IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 21, Issue 11 Ser.1 (November. 2022), PP 20-26
www.iosrjournals.org

A Spectrum of Large Intestinal Lesions with Clinicopathological Correlation in a Tertiary Care Hospital

Christopher K S[1],Rajini K[2],Sujatha C[3],Venkatalakshmi A[4]

1. *K.Sandra Christopher,Postgraduate,Sri Venkateshwara Medical college,Tirupati.*
2. *K Rajini,Associate professor,Sri Venkateshwara Medical college,Tirupati.*
3. *C Sujatha,Assistant professor,Sri Venkateshwara Medical College,Tirupati.*
4. *A Venkatalakshmi, professor and HOD, Sri Venkateshwara Medical College,Tirupati.*

Abstract

Background: *Large intestine has a varied spectrum of lesions both non neoplastic and neoplastic. Colorectal cancer is the 3rd most common cancer in men and 2nd in women worldwide with significant geographical, racial, ethnic variation in its incidence rate and pattern. Both macroscopic and microscopic appearance helps in identification of the large intestinal lesions which supports in the treatment of patients in a better way.*

Aims and objectives:

1. *To evaluate the distribution of various types of large intestinal lesions.*
2. *To study the distribution of the lesions according to age and sex.*
3. *To study the correlation of different large intestinal lesions with their clinical symptoms.*

Materials and methods:

Present study is a cross sectional observational study carried out over a period of two years from June 2020 to May 2022 conducted in the department of pathology, Sri venkateshwara medical college, Tirupati. The large intestinal specimens and biopsies received during the study period were fixed in formalin, processed, sections were evaluated and data was analyzed.

Results: *Out of 140 cases 98 cases were diagnosed as non-neoplastic and 57 cases were neoplastic and 5 were inadequate biopsies. The non-neoplastic conditions included congenital anomalies, infective and ischemic lesions. Neoplastic lesions were further divided into benign and malignant.Most of the cases presented with symptoms like bleeding per rectum,constipation,diarrhea.*

Conclusion:*In our study we observed that majority of the lesions were non neoplastic.Among neoplastic lesions colorectal adenocarcinoma was the most common.Most of them presented with vague symptoms leading to grave complications.Early histopathological diagnosis with relevant clinical correlation helps the clinician to provide appropriate treatment for the better survival of the patient.*

Keywords: *Neoplasm, Ischemic, Adenoma, Adenocarcinoma, polyp.*

Date of Submission: 20-10-2022 Date of Acceptance: 04-11-2022

I. Introduction:

Large intestine is the site for broad array of diseases which if ignored can lead to serious complications. These include non-neoplasticand neoplastic lesions. Non neoplastic lesions include ischemic colitis, infective colitis, inflammatorybowel disease etc.Neoplastic lesions mainly include polyps and other benign conditions like adenoma, lipoma, neuroma, angioma, etc.[1]

Among Malignant lesions Colorectal cancer is the third most common cancer worldwideaccounting for 9% of all cancers and fourth most cause of cancer related death.[1]Adenocarcinomas are the commonest malignancies arising in this region, other being carcinoid, melanoma etc.

This study was conducted to analyze histopathological spectrum of lesions in the large intestine and their distribution according to age, sex and its clinicopathological correlation.

II. Materials And Method:

A two-year prospective study was done from the year June 2020 to May 2022**.** From the record section of pathology department relevant clinical information was taken**.** A Total of 160 resected large intestinal specimens and biopsies received during the time period were fixed in formalin. Formalin fixed specimens were then subjected to detailed gross examination and subjected for histopathological processing and paraffin blocks prepared. Sections were cut at 3-5 µ thickness and stained by hematoxylin and eosin and mounted in DPX.

Sections were studied under microscope and reported. This data was analysed and the results were obtained. Autolysed samples and resected specimens of endoscopic biopsy proven malignancy were excluded.

