



HISTOPATHOLOGICAL SPECTRUM OF LOWER GIT LