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An Analytical Study of Colorectal Pathologies Using Colonoscopy as an Aid.

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I. Introduction

The word "endoscopy" is derived from the Greek literature by combining the prefix "endo" meaning "within" and the verb "skopein" meaning "to view with a purpose, to observe with intent and to monitor ". The result is an adequate term for the procedure of peering into the recesses of the living body.

Before the invention of Endoscopy the gastrointestinal tract and its pathologies remained a puzzle for the medical fraternity. The gastrointestinal tract which is home to a variety of pathologies was assessed on the basis of clinical diagnosis and laboratory investigations. Barium studies gave only an indirect interpretation of the underlying pathology.

Endoscopy today gives us a chance to view and assess the type, the severity and sometimes even treat certain pathologies for e.g. polypectomy done through an endoscope or variceal banding.

Colon and the Rectum is what forms the major part of the lower half of the gastrointestinal tract. And Colonoscopy is the endoscopy of this lower gastrointestinal tract. The parts viewed in a colonoscopy are starting from the anal verge the anorectal junction, the rectum, the sigmoid colon, the descending colon, the splenic flexure, the transverse colon, the hepatic flexure, ascending colon the caecum the ileocaecal valve and also the distal part of the ileum.

The various pathologies that we come across are inflammatory bowel disease, ulcerative colitis, polyposis, intestinal tuberculosis, diverticulosis, colitis, amoebic colitis, AV malformations
and Colorectal malignancies.

Highlighting the last pathology is necessary as it is one of the major concerns for oncologists in today's scenario!!

Colorectal malignancy is one of the most common causes of death due to malignancies, ranking just behind lung cancer, among types of cancer that affect men and women.

Most cancers of the colon begin as polyps—small, slow-growing, mushroom like growths on the inner surface of the colon. Mutations in the genes that control cell division lead to more rapid growth and eventually invasion into the wall of the colon and beyond. Colonoscopy enables early detection as well as therapeutic polypectomy before it invades and spreads.

As Polyposis runs in families (Familial polyposis syndrome) and is also a premalignant condition experts recommend several effective screening methods for early detection in families as well as sporadic. One is testing for blood in the stool every year. Another is to inspect the entire colon through a flexible tube (colonoscopy), which is the most accurate.

The various symptoms with which a colorectal pathology may present are Pain in abdomen, Diarrhea , Constipation , Alternate bowel habits, Chronic anemia, Bleeding PR, Significant weight loss, Distension of abdomen , Lump in abdomen, Something coming out per anus. A simple bleeding PR may be a presenting symptom of as simple as an acute fissure or hemorrhoids or the most dreaded a malignant growth higher up in the rectum or colon.

We see a fair number of cases of colorectal malignancies. Polyposis, malignancy, ulcerative colitis have familial origin also. These are just a few examples of people who do require a colonoscopy for early and for precise diagnosis and effective treatment of the disease.

Development of teaching endoscopes and training modules has helped to build expertise in this field.

Virtual endoscopy and capsule endoscopy are the upcoming promising modalities for colorectal pathologies.

The role of colonoscopy as a screening diagnostic and therapeutic modality for colorectal pathologies has been well proven. Hence, this study.

Aims and Objectives

To define the role of colonoscopy in diagnosis of colorectal pathologies.

Objectives

- To study the spectrum of colorectal pathologies

- To do an analytical study of various colorectal diseases and study the co-relation between clinical diagnosis and colonoscopic findings.
- To screen the family members of known cases of colorectal malignancy.
- To study the therapeutic applications of colonoscopy.
- To study the relation of age and other factors with colorectal malignancies after diagnosis by colonoscopy.
- To study the metacronous pathologies in diagnosed cases of haemorrhoids.

Endoscopy examination room

The room should be equipped with plenty of cupboards, good sinks, power points and work surfaces. Windows should have black out curtains and the light should be dimmable. The doors should be wide for transportation of equipment. Oxygen, suction and resuscitation equipment must be available. Adequate arrangements for extinguishing odors , clinical and chemical should be made. Proper cleaning and timely disinfection are desirable.

Bowel preparation

Success of a procedure depends mainly on proper preparation. A wide array of regimes is available. No single regime will work perfectly on a patient, as patients and colon vary. The doctor should talk to the patient and individualize the preparation regime. Standard principles

- Oral iron preparation is stopped 3-4 days before, since iron tannate produces inky black stools which hamper visualization and are difficult to clear.
- The patient is kept on a low residue diet for 48 hours preferably on clear liquids for 24 hours prior to colonoscopy.
- Purgation given should produce fluid diarrhoea. Most widely used purge is castor oil 30-40ml which acts on small and large intestine. Huge doses of senna preparation work equally well. Osmotic purgatives like MgSo4 or Mg citrate are effective, but patients' response is variable.
- High fluid intake has to be ensured.

Preparation in special circumstances:

Relapse of inflammatory bowel disease e.g. ulcerative colitis may occur due to vigorous preparation. The cause is mainly mechanical. There is no evidence that castor oil is provocative. Senna and MgSo4 are also well tolerated. In patients with diarrhoea, only bowel washes suffice.

Colostomy patients are difficult to prepare. Strong purgative attempts at colostomy enemas and use of good stoma drainage bag is required.

In patients with active colonic bleed, blood itself serves as a good purgative. Only washouts to clean the lumen may be enough. Nasal tube or oral lavages are useful since they are quicker and wash out blood distal to bleeding point.

II. Materials And Methods

Our study was prospective one conducted in a large general hospital.

