



COLONOSCOPIC EVALUATION OF LOWER OF PATHOLOGIES

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ABSTRACT

Background: To evaluate Endoscopy/Colonoscopy as a diagnostic modality in patients presenting with symptoms of Lower Gastrointestinal Tract Pathology.

Material and method: We studied 76 patients who were admitted in the OPD or emergency of M.L.B. Medical College, Jhansi and presented with the symptoms suggestive of lower Gastrointestinal pathology and colonoscopy was performed in the Department of Surgery between a period of one year from Nov 2012 to Oct 2013.

Result and Discussion: The colonoscopy was performed in most of our cases (93.42%) with tramadol (I/V) only after psychologically preparing the patients in rest of the patients (6.58%) diazepam (I/V) was given along with Tramadol(I/V). we were able to intubate the caecum (19.74%) in hepatic flexure in 47.37%, in the remaining cases we intubated splenic flexure in 18.42% and sigmoid colon in 14.48%, which were the areas containing the pathology and either we intentionally did not go beyond that or scope was not negotiable beyond that. In developing countries where infective diarrhea is still common, selecting patients for colonoscopy is more difficult. In this study, Of all the pathologies included non specific inflammation (23.69%) was the most common pathology encountered as in previous study(34.61%) followed by malignancy (14.46%), ulcerative colitis (10.52%), polyp (07.90%), solitary ulcer (5.26%), chrohn's disease(03.95%) and normal study in remaining (34.21%) cases, Where as in previous study after nonspecific inflammation Ulcerative colitis(13.46%) was the most common pathology followed by malignancy(9.61%) and solitary ulcer(3.84%), diverticular disease is not found in any of the cases. Out of 76 patients biopsy was taken in 34 (44.74%) patients. Abdominal distention and pain (07.89%) was the most common complication after colonoscopy which relieved spontaneously within one hour or two after passing flatus. one patient developed severe distention and required admission for 24 hours with nasogastric decompression. Bleeding (03.95%) following Minor traumatic injury to bowel mucosa that occurred during the procedure is next common complication which was managed with conservative treatment. Bacteraemia as evidenced by fever occurred in one (1.31%) patient who was managed with antibiotics. Out of 76 patients malignancy was found in 11 patients all of which were adenocarcinoma. They constituted 14.46%, out of these 11 patients, 4 had carcinoma at rectosigmoid junction, 2 in rectum and 3 in descending colon and 2 in ascending colon. Guillen and ford study showed an incidence of carcinoma of 12%. So our study showed slightly more incidence of carcinoma.

Conclusion: Colonoscopy is also the best modality for diagnosing malignancy of large bowel and for surveillance in high risk patients and also in those patients who have undergone previous colorectal surgery for malignancy and long standing inflammatory bowel disease

KEYWORDS : Colonoscopy, Solitary rectal ulcer, Diverticular diseases

INTRODUCTION

Examination of the anus and rectum using various instruments has been available since the time of the Egyptians and Romans. Until the development of incandescent light, visualization was difficult, using only mirrors or candlelight. The advent of electricity allowed for development of a lighted rectosigmoidoscope by James P. Tuttle in 1903. Visualization proximal to the rectosigmoid junction, however, was difficult due to the rigidity of the instrument and the anatomy of the rectosigmoid junction and the sigmoid colon. In 1928, Hoff a radiologist, used a rubber tube to incubate the cecum in a retrograde fashion using fluoroscopic guidance. However, Bergein F. Overholt is credited with the development of a flexible, fiberoptic sigmoidoscope in 1963.

The first total, closed abdomen, transanal, fiberoptic colonoscopy was performed by Provenzale and Revignas at the University of Cagliari, Sardinia, Italy in 1965. Their equipment consisted of a pulley arrangement that permitted one end, attached to a fiberoptic endoscope, to be drawn in when the other end was pulled. The patient was asked to swallow a tube. When it emerged from the anus several days later, the Provenzale Revignas assembly was tied to the end and drawn through the colon with gentle traction. Marketable versions of a flexible colonoscope were championed by Oshiba and Watanabe in the same year.

