Medicine* 2003; 31(2):161.
- Sliesenger MH, Fieldman M, Brandt LJ. Sliesenger and Fordtron's gastrointestinal liver disease. 10th ed. Philadelphia: Saunder's and Elsevier; 2010. P. 970-78
- Masters PA, Oxentenko SA, Tunkel RA, Burke CA, Dimiango MJ, Gross SA, et al. MKSAB 17: Medical knowledge self-assessment program. Philadelphia: American College of Physicians; 2015. P. 44-54
- Palmer KR, Penman ID, Alimentary tract and pancreatic disease, Colledge RN, Walker RB, Ralston, H. Stuart. Davidson's principle and practice of medicine. Edinburgh, UK Churchill and Livingstone; 2009. P. 855-6
- Mohammad A, Al Shamali A, Maher K. Colonoscopy: Evaluating indications and diagnostic yields. *Ann Saudi Med* 2001; 21(5-6):304-7.
- Mudawi HM, Nanakaly SM, El tahir MA, Ibrahim SK. Indications and findings of colonoscopy in patients presenting to the endoscopy unit at Soba University hospital in Khartoum Sudan. *Arab Journal of Gastroenterology* 2010; 11(2):101-4.
- Santos JM, Felicio F, Lyra Junior HF, Martins MRC, Cardoso FB. Analysis of Polyps in 3491 videocolonoscopies. *Rev bras Coloproct* 2008; 28(3):229-305.
- Bafendah Y, Khoshbaten M, Sadat ATE, Farhang S. Clinical predictors of colorectal polyps in a low prevalence region: Results of a colonoscopy Based study. *World J Gastroenterol* 2008; 14(10):1534-8.
- Gupta S, Palmer BF. Colorectal polyps: the scope and management of the Problem. *Am J med Sci* 2008; 407-17.
- Bokeyemer B, Bock H, Huppe D, Duffelmeyer AR, Tacke W, Koop H. Screening colonoscopy for colorectal cancer prevention: results from German online registry on 269000 cases. *Eur J Gastroenterol Hepatol* 2009; 21:650-5.
- Sayah HA, Talabani DA, Shubber AH, AL Khaldi NM, Jarallah S. Colorectal polyp: Clinical, endoscopic and histopathological features. *Karbala J Med* 2006; 1(1):17-26.
- Valarini SBM, Bortoli VT, Wassano NS, Pukanski MF, Maggi D, Bertollo LA. Correlation between location, size and histologic type of Colorectal polyps at the presence of dysplasia and adenocarcinoma. *Journal of Coloproctology (Rio de Janeiro)* 2011; 3(31):23-32.
- Amira HS, Fayadh MH, Al-Akayshi RG. Chronic colitis: Clinical, endoscopic and histological evaluation of 130 patients. *IJGE* 2001; 1(1):11-7.
- AlBayati SA, Jasim F. Colorectal cancer in a group of Iraqi patients. *Mustansiriya Medical Journal* 2017; 7(2):36-9.