Patient selection:

All patients with colonic symptoms likely to benefit from colonoscopy were included. Patients were referred to us from other specialities and surgical units also. Most of the patients admitted. A few young, fit reliable patients were asked to come on opd basis. Most cases of polypectomy were indoor patients. Careful history was taken and physical findings were recorded. Per examination, proctoscopy and stool examination were done. Ultrasound and CT examination were done when possible.

Preparation of the patient:

For the initial 7-9 months of the study, following was our routines:

- Stop iron containing tablets for 3 days
- Liquid diet for 2 days
- We used exelyte
- Oral fluids intake was encouraged, hydration was carefully monitored
- In patients with history of diarrhea two bowel washes were given

Place:

All scopies were performed in the ward side room, where specials fittings were made for suction and light source. After the scopy, patients were monitored in respective wards. Hourly TPR chart was kept and PR

bleeding, abdominal tenderness and distension were looked for. Usually alms copies were done as routine procedures; after all basic investigations were available.

Instrument:

The details of the scope are as follows:

1. Field of view- 155
2. Observation range- 4-12mm
3. Distal and diameter- 14mm
4. Flexible section diameter- 14mm
5. Bleeding capacity
   -Up and down - 180
   - Left and right - 60
6. Forceps channel diameter -3.7mm
7. Working length-1735mm
8. Total length -1990mm

High power suction with two bottles of 500cc capacity was used. Lubricant used was xylocaine jelly. We had two punch biopsy forceps without spike and a brush biopsy forceps. A commercially made hexagonal polypectomy snare was available.

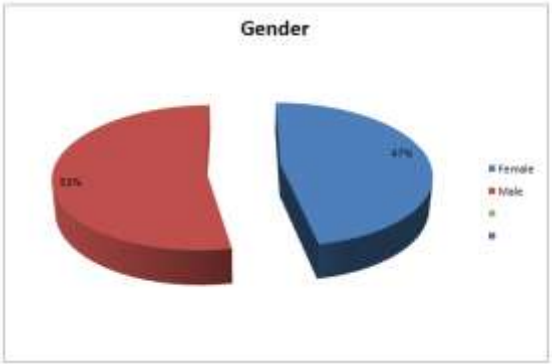
Records were kept by taking photographs with cameras. Biopsis were sent immediately to the pathology department in normal saline bulb or 10% formalin solution.

Table 1

Gender	Number of Patients	Percentage (%)
Male	80	53.33
Female	70	46.67
Total	150	100

Observations

1. Gender wise distribution of patients.

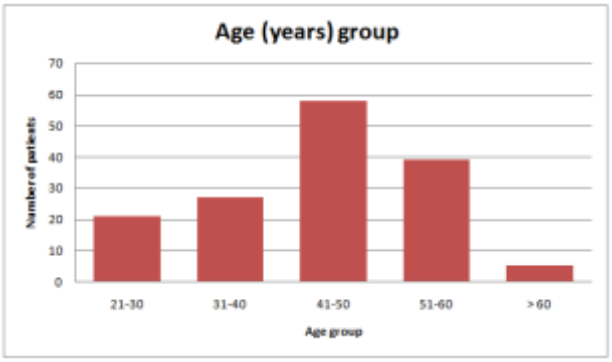


Graph 1

2. Distributioin of patients with respect to age (years) group.

Table 2

Age group	Number of patients	Percentrage (%)
21-30	21	14
31-40	27	18
41-50	58	38.67
51-60	39	26
> 60	5	3.33
Total	150	100

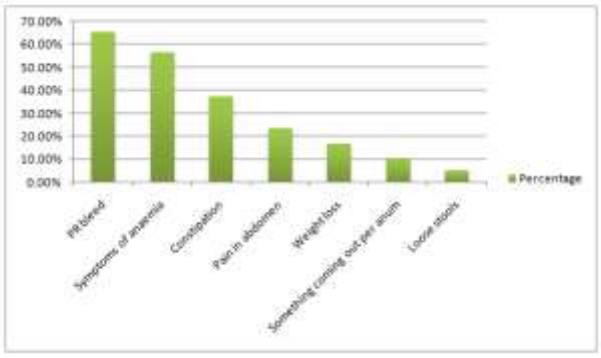


Graph 2

3. Distribution of patients with respect to complaint

Table3

Complaints	Total no	Percentage
PR bleed	98	65.33%
Symptoms of anaemia	85	56.67%
Constipation	56	37.34%
Pain in abdomen	35	23.43%
Weight loss	25	16.67%
Something coming out per anum	16	10.67%
Loose stools	8	5.34%

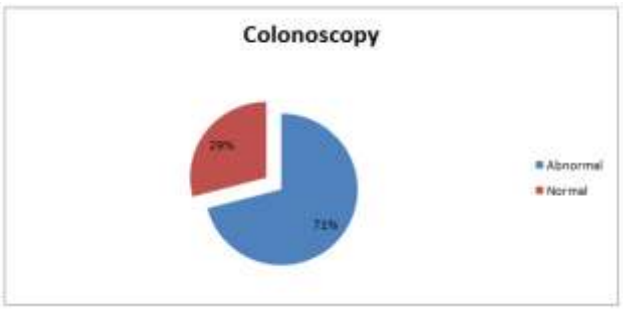


Graph 3

3. Distribution of patients with respect to Colonoscopy findings.

Table 4

Colonoscopy	Number of patients	Percentage (%)
Normal	107	71.33
Abnormal	43	28.67
Total	150	100