In 1969 Olympus built the first commercial colonoscope. Since then colonoscopy has become a routine procedure in many hospitals all over the world.

In automatic colonoscopies manipulating skills of the surgeon is longer the dependent factor instead movements of colonoscope are controlled by computers. In robotic colonoscopy a small robot in the shape of caterpillar is designed which is able to propel itself from the anus right upto the caecum, which have the ability to carry camera, optical fibres, surgical tools and other instruments required in a colonoscopy procedure.

Virtual colonoscopy, which uses 2D and 3D imagery reconstructed from computed tomography (CT) scans or from nuclear magnetic resonance (MR) scans, is also possible, as a totally non-invasive medical test, although it is not standard and still under investigation regarding its diagnostic abilities. Furthermore, virtual colonoscopy does not allow for therapeutic maneuvers such as polyp/tumour removal or biopsy nor visualization of lesions smaller than 5 millimetres. If a growth or polyp is detected using CT colonography, a standard colonoscopy would still need to be performed.

A snare cautery device for polypectomy had been designed by Shinya in 1972, Wolft and Shinya reported on the removal of more than 300 neoplastic polyps.

Colonoscopy is a safe, effective method of examining the full lining of the colon and rectum. Using a long flexible, tubular instrument. It is used to diagnose colon and rectum problems and to perform biopsies and remove colon polyps.

Colonoscopy is the endoscopic examination of the large bowel and the distal part of the small bowel with a CCD camera or a fiber optic camera on a flexible tube passed through the anus. It can provide a visual diagnosis (e.g. ulceration, polyps) and grants the opportunity for biopsy or removal of suspected lesions.

Colonoscopy can visualize and remove polyps as small as one millimetre or less. Once polyps are removed, they can be studied with the aid of a microscope to determine if they are precancerous or not. Colonoscopy is similar to sigmoidoscopy- the difference being related to which parts of the colon each can examine. A colonoscopy allows an examination of the entire colon (120– 150 cm in length). A sigmoidoscopy allows an examination of the distal portion (about 60 cm) of the colon. A sigmoidoscopy is often used as a screening procedure for a full colonoscopy.

The American Cancer Society "Guidelines for the Early Detection of Cancer" recommend, beginning at age 50, both men and women follow one of these testing schedules for screening to find colon polyps and cancer: 1. Flexible sigmoidoscopy every 5 years, or 2. Colonoscopy every 10 years, or 3. Doublecontrast barium enema every 5 years, or 4. CT colonography (virtual colonoscopy) every 5 years.

AIM

To evaluate Endoscopy/Colonoscopy as a diagnostic modality in patients presenting with symptoms of Lower Gastrointestinal Tract Pathology

MATERIAL AND METHODS

We studied 76 patients who were admitted in the OPD or emergency of M.L.B. Medical College, Jhansi and presented with the symptoms suggestive of lower Gastrointestinal pathology and colonoscopy was performed in the Department of Surgery between a period of one year from Nov 2012 to Oct 2013.

Detailed informed consent was taken before the procedure in every patient, standard colon preparation were accomplished with one day of liquid diet and four liter of polyethylene glycol solution taken over a period of three hours. Patient underwent monitored conscious sedation with IV Tramadol Or/And midazolam/diazepam. Patients with cardiac and pulmonary disease were haemodynamically monitored during the procedure. When an abnormality was detected, biopsies were taken for histopathological evaluation. The final diagnosis was made after histopathological assessment.

The fiberoptic colonoscope we worked with have the following specifications:

1. Angle of View 100°
2. Direction of Observation Straight (0 degree)
3. Depth of Field 5~ 100 MM
4. Outer Diameter of Insertion Tube 13.5MM
5. Range of Tip Bending Up 180° Down 180°; Left / Right 160°
6. Inner Diameter of Biopsy Channel 3.2 MM.
7. Working Length 135 cm 8. Total Length 150 cm

Accessories used with the colonoscope

- Halogen cold light source with air insufflators (Olympus)
- Video camera and video processor (Om surgicals)
- LCD Monitor
- Suction machine
- Water bottle

- Biopsy forceps.