III. Results:

In our study, there were 160 large intestinal lesions, which included biopsies and resected specimens. Out of 160 cases of large intestine, 98 cases (61.25%) were benign, 57(35.62%) were malignant while 05(3.12%) cases were inadequate [Table-1].Among the non-neoplastic lesions, maximum cases were of Anal fistula (26cases) followed by acute self-limiting colitis. Two cases of Hirschsprung's disease were diagnosed which comes under congenital diseases.[Table- 3]

The non-neoplastic lesions were common in 4th to 7th decade with male preponderance and male to female ratio of 3:1. [Table-5]

Among neoplastic lesions, male predominance was seen in both benign and malignant lesions with a M:F ratio of 2:1. Benign neoplastic lesions were common in 4th to 5th decade and malignant were found to be common in 5th to 8th decade. Among Adenocarcinomas the most common histologic type was well differentiated adenocarcinoma (44 cases). [Table-6]

Bleeding per rectum (63 cases) was found to be the most common symptom among patients of large intestinal lesions followed by constipation (44cases), Diarrhea (26 cases) and pain abdomen. [Table-7]

Table -1 Distribution of large intestinal lesions according to type.

Large intestinal lesions	**No. of cases**	**Percentage**
Non -neoplastic	98	61.25%
Neoplastic • Benign	57	35.62%
• Malignant	10	
	47	
Inadequate biopsies	05	3.12%
Total	160	100%

Table -2 Age and gender wise distribution of large intestinal lesions.

Age in years	**Male**	**Female**	**Total**	**Percentage**
0-10	0	2	2	1%
11-20	3	2	5	3%
21-30	14	6	20	12%
31-40	17	9	26	16%
41-50	20	18	38	23%
51-60	15	17	32	19%
61-70	18	11	29	17%
>70	9	5	14	8%

Table- 3 Distribution of non-neoplastic lesions.

Non -neoplastic lesions	**No: of cases**	**Percentage**
Hirschsprung 's disease	2	2.04%
Acute self-limiting colitis	21	21.43%
Infectious colitis	1	1.02%
Ischemic colitis	25	25.51%
Tuberculosis	5	5.10%

Anal fistula	26	26.53%
Haemorrhoids	18	18.37%
Total	98	100

Table-4 Distribution of neoplastic lesions.

Neoplastic lesions	**No: of cases**	**Percentage**
Benign lesions		
1.Adenomatous polyp	5	8.77
2.Hyperplastic polyp	3	5.26
3.Juvenile polyp	2	3.50
Malignant lesions		
1.Adenocarcinoma	44	77.1
2.Malignant Melanoma	1	1.75
3.squamous cell carcinoma.	2	3.50
Total	57	100

Table-5 Distribution of non-neoplastic lesions according clinical features

Non neoplastic lesions:	**No of cases**	**Age in years**	**M:F ratio**	**Most common clinical symptom**
Hirschsprung's disease	2	8m-5	Both males	constipation
Acute self-limiting colitis	21	25-50	2:1	Bloody diarrhoea
Infective colitis	1	43	Male	Pain abdomen
Tuberculosis	5	25-45	3:2	Diarrhoea
Ischemic colitis	25	35-70	4:3	Pain abdomen
Fistula in ano	26	35-50	1:1	Bleeding per rectum
Haemorrhoids	18	45-65	1:2	Bleeding per rectum

Table-6 Distribution of neoplastic lesions according to clinical features.

Benign	**Cases**	**Age In Years**	**M:F Ratio**	**Most Common Clinical Symptom**
Juvenile polyp	2	2-7	1:1	Bleeding per rectum
Adenomatous polyp	5	35-55	3:2	Bleeding per rectum
Hyperplastic polyp	3	45-60	2:1	Pain abdomen
Malignant	**Cases**	**Age**	**M:F Ratio**	**Most Common Clinical Symptom**
Adenocarcinoma	44	45-70	2:1	Bleeding per rectum
Malignant melanoma	1	60	Female	constipation
Squamous cell carcinoma	2	65	Male	Mass per rectum

Table-7 clinical symptoms seen in overall all the large intestinal lesions.