Graph 4

Table 5

Colonoscopy	Number of patients	Percentage (%)
Malignancy	24	55.81
heoceacal Koch's	4	9.3
IBD	5	11.63
Polyp	8	18.6
Subacute intestinal obstruction	1	2.38

4. Occurrence of various pathologies with PR bleed is positive (n= 98)

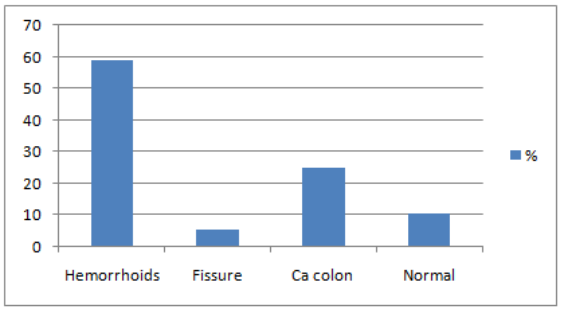
Table 6

PR bleed	Number of patients	Percentage (%)
IBD	4	4.08
Ileocaceal Koch's	4	4.08
Polyp	4	4.08
Ca colon	20	20.41
Hemorrhoids	54	55.1
Fissure	12	12.24

5. Distribution of colonoscopic findings in patients presenting with constipation

Table 7

Constipation	Total 56	%
Hemorrhoids	33	58.9
Fissure	3	5.35
Ca colon	14	25
Normal	6	10.7

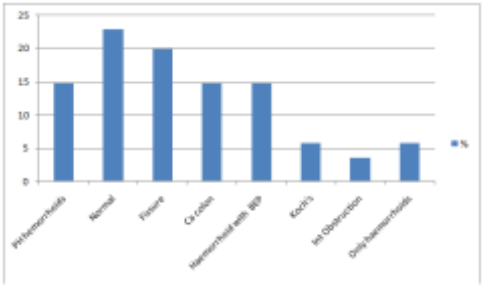


Graph5

6. Distribution of colonoscopic findings in patients presenting with pain in abdomen.

Table 8

Pain in abdomen	Total 35	%
PH hemorrhoids	5	14.8
Normal	8	22.86
Fissure	7	20
Ca colon	5	14.8
Haemorrhoid with BEP	5	14.8
Koch's	2	5.71
Int Obstruction	1	3.5
Only haemorrhoids	2	5.7

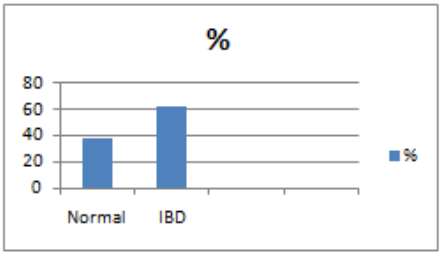


Graph 6

9. Distribution of colonoscopic findings in patients presenting with loose motions

Table 9

Loose stools	Total 8	%
Normal	3	37.5
IBD	5	62.5

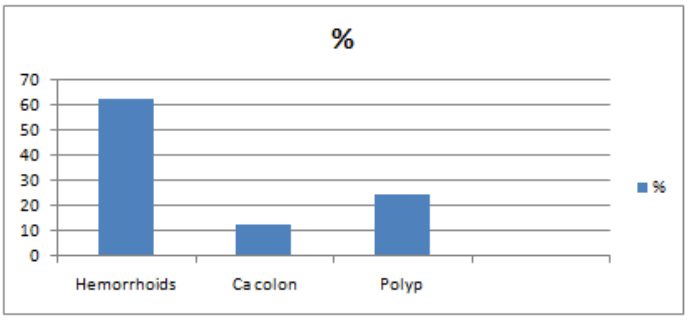


Graph 7

10. Distribution of colonoscopic findings in patients presenting with something coming out per rectum (SCOPR)

Table 10

SCOPA	Total 16	%
Hemorrhoids	10	62.5
Ca colon	2	12.5
Polyp	4	25

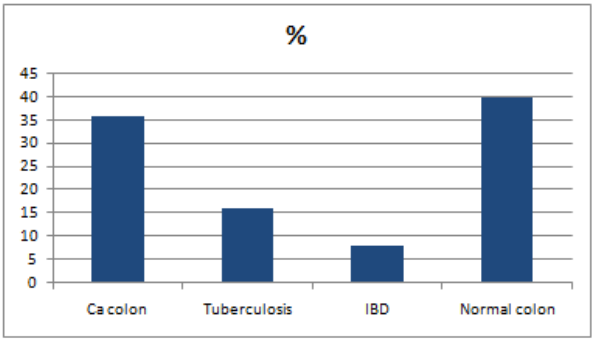


Graph 8

11. Distribution of colonoscopic findings in patients presenting with weight loss

Table 11

Weight loss	Total 25	%
Ca colon	9	36
Tuberculosis	4	16
IBD	2	8
Normal colon	10	40



Graph 9

12. Distribution of patients with respect to biopsy.

Table 12

Biopsy	Number of patients	Percentage (%)
Yes	34	22.67
No	116	77.33
Total	150	100.00

13. Distribution of colonic malignancies as per the complaints with which the patient presented.

Table 13

Complaints	No of malignancies deltected	%
PR Bleed	12	50
Pallor	16	66.6
Constipation	14	58.3
SCOPR	2	8.3
Wt Loss	9	37.5
Pain in abdomen	7	29.16

14. Distribution of patients with respect to type of malignancy.

Table 14

Type of malignancy	Number of Patients	Percentage (%)
GIST	1	4.17
Ca bladder	1	4.17
Colonic Malignancy	22	91.67

15. Distribution of patients with respect to side of colonic malignancy.

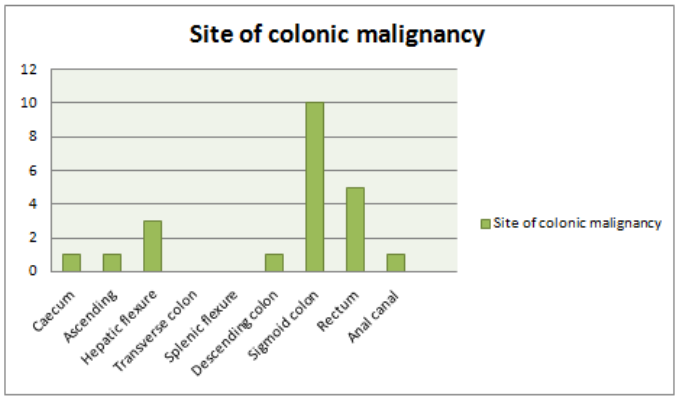
Table 15

Side	Number of patients	Percentage (%)
Left	17	77.27
Right	5	22.73
Total	22	100

16. Distribution of patients with respect to site of colonic malignancy.

Table 16

Site of colonic malignancy	Number of patients	Percentage (%)
Caecum	1	4.55
Ascending	1	4.55
Hepatic flexure	3	13.64
Transverse colon	0	0
Splenic flexure	0	0
Descending colon	1	4.55
Sigmoid colon	10	45.45
Rectum	5	22.73
Anal canal	1	4.55
Total	22	100



Graph 10

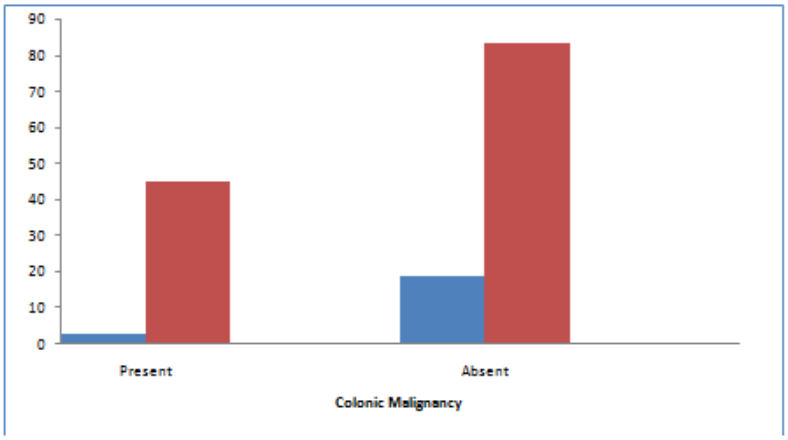
17. Age group vs Colonic malignancy

Table 17

Age group	Colonic malignancy		Total	p-value
	Present	Absent		
≤ 40	3	45	48	0.046*
> 40	19	83	102	

III. Conclusion

By using Chi-square p-value < 0.05 therefore there is association between the age (years) and colonic malignancy.

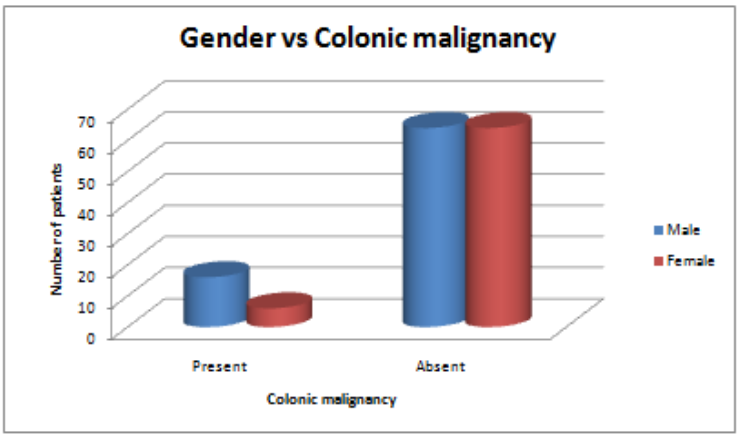


Graph 11

18. Gender vs Colonic malignancy

Table 18

Gender	Colonic malignancy		Total
	Present	Absent	
Male	16	64	80
Female	6	64	70



Graph 12

19. Distribution of patients with respect to family history of colonic carcinoma and occurrence of colonic carcinoma.

Table 19

Family history of Colonic carcinoma	Colonoscopy findings		Total
	Present	Abnormal	
Present	12	2	14
Absent	31	105	136

20. Occurrence of various pathologies with hemorrhoids is positive (n=86)

Table 20

Diagnosis on colonoscopy	Number of patients	Percentage (%)
Ca colon	23	26.75
Hemorrhoids only	34	39.5
Hemorrhoids with BEP	24	27.9
Hemorrhoids with PH	5	5.8

IV. Discussion

Consecutive patients either presenting to or referred to our department for colonoscopy were included in this study. Thus the study gives us a fair indication of the presentation and patterns of colonic disorders likely to undergo colonoscopy in this region of India.

Considering the presenting symptoms, the patients presented to the or surgery or medicine OPD with various complaints like per rectal bleeding, constipation, loose motions, pain in abdomen, fullness of abdomen, generalized weakness and fatigability, weight loss, black stools and something coming out per rectum.