Once patients arrived in procedure room a baseline set of vitals were obtained and premedications was given several minutes before examination.

Tramadol (25-50 mg IV) and diazepam (starting at 1-3mg IV or more) were commonly employed to decrease the discomfort of bowel stretching and insufflation and to produce a mild amnesia in some patients.

We used antibiotic prophylaxis in two patients who were having rheumatic heart disease and a past history of endocarditis. In rest all patients no antibiotic prophylaxis was used as none of them had any history of valvular disease; prosthetic valve replacement, rheumatic heart disease or a past history of endocarditis.

Antibiotic prophylaxis used was: I.V. ampicillin 2 gm with - gentamicin 80 mg given 30 minutes before the procedure followed by amoxicillin 1.5 gm orally 6 hours after the initial dose.

Technique:

All the procedures were performed in the endoscopy room of department of Surgery, M.L.B. Medical College, Jhansi. The patients were placed in left lateral position with knee drawn up. One assistant stood behind the patients on the left side of endoscopist and manipulated the endoscope on command for advancement or withdrawal with his right hand. The assistant also checked the vitals of the patient every 5-10 minutes.

A digital rectal examinations was done after applying topical xylocaine ointment. Then lubricated endoscope was inserted after verifying that all functions (air - insufflation, suction etc) are working properly, the endoscope inserted by pushing its tip along side the forfinger as the latter is withdrawn. The initial view obtained was a 'red-out' which was remedied by a little air insufflation to visualize the lumen. The endoscope was then advanced progressively, using combined manipulations of insertion, withdrawal and twisting with or without tip deflection. Clock wise torque and withdrawal proved helpful in passing sigmoid-descending junction and for straightening a sigmoid 'alpha' loop to narrow the radius of the loop. Rectum was identified by highly vascular bluish vessels, sigmoid by ring like valves, descending by narrow and tubular, transverse colon by triangular folds, hepatic flexure by dark blue hue from the liver. Abdominal compression also proved helpful in negotiating the sigmoid loop and the position was changed from left lateral to supine after crossing the splenic flexure. Upon reaching the a splenic flexure the colonoscope straightened by withdrawal combined with torque prior continued insertion. Then combined manipulations utilized to pass splenic flexure and the transverse colon entered (recognize by triangular folds) as well as by glow of light over the abdomen. The transverse colon is then passed and repeated in and out maneuvers as well as external pressures given to telescope redundant transverse colon over the endoscope. Trials of various combined maneuvers done to pass hepatic flexure in to ascending colon to reach caecum. Withdrawal of colonoscope is as important as insertions as mucosal examination is best done at this time. When the colonoscope was 20 cm from the anal verge a retroflexed view within the rectal vault obtained to document anorectal diseases not seen during insertion.

RESULT AND DISCUSSION

We studied 76 patients with the symptoms suggestive of lower Gastrointestinal pathology and were admitted in the Outpatient department (OPD) and Emergency of the department of Surgery of M.L.B. Medical College, Jhansi

between Nov 2012 to Oct 2013, and colonoscopy were performed in the Department of Surgery. The study was done to evaluate colonoscopy in diagnosing different intestinal pathologies in the patients presenting with lower gastrointestinal tract symptoms of and to find the pathologies in the order of commonness.

The age of the patients underwent colonoscopy ranged from 11 yrs to 70 yrs and the maximum number of patients who presented with the lower GI symptoms and underwent colonoscopy were in the age group of 36- 70yrs(63.16%) followed by age group 11-35yrs(36.84%).

Similar study was conducted in the Department of surgery in the year 2008-2009 and the results are compared.

The males in our study constituted 68.42% of the patients and females constituted 31.58% which shows lesser number of female patients as compared to previous study(42.30%). Most of the cases (80.76%) were admitted in OPD. Endocarditis prophylaxis was given in two(2.63%) patients who were diagnosed case of rheumatic heart disease with past history of endocarditis.