Clinical Symptoms	**Number Of Cases**	**Percentage**
Bleeding Per Rectum	63	39.37
Constipation	44	27.50
Pain Abdomen	17	10.62
Diarrhoea	26	16.25
Mass Per Abdomen	10	6.25
Total	160	100

IV. Discussion:

In the present study there were 98 cases of non-neoplastic lesions,57 neoplastic lesions and 05 were inadequate biopsies

Non-Neoplastic Lesions

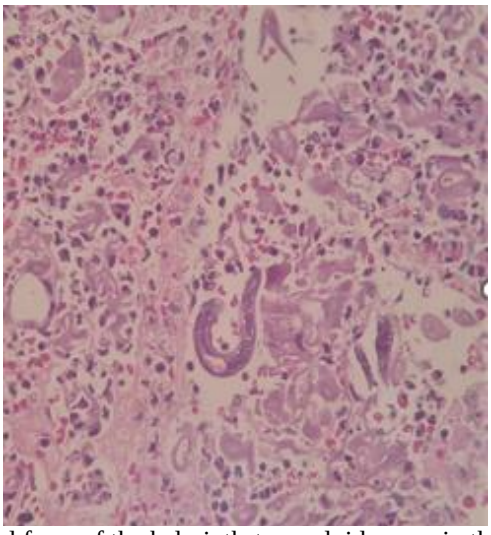
1) Hirschsprung Disease: Two cases (1.25%) were diagnosed.one was a8 months old female and other was 5 year old female. They presented with colicky abdominal pain, abdominal distension and severe constipation. Ultrasound abdomen showed dilated bowel loops.

Cecilia & Rescorla et al., stated that 80% cases of Hirschsprung disease are male with 80% of cases diagnosed during first year of life & 10% were diagnosed in adults. Most of them presented with severe constipation [2,3]

2)Acute self-limitingcolitis: In this study 21(21.42%) cases of were noted.M:F Ratio was 2:1.Most of them presented with pain abdomen, bloody diarrhea.

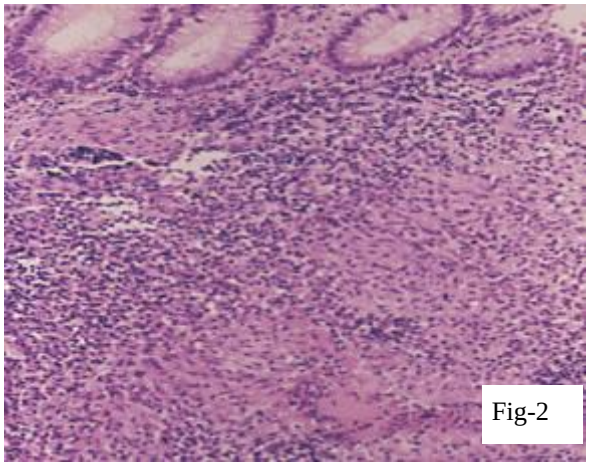
Mandal BK et al., and Haboubi et al., found that patients who presented with diarrhea, had features of acute self-limiting colitis with wide age range and male preponderance. Our findings were similar to above studies [4,5].

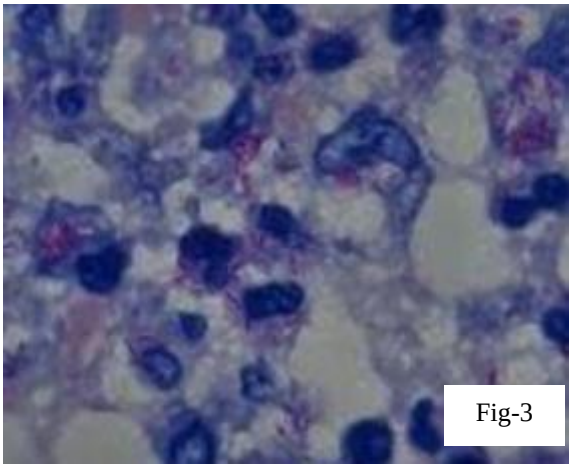
3)Infective colitis: One case (1.07%) of infective colitis was diagnosed caused by Strongyloidesstercoralis.The patient was 43 years male presented with intermittent diarrhea,episodes of pain abdomen.



[Fig-1] Photograph shows larval form of the helminthstrongyloidesseen in the submucosa with oedema and diffuse and denseinfiltration by mixed inflammatory cells. (H&E; 40xX10x)

4)Tuberculosis:5 cases (5.3%) of intestinal tuberculosis were diagnosed.Chief complaints were PUO,weight loss,loose stools and on and off abdominal pain. Endoscopy revealed mucosal ulcerations. In our study the mean age was around 25 to 45 years.