Out of the total 150 patients, the male to female ratio was seen to be almost equal. There 53.3% colonoscopies in males and 46.7% colonoscopies in females. Out of all the male colonoscopies 37.5% colonoscopies had positive colorectal pathologies detected whereas in females 22.9% colonoscopies had positive findings. Various studies have proved that men have a higher incidence of being diagnosed with colorectal pathologies on colonoscopy[27].

There is a significant difference seen in the number of patients in the various age groups. Maximum numbers of patients' i.e.38.67% were in the age group of 41 to 50 years. The next commonest group to be affected was 61 to 70 years. There were 26% patients presenting in this group. There were 14% patients in the age group of 21 to 30 years and 18% patients in the age group of 31 to 40 years. Only 3.33% patients were more than 60 years of age. A number of factors act in determining the presenting age group like spectrum of the colorectal pathologies in various age groups, the education and awareness of patients, the willingness to undergo instrumentation, the severity of symptoms, and economical factors.

Out of the total 150 colonoscopies performed for various indications in various age groups, 108(71.33%) colonoscopies showed normal results (Table4,Graph4). Among the 42 abnormal colonoscopies, there were 24 malignancies, 5 inflammatory bowel disease, 4 intestinal tuberculosis, 8 polyps and 1 subacute intestinal obstruction diagnosed through colonoscopy (Table5).

Though maximum positive colonoscopy findings were seen in 21 to 30 and 31 to 40 years age group, maximum number of was present in 41 to 50 and 51 to 60 years age groups. Inflammatory bowel disease, intestinal tuberculosis and colorectal polyps were the commonest diagnosis in the younger age group. Florianello and Cason R[12] stated in their study that the increasing incidence of large bowel disease is age related.

The commonest symptom bringing the patients to the hospital was per rectal bleeding. 65.33% patients presented with per rectal bleeding which included both acute as well as chronic bleeding. The 2nd commonest presentation of a set of symptoms of anaemia i.e. weakness, early fatigability and had pallor. Total 56.67% presented like this. Pain in abdomen and constipation brought 23.43% and 37.34% respectively to the hospital.

Other symptoms with which patients presented with were weight loss (16.67%), something coming out per rectum(10.67%) and loose motions(5.34%) while a small number of patients presented with distension of abdomen, umbilical swelling, hematuria and symptoms of bladder outlet obstruction. Majority of patients presented with more than one symptom at a time.

Per rectal bleeding:

Rectal bleeding is a common symptom, with a prevalence of 14% to 19% in adults. Most patients bleed from benign sources such as haemorrhoids and diverticula, but others have serious colorectal disease colon cancer, adenomatous polyp, and inflammatory bowel disease (IBD).

Though 55.10% of patients with per rectal bleeding were found to have only haemorrhoids on colonoscopy, rest of the 45% had positive colonoscopy findings. 20.41% of patients with pre rectal bleeding had some form malignant lesion on colonoscopy which was confirmed on biopsy. 8patients with per rectal bleeding and ulcerative lesions on colonoscopy out of which 4 patients were confirmed to have ulcerative colitis on biopsy reports and the remaining 4 patients had tuberculosis.

4 patients were found to have polyps with active ooze causing hematochezia. They were treated by excision snare cautery.12 patients had absolute normal colonoscopy with acute fissures visible on per rectal examination. They were treated conservatively with stool softeners and local anaesthetic lubricants and were advised diet modifications and Seitz bath.

99 patients with per rectal bleeding were evaluated with colonoscopy by Metcalf et al[28]. 44.4% were seen to have serious colorectal pathologies. 28 patients had only haemorrhoids with rest of the colon normal. 11

patients had absolutely normal colon. There were 25 cases of polyp diagnosed were as only 8 cases of colorectal malignancy were diagnosed.

Patients presenting with Constipation:

There were total 56(37.34%) patients presenting with either constipation or o5.35% of these patients had chronic fissures causing obstipation with the rest of the colon normal. 58.9% of patients were found to have haemorrhoids on colonoscopy with rest of the colon normal. 255 of patients presenting with constipation were found to have suspected malignant lesions on colonoscopy which were confirmed with biopsy and histopathology.

39 patients with complaints of constipation were subjected to colonoscopy in a study by Metcalf et al[28]. 14 patients were diagnosed with only haemorrhoids while 2 colonoscopies were completely normal. 1 patient had colorectal malignancy, 10 patients were diagnosed with polyps. Though a significant difference is seen in the finding of our study and study by Metcalf et al, especially in the low incidence of malignancy it can be explained by the large number of polyps detected which is a premalignant condition for colorectal carcinoma.

Patients presenting with pain in abdomen:

There were total 35 patients who presented with either acute or chronic pain in abdomen. Most of them presented with chronic dull aching or chronic intermittent colicky pain in abdomen. On subjecting them to colonoscopy after bowel preparation 22.86%(8 patients) had a normal colonoscopy while 20%(7 patients) had only fissures present with rest of the colon normal.

There were 12 patients whose colonoscopy revealed only haemorrhoids. Out of those 5 had portal hypertension and 5 had benign enlargement of prostate diagnosed on ultrasonography of abdomen.

2 patients presenting with right sided pain in abdomen and weight loss were diagnosed to have intestinal tuberculosis on colonoscopy and histopathological examination and culture reports of the lesions.