The colonoscopy was performed in most of our cases (93.42%) with tramadol (I/V) only after psychologically preparing the patients in rest of the patients(6.58%) diazepam(I/V) was given along with Tramadol(I/V). we were able to intubate the caecum (19.74%) in hepatic flexure in 47.37%, in the remaining cases we intubated splenic flexure in 18.42% and sigmoid colon in 14.48%, which were the areas containing the pathology and either we intentionally did not go beyond that or scope was not negotiable beyond that.

In developing countries where infective diarrhea is still common, selecting patients for colonoscopy is more difficult. In this study, Of all the pathologies included non specific inflammation (23.69%) was the most common pathology encountered as in previous study(34.61%) followed by malignancy (14.46%), ulcerative colitis (10.52%), polyp (07.90%), solitary ulcer (5.26%), chrohn's disease(03.95%) and normal study in remaining (34.21%) cases, Where as in previous study after nonspecific inflammation Ulcerative colitis(13.46%) was the most common pathology followed by malignancy(9.61%) and solitary ulcer(3.84%), diverticular disease is not found in any of the cases.

This observation of the increasing incidence of inflammatory bowel disease in developing countries has been made in the study by Goenka et al. and in another study of Indian immigrants to the United Kingdom. Various speculations have been made for this increase, among which are the Western lifestyle and variations in dietary intake. In a recent study by Neugut et al abdominal pain as the primary indication for colonoscopy revealed carcinoma in 27.3% of cases where as in our study it was 14.46%.

Out of 76 patients biopsy was taken in 34 (44.74%) patients. Abdominal distention and pain (07.89%) was the most common complication after colonoscopy which relieved spontaneously within one hour or two after passing flatus. one patient developed severe distention and required admission for 24 hours with nasogastric decompression. Bleeding (03.95%) following Minor traumatic injury to bowel mucosa that occurred during the procedure is next common complication which was managed with conservative treatment. Bacteraemia as evidenced by fever occurred in one (1.31%) patient who was managed with antibiotics.

Fernández E & Linares A studied 536 colonoscopies, The exploration was normal until the cecum in 146 patients (32%). In the remaining cases, the findings were: polyps (25.1%),

diverticular disease (24%), neoplasia (12.6%), inflammatory bowel disease (9.4%), unspecific proctitis (2.4%), ischemic colitis (2.4%), angiodysplasia (1.9%), infectious colitis (1.1%), and miscellaneous (0.7%). An age of less than 40 years and the existence of anal pathology were significantly more frequent among patients with a normal examination ($p < 0.001$), but with a sensitivity of only 66%. Colonoscopy is an established procedure in the workup and screening of patients with lower gastrointestinal symptoms. Colonoscopy rapidly establishes a specific diagnosis and determines the extent of inflammatory activity and this may dictate further management and prognosis. More over the information may be valuable to guide the surgeon preoperatively if required and may rule out other concomitant neoplasm in the patient with longer history. Colonoscopy accomplishes these goals during the early stage of acute disease with more reliability than any other investigation including barium enema.

Solitary rectal ulcer:

Is well recognized and the histology is diagnostic (Morsan BC, Madigan MR solitary rectal ulcer. GUT 10: 871-881). Non specific solitary ulceration may also be seen in the colon, these lesion are probably due to an ischaemic episode or a combination of internal intussusception or anterior rectal wall prolapse and increased intra rectal pressure. This combination of factors is usually caused by chronic straining as a result of constipation. In our study we found two cases of solitary rectal ulcer. Biopsy was taken and reported as chronic non specific granulomatous proctitis. Follow up was done with laxative treatment.

Diverticular disease:

An inflamed mucosa is commonly encountered in patients with diverticular diseases and appears around the diverticular orifice with petechial change on the interhastral folds often affected segment. Berkowitz et al. identified a cause for rectal bleeding in 70% of the cases undergoing colonoscopy, with findings of diverticulosis, polyps, hemorrhoids, and cancer.

Guillen and Fordee (problem general surgery 187-192) reported an incidence of 30%, 18% and 3% for chronic, recent major and acute lower GI bleeding. But in our patients we did not find any diverticular disease which can be explained by more roughage diet taken by our patients as compared to their patients who have minimum amount of roughage in there diet.