[Fig-2] Photograph shows caseating granulomas with langhans type of multinucleate giant cells(H&E;10xX10x).[Fig-3]Photograph shows AFB staining positive(AFB 100x x10)

5)Ischemic Colitis:25cases (26.88%) of ischemic colitis was diagnosed in our study. Most common symptom was pain abdomen and bloody stools.Mean age - 35 to 70 years with M:F ratio of 4:3. Histopathology shows predominantly transmural hemorrhagic necrosis.

Non neoplastic lesions of Anal Canal:
In the present study 23 cases were diagnosed as Fistula in Ano ,18 were Hemorrhoids and one was Hypertrophic anal papilloma. Most of the cases presented with complaints of bleeding per rectum, constipation. Mean age group was around 25 to 60 years with female preponderance.

Benign neoplastic lesions of large intestine:
1)Juvinile polyp: Two cases of Juvenile polyp was confirmed by histopathology one was 2 year old female and other was 7 year old male.Most common symptom was painless bleeding per rectum.Both the cases the lesion was in rectum.
Roth SI et al., and Dajani YF et al., found rectum as the most common site for Juvenile polyps.[6,7].

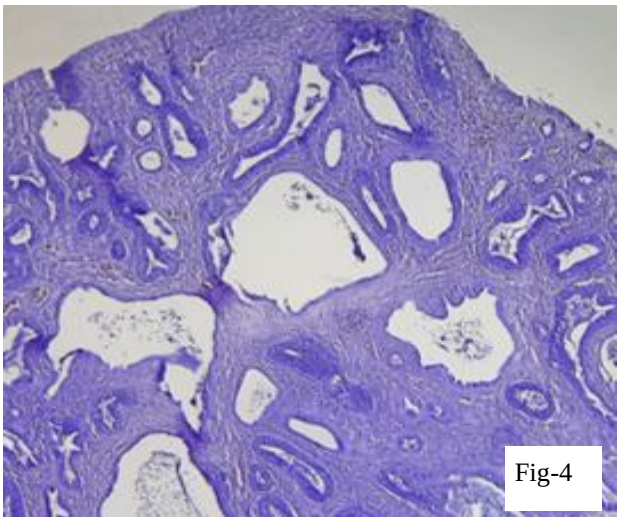


Fig-4

[Fig-4] photograph shows juvenile polyp showing cystically dilated mucin filledglands**,**mildedematous stroma, inflammatoryinfiltrate.(H&E 10xX4x)

2)Adenomatous polyp: In this study Threecases of tubulovillous type adenomatous polyp with low grade dysplasia was seen in the sigmoid colon. Two cases of Tubular adenoma showing moderate dysplasia was diagnosed in the recto-sigmoid junction.
Konishi F et al., in their study of colorectal adenomas found that 81 % were tubular adenomas while only 3% were villous of the villous type [8].
3)Hyperplastic Polyp:3 cases were diagnosed in rectum around the age group of 45 to 60 years with male preponderance.
William's GJ et al., in their study on metaplastic polyps found that they commonly presented in the age group of 19-85 years [18].
Tony J and Harish K et al., found that hyperplastic polyp constituted 8.8% of all the colorectal polyps [9].

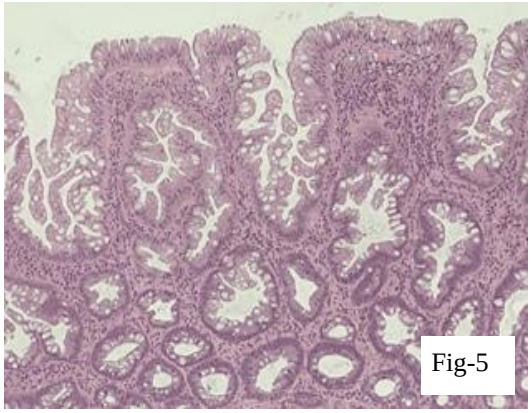


Fig-5

Fig 5- photograph shows hyperplastic polyp withelongated colonic crypts with intraluminal papillary infoldings(H&E;10xX10x)

Malignant Neoplastic Lesions of Large Intestine

Adenocarcinoma constituted the maximum number of cases i.e. 44 cases (77.1%). Followed by one case (1.75%) of malignant melanoma and two cases (3.50%) of squamous cell carcinoma.