There were 5 cases presenting with pain in abdomen, weight loss and altered bowel habits that had malignant lesions on colonoscopy. 2 of those were carcinoma sigmoid colon, 1 was carcinoma caecum and 1 was carcinoma ascending colon. 1 pateints presenting with subacute obstruction had a descending colon lesion beyond which the scope could not be negotiated. There were 2 cases with pelvic malignancies not involving the colon but the mass compressing the wall and narrowing the colonic lumen as seen on colonoscopy. 1 was carcinoma bladder and another was a gastrointestinal stromal tumour.

In 1 more patient presenting with subacute intestinal obstruction and pain in abdomen, the scope could not be negotiated beyond splenic flexure which was due to adhesions formed following previous surgery.

Metcalf et al[28] performed colonoscopy on 42 patients presenting with pain in abdomen. Out of them, 7 patients had normal colonoscopy. 18 patients had haemorrhoids on colonoscopy. There were 6 patients with inflammatory bowel disease. 3 patients were diagnosed with colorectal malignancy. 4 patients had polyps on colonoscopy and 4 others had diverticulum.

Patients presenting with loose motions:

8 patients presented with loose motions. All of them were prepared with only plain water bowel washes/enemas. Preparation was adequate in all of them. 3 of them had a normal colon on colonoscopy.

5 of them had ulcerative lesions which on biopsy showed inflammatory changes. These patients responded well to medical treatment for inflammatory bowel disease that is Mesalazine and none required any intervention or steroid therapy.

27 patients with loose motions were examined by Metcalf et al[28] by colonoscopy. 3 colonoscopies were normal, 7 patients had haemorrhoids. 8 patients had inflammatory bowel disease.5 patients had polyps and 2 had colorectal malignancy. The variation can be attributed to the more number of cases studied and the variation in age groups. Only patients more than 40 years were considered for their study.

Patients presenting with something coming out per rectum:

16 patients presented with something coming out per rectum. 12 of them were palpating prolapsed haemorrhoids where as the remaining 4 had polyps protruding out of the anal verge. 10 patients had only prolapsed haemorrhoids with normal colon on colonoscopy. 2 patients had prolapsed haemorrhoids with recto sigmoid colonoscopies which were found to be malignant lesions histopathology.

There were 4 patients who came with something coming out per rectum and were found to have a polyp protruding out of the anal verge on per rectal examination and proctoscopy. Colonoscopy was carried out in these patients to look for any other metachronous lesions higher up in the colon to rule out multiple polyps or any other malignant lesion. None were found. All 4 polyps were seen to be arising from rectum and had long peduncles. None were inflamed and none showed active bleeding. Excision biopsy was performed for all 4 patients and the polyps benign on histopathological examination.

Patients presenting with weight loss:

25 patients presenting with complaints of weight loss underwent colonoscopy. All the 25 patients had other accompanying complaints like pain in abdomen, weakness, altered bowel habits etc. On colonoscopy, 40% patients (10 patients) showed normal colon.

36% (9 patients) were diagnosed to have colonic malignancy. 5 patients presented with weight loss, constipation, loss of appetite, blood in stools. Ulceroproliferative lesions were seen in the sigmoid colon on colonoscopy which were found to be malignant on histopathological examination of the biopsy sample from the lesion.

Colonoscopy revealed ulcerative lesion in 6 patients out of which 2 showed inflammatory changes and the remaining 4 were tuberculous.

15 patients with complaints of loose motions underwent colonoscopy in Metcalf et al[28] study. 2 colonoscopies were normal, 2 showed only haemorrhoids, 3 were diagnosed inflammatory bowel disease. There were 4 patients with colonoscopic findings of polyp and 2 patients had colorectal malignancy. The difference in age groups considered can be the reason for this variation as inflammatory bowel disease and intestinal tuberculosis is common in younger age groups.

Procedures performed (Table 12):

34 patients underwent biopsy during colonoscopy. 8 patients had polypoid lesions diagnosed on colonoscopy for which therapeutic excision biopsy was carried out. These lesions were removed in toto by snare cautery and sent for histopathological examination. All 8 polyps were benign. Only 1 patient experienced blood in stools after the procedure which stopped within 24 hours.

Williams and Muto[46] reported removal of 75 polyps by diathermy snare from 43 patients. Only 4 had hemorrhage but all were discharged within 24 hours.

The remaining 26 were ulcers or ulceroproliferative lesions which required biopsy for differentiation or confirmation of diagnosis. None experienced complicating hemorrhage.

Evaluation of colonic malignancies diagnosed on colonoscopy:

Total 24 abdominal malignancies were diagnosed on colonoscopy. 22 of them were diagnosed with frank visible lesions that were biopsied and malignancy confirmed. 2 others were seen as luminal narrowing due to external compression on colonoscopy. They were diagnosed a gastrointestinal stromal tumour and carcinoma bladder with help of other investigations like ultrasonography of abdomen pelvis and computed tomography scan (Table 14). Most of the patients had ulcers or ulceroproliferative growths. Biopsies were conclusive from each of them. We were able to screen the rest of the colon in 23 patients to demonstrate the absence of any metachronous tumours.

Complaints with which colonic malignancies presented:

50% of patients (12 patients) presented with per rectal bleeding. 66% had anaemia, malaise, weakness. 58.3% presented with constipation. 29% had pain in abdomen while 37.5% patients had significant weight loss. Majority of these patients presented with 2 or more symptoms. 2 patients presented with something palpable coming out per rectum and were found to have malignant lesions with prolapsed haemorrhoids (Table 13).