Malignancy:

Out of 76 patients malignancy was found in 11 patients all of which were adenocarcinoma. They constituted 14.46%, out of these 11 patients, 4 had carcinoma at rectosigmoid junction, 2 in rectum and 3 in descending colon and two in ascending colon. Guillen and fordy study showed an incidence of carcinoma of 12%. So our study showed slightly more incidence of carcinoma.

In a study by Berkowitz and Kaplan, the general yield of abdominal pain with significant neoplasia (cancer or adenoma > 1 cm) was 7.1%. and In a study by Kasser, the yield of colonoscopy in abdominal pain was 26.3%, however, clinically significant pathology, particularly cancer of the colon, was very rare.

CONCLUSION

Following conclusions were drawn from this study:

1. Colonoscopy is an invaluable technique for the diagnosis of disorders of the large bowel.
2. The colonoscopy is appreciably more sensitive and specific than are radiograph
3. The most common indication of colonoscopy was bleeding per rectum 4.
4. The colonoscopy can be performed with only analgesia or

minimum sedation

5. Colonoscopy is best modality for diagnosing early inflammatory disease
6. Colonoscopy is also the best and the first procedure of choice in all patients with lower gastrointestinal bleeding.
7. Colonoscopy is also the best modality for diagnosing malignancy of large bowel and for surveillance in high risk patients and also in those patients who have undergone previous colorectal surgery for malignancy and long standing inflammatory bowel disease

REFERENCES:

1. Banerjee S, Shen B, Baron TH, et al. Antibiotic prophylaxis for GI endoscopy. *Gastrointest Endosc*. 2008;67(6):791-798.
2. Wilson W, Taubert KA, Gewitz M, et al. Prevention of infective endocarditis: guidelines from the American Heart Association: a guideline from the American Heart Association Rheumatic Fever, Endocarditis, and Kawasaki Disease Committee, Council on Cardiovascular Disease in the Young, and the Council on Clinical Cardiology, Council on Cardiovascular Surgery and Anesthesia, and the Quality of Care and Outcomes Research Interdisciplinary Working Group. *Circulation*. 2007;116(15):1736-1754.
3. Goenka MK, Kochhar R, Mehta SK. Spectrum of lower gastrointestinal hemorrhage: an endoscopic study of 166 patients. *Indian J Gastroenterol* 1993;12:129-31.
4. Probert CS, Jayanthi V, Pinder D, Mayberry JF. Epidemiological study of ulcerative proctocolitis in Indian migrants and indigenous population of Leicestershire. *Gut* 1992;33:687-93.
5. Rockey DC, Cello JP. Evaluation of the gastrointestinal tract in patients with iron-deficiency anemia. *N Engl J Med* 1993;329:1691-5.
6. Zuckerman G, Benitez J. A prospective study of bidirectional endoscopy (colonoscopy and upper endoscopy) in the evaluation of patients with occult gastrointestinal bleeding. *Am J Gastroenterol* 1992;87:62-6.
7. Fireman Z, Gurevich V, Coscas D, et al. Results of gastrointestinal evaluation in 90 hospitalized iron deficiency anemia patients. *Isr Med Assoc J* 1999;1:232-5.
8. Minoli G, Meucci G, Bortolli A, Garripoli, Leo P, Pera A, et al. The ASGE guidelines for the appropriate use of colonoscopy in an open access system. *Gastrointest Endosc* 2000;52:39-44.
9. Berkowitz I, Kaplan M. Indications for colonoscopy. An analysis based on indications and diagnostic yield. *S Afr Med J* 1993;83:245-8.
10. Endoscopic Selection Committee of the British Society of Gastroenterology. Future requirements for colonoscopy in Britain. *Gut* 1987;28:772-5.
11. Ko CW, Dominitz JA. Complications of colonoscopy: magnitude and management. *Gastrointest Endosc Clin N Am* 2010;20:659-71.
12. Nelson DB. Infectious disease complications of GI endoscopy: part II, exogenous infections. *Gastrointest Endosc* 2003;57:695-711.
13. Banerjee S, Shen B, Baron TH, et al. Antibiotic prophylaxis for GI endoscopy. *Gastrointest Endosc* 2008;67:791-8.