Adenocarcinoma:

Rasool A et al., and Caliskan C et al., observed that colorectal adenocarcinoma most commonly affects the persons in the age group of 41-70 years [10,11].In our study well differentiated adenocarcinoma was the most common histological subtype seen in comparison with other studies. [Table-8]

Table-8 Comparison of histopathological types of Adenocarcinomas with other studies

Histological type	CaliskanC et al.,[10] (2010) (n = 448)	SulegaonR et al.,[15](2015) (n=61)	Present study (2020-22) (n=44)
Well differentiated	13.16%	18.3	60.83%
Moderately differentiated	56.02%	57.37	20.27%
Poorly differentiated	11.16%	1.64	10.46%
Mucinous	14.06%	18.64	8.44%
Signet ring	2.23%	4.92	0%

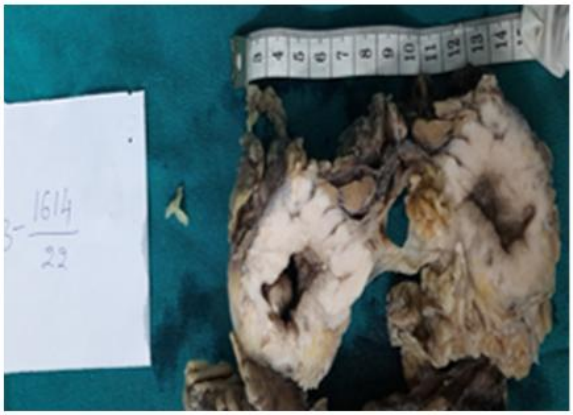


Fig-6

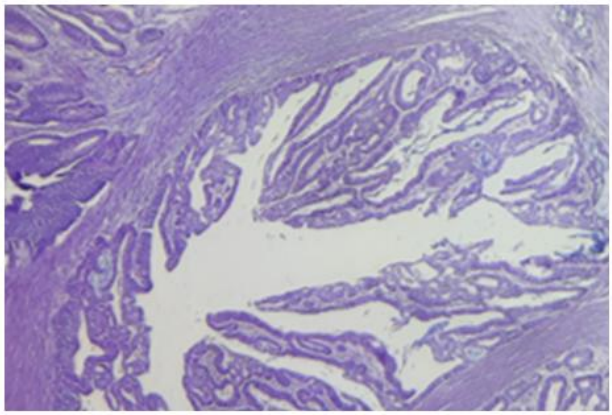


Fig-7

Fig 6: Photograph shows gross specimen of sigmoid colon showing constrictive napkin ring appearance. Fig 7:well-formed glands lined by neoplastic cells and infiltrating the muscularis propria. (H&E;10xX10x)

Malignant melanoma:one case (1.75%)was diagnosed in 60 years female.Patient presented with obstructive symptoms -difficulty in passing stools, constipation.

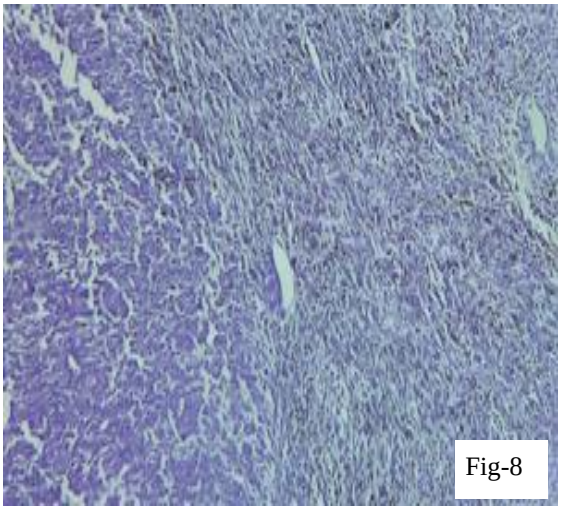


Fig-8

Fig 8: Photograph shows malignant melanoma cells showingsheets of epithelioid to spindle-shaped cells with high nuclear pleomorphism ,with presence of melanin pigment.(H&E;10xX10x)

Morson BC and Volkastadt H in their study of malignant melanoma of the anal canal found that the average age of presentation of malignant melanoma of the anal canal is 59 years [12].