Site of malignancy:

Out of 22, 17 were involving left side of colon whereas 5 malignancies were present in right side of the colon (Table 15). There was 1 malignancy in caecum, 1 malignancy in descending colon. 3 patients had malignant lesions at hepatic flexure. No patients were found with transverse colon or splenic flexure lesions. There was 1 malignancy in descending colon and 1 malignancy in anal canal.

10 patients were found to have lesions in sigmoid colon(45.45%) and 5 patients had lesions in rectum(22.73%) (Table 16.Graph10)

Metcalf et al[28] studied 99 patients with rectal bleed. 8 patients were diagnosed colorectal malignancy. Only 1 patient had a lesion in the caecum. The rest 7 patients(87.5%) had lesions in the rectosigmoid region.

Age and colonic malignancy:

Out of the total 22 malignancies detected on colonoscopy, 3 were below the age group of 40 years were 19 colorectal malignancies were above the age group of 40 years. Comparing with the total number of colonoscopies performed in these age groups, 6.25% patients of the total 48 colonoscopies in patients below 40 years had malignant lesions. Whereas out of 102 patients studied above 40 years 22.9% patients had malignant lesion on colonoscopy. Thus there is association between patients' age and occurrence of colorectal carcinoma (Table 17, Graph 11). Colorectal carcinoma is uncommon below the age 40 years and the incidence increases

rapidly thereafter, with an approximate doubling with each decade of life. Nicholson F.B: Population screening for colorectal cancer[33].

Gender and colonic malignancy:

There were total 80 males and 70 females who underwent colonoscopy. Out of 80, 16 males (20%) were detected to have malignant lesions on colonoscopy and were confirmed by biopsy. Whereas only 6 females(8.5%) had malignant lesions. Our series showed a significant male preponderance on colonic malignancy. (Table 18, Graph 12)

Haemorrhoids and colonic malignancy:

A total of 86 patients had haemorrhoids seen on per rectal examination and colonoscopy. 23 patients (26.75%) of these were diagnosed with malignancies. (Table 20)

Screening of patients with positive family history for colonic patients:

Our series had 22 colonic malignancies diagnosed on colonoscopy. All 22 families were counselled regarding screening for colonoscopy of 1st degree relatives for family members above the age of 40 years. Only 12 individuals with a family history of colonic malignancy underwent colonoscopy. 2 patients had positive colonoscopy findings in the form of polyps which were found benign on colonoscopy. The number of patients undergoing screening in our series was small to comment upon the significance of screening colonoscopy in 1st degree relatives of colonic malignancies.

However, Love et al[24] screened 41 asymptomatic patients with positive family history for colonic malignancy. 7 had adenomas or vilious polyps, out of which 2 were malignant and 1 showed epithelial atypia. 3 had multiple lesions.

The low compliance for screening can be attributed to various factors such as unwillingness to undergo an invasive procedure, fear of bowel preparation, economic status of the family[43.]

Bibliography

[1]. Aston N.D, Owen W.J, Ioving J.O.: Endoscopic balloon dilation of colonic anastomotic strictures. BJS-1989 (780-782)
[2]. Avgerinos A, Kalantzis N, Rekoumisg: Bowel preparation and the risk of explosion during colonic polypectomy. Athens- GUT, 1984 15/4 (361-364)27.
[3]. Banez A.V, Bozek S.A., Simon R.F. (Ohino); Double endoscope method for multiple colonic polypectomy. Gastrointestinal Endoscopy 1987 33/1 (32-52).
[4]. Bedogini, Ricci Pedrazzoli: Endoscopic dilatation of anastomotic colonic strictures by different techniques: an alternative to surgery. Gastrointestinal Endoscopy 1987 33/1(21-29)76.
[5]. Bharagava D.K., Tandon H.D., Chawala (delhi): Diagnosis of ileocaecal and colonic Koch's by colonoscopy. Gastrointestinal Endoscopy. 1985- 31/2(68-70)14
[6]. Bohmer F.B.: regression of inflammatory abdominal mass after endoscopic removal of foreign body. Gastroenterlogy 1983 21/2 (85-88)
[7]. Brunetard J.M Maunaur, Puerothe P: Pallitive treatment of recto-sigmoid cancer of laser endoscopic photo ablation. Gastroenerology 1987 92/2m (633-8) 36-44
[8]. Charles W. Scowcraft, Robert Sanowski, R. Kozarek; Colonoscopy in ischemic colitis; Gastrointenstinal Endoscopy, Volum27, issue 3, Aug 1981(156-161)
[9]. Coughin G.P, Butter R.N.: Colonoscopy and bacteremia. A/P GUT 1977 13/8(678-679)53
[10]. Dixon J.A., Burt R.W., Rotering R.H., Endoscopic argon laser photocoagulation of small sessile colonic polyps. Gastrointestinal Endoscopy 198 28/3 (162-5)
[11]. Felice G.D., Italy: Sigmoid Volvulus treated by colonoscopy. Gastrointestinal Endoscopy 1986 32/3(144)74
[12]. Florianello, Caron R,G. Chir; Colorectal pathology: An analysis and comparison between patients of different ages. 1993Apr-May: 14(4-5)223-5
[13]. Forde K.A., Waye J.M.: is there need to perform full colonoscopy in a middle aged person with bright red blood per rectum episodically and int. hemorrhoids. Am. J. Gastroenterol. 1988 84/10 (12-27)80
[14]. Gaylord Stanford, Colonoscopy appendectomy. Gastrointestinal endoscopy volume 27,issue 3-Aug 1981,page 2013
[15]. Ghazi, Grossman: Complications of colonoscopy and polypectomy. Surg. Clin. N.A.1982(880-895)80
[16]. Ghazi, H Shinya, W.Wolfe: Treatment of volvulus of colon by colonoscopy. Am Surg. 1976 March 183(3):263-265
[17]. Gores P.F./Slims L.A: Splenic injury during colonoscopy . Archives of Surgery. 1989 123/1(1342)
[18]. Gould S.R, William C.P., Caster oil or senna preparation before colonoscopy for inactive chronic ulcerative colitis. Gastrointestinal Endoscopy 1982 28/1,(6-7)56
[19]. H.J. Espiner , R.H. Teague, P.R. Salmo, Operative Colonoscopy , British Medical Journal 1973
[20]. H. Niwa, Y Sakai, C.B. Williams: Colonoscopy Practice and Principles, History of colonoscopy in rectum and colon. (1-20)
[21]. Howard O.M., Buchanan J.P, Hunt R.L., Angiodysplasia of colon, 26 cases Lancet 1982 2182/889(16-19)
[22]. Khwaja F.I., Vakil N.: Colonoscopy as an aid in diagnosis of nonspecific ulcers of colon. USA. Gastrointestinal Endoscopy. 1987 33/1 (43-45).
[23]. Labrooy S.J., Fendic, Averginos: Potentially explosive colonic concentration of H2 after bowel preparation Mannitol. Lancet 1981 ¼ (634).
[24]. Long B.W., Raynolds J, Gohd U.K.: Colonoscopic instillation of Na ditriazoate, Radiology confirmation of endoscopically undetected polyp, Gastrointestinal Endoscopy 1982, vol. 28/2(93/94)
[25]. Love R.R., Morrissey J.T.: Colonoscopy in asymptomatic individuals with family history of colorectal cancer. USA. Arch. Intern. Med. 1984 144/11(2209-11)