Ramakrishnan AS et al., in his study of Anorectal melanomas found that the average age of melanoma was 53 years.[13]

Squamous cell carcinoma:

2 cases (3.50%) of squamous cell carcinoma werediagnosed one in 65yr old male patient, other in 69-year-old female patient.Presented with bleeding and mass per rectum. histopathological

Klas et al., in their study found that 74% of anal tumors were squamous cell carcinoma.[14]

V. Conclusion:

This study comes to the conclusion that people of all ages, from very young children to very old adults, are affected by various forms of lesions in the large intestine and anal canal. The majority of lesions show up vaguely, which prevents early detection and treatment of these conditions can cause serious repercussions.

This study emphasizes the importance of early illness detection by histology, which when clinically associated will assist the surgeon or clinician in implementing the proper treatment and increasing patient longevity.

References

[1]. Fenoglio-Preiser CM, Noffsinger AE, Stemmerman GN, Lantz PE, Isaacon PG. Gastrointestinal pathology An Atlas and Text. 3rd ed. Philadelphia: Lippincot Williams & Wilkins; 2008. Chapter 14, Epithelial neoplasms of the colon; pp.899- 1036.

[2]. Fenoglio-Preiser CM, Noffsinger AE, Stemmerman GN, Lantz PE, Isaacon PG. Gastrointestinal pathology An Atlas and Text. 3rd ed. Philadelphia: Lippincot Williams & Wilkins; 2008. Chapter 10, Motility Disorders; pp.543-592.

[3]. Rescorla FJ, Morrison AM, Engles D, West KW, Grosfeld JL. Hirschsprung's disease. Evaluation of mortality and long-term function in 260 cases. Arch Surg. 1992;127(8): 934-41.

[4]. Mandal BK, Schofield PF, Morson BC. A clinicopathological study of acute colitis: the dilemma of transient colitis syndrome. Scand J Gastroenterol. 1982;17(7):865-69.

[5]. Haboubi NY, Kamal F. Non-specific colitis, is it a justifiable diagnosis?. Colorectal Dis. 2001;3(4):263-65.

[6]. Roth SI, Helwig EB. Juvenile polyps of the colon and rectum. Cancer. 1963;16:468-79.

[7]. Dajani YF, Kamal MF. Colorectal juvenile polyps. An epidemiological andhistopathological study of 144 cases in Jordanians. Histopathology. 1984;8(5):765-79.

[8]. Konishi F, Morson BC. Pathology of colorectal adenomas. A colonoscopic survey. J Clin Pathol. 1982;35(8): 830-41.

[9]. Williams GT, Arthur JF, Bussey HJ, Morson BC. Metaplastic polyps and polyposis of the colorectum. Histopathology.1980;4(2):155-70.

[10]. Caliskan C, Guler N, Karaca C, Makay O, Firat O, Korkut MA. Negativeprognostic factors in colorectal carcinoma: an analysis of 448 patients.Indian J Surg. 2010;72:243-48.

[11]. Rasool A, Bari S, Rashid S, Wani AH, Wani RA, Peer GQ. Outcome of patients with acute intestinal obstruction due to colorectal carcinoma. The internet journalof surgery. 2009;20(1). Available from: mhtml:file://F:\Ref\ISPUB.

[12]. Morson BC, Volkstadt H. Malignant melanoma of the anal canal. J Clin Pathol. 1963;16(2):126-32.

[13]. Ramakrishnan AS, Mahajan V, Kannan R. Optimizing local control in Anorectal melanoma. Indian J Cancer. 2008;45(1):13-19.

[14]. Klas JV, Rothenberger DA, Wong WD, Madoff RD. Malignant tumours of the anal canal: the spectrum of disease, treatment and outcome. Cancer. 1999;85(8):1686-93.

[15]. Sulegaon R, Shete S, Kulkarni D. Histological Spectrum of Large Intestinal Lesions with Clinicopathological Correlation. J Clin Diagn Res. 2015 Nov;9(11):EC30-4. doi: 10.7860/JCDR/2015/14247.6842. Epub 2015 Nov 1. PMID: 26674358; PMCID: PMC4668419.

Christopher K S, et. al. "A Spectrum of Large Intestinal Lesions with Clinicopathological Correlation in a Tertiary Care Hospital." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 21(11), 2022, pp. 20-26.