[26]. M.Tada, F. Misaki et al; Analysis of clinical features of ischemic colitis; journal of gastroenterology, volume 18, number 3, 204-209
[27]. McAshland, Brand R,Lyden E, deGarmo P Gender differences in colorectal polyps & tumors., CORI Reasearch Project Dept of Medicine, University of Nebrasksa Medical Centre, Omaha, USA. Am J Gastroentrology. 2001 March; 96(3); 882-6
[28]. Metcalf JV, Smith J: Incidence and causes of rectal bleeding in general practice as detected by colonoscopy. Br J Gen Prac. 1996 Mar; 46(404)161
[29]. Meyer G.W.: Prophylaxis of infective endocarditis during colonoscopy: report of a survey. Maryland Gasrointestinal Endoscopy 1981 30/4 (231-232)
[30]. Minervini S., Alexander-Williams J, Donavan I.A., Bentleys, Keighley M.R. Comparison of three methods of whole Bowel Irrigation. Am J Surgery 1980; 140:400-2
[31]. Nelson R., Abcarian H., Prasad M.L.: Iatrogenic perforation of colon and rectum. Chicago, Dis. Colon. Rectum 1984 25.4 (305-308)
[32]. Newstead G.L. & Morgan B.P., Medical Journal of Australia 2582-2583
[33]. Nicholson F.B: Population Screening for colorectal cancer. Alimentary Pharmacology Therapeutics 2005; 22:1077
[34]. Patel N.M.: Paroxysmal ventricular complexes during colonoscopy. Gastointestinal Endoscopy. 1986 32/2
[35]. Peura Q.A.: AIDS: The scope of problem and problem of scope. USA Gastroenterology. 1987 33/2 (122-123).
[36]. Ponsky J.L., A.S.Zodi A, Pesse D. Percutaneous endoscopic cecostomy: A new approach to non obstructive colonic dilatation. Gastrointestinal endoscopy 1986 32/2
[37]. RichterJ.M, Hedberg S.E Boston; Angiodysplasia, Clinical presentation and Colnoscopic Diagnosis USA, Dig. Dis. Sci. 1984 29/6(481-485)
[38]. Schmidt, Borsch, Ruhr: Subcutaneous emphysema and pneumothorax in diagnostic colonoscopy. Univ. Dis. Col. Rec. 1986 29/2 (136-138)
[39]. Shah Nayan C; Ostrove, Oavallero J.B; Beingn Ulcer of colon. Gastrointestinal endoscopy 1986 32/2(105-107)
[40]. Starling J.R, Vehling, Gitchright: Value of colonoscopy after uretero-sigmoidoscopy, USA surgery 1984 96/4 (789-790)
[41]. Stretolovasky V.P, Khankin S.L, Gorbechov: Endoscopic microsurgery of colon. Moscow endoscopy 1984 16/5 (179-181)
[42]. T.Mahonex, M Bubrick: diseases of colon & rectum. Non specific ulcers of colon. Page 623-636, volume 21, no8
[43]. V. Connett et al: Low compliance with colonoscopy screening in first-degree relatives of patients with large adenomas. Alimentary Pharmacology and Therapeutics
[44]. Vincent, Smith: Management of perforation due to colonoscopy. USA. Diseases of colon and rectum 26(61-63)
[45]. Waye J.P.: Dysplasia and ulcerative colitis-a colonoscopy study. New York. Scand.J. Gastroenterology. Suppl. 1983 18/88 (44-47)
[46]. Williams, T. Muto, Colonoscopy and polypectomy in diagnosis and treatment of early carcinoma of the large intestine: diseases of colon and rectum. Volume 23,68-75
[47]. Janardhan Ravi: Endoscopists nose. Pennsylvania. Gastrointestinal endoscopy 1986 32/33 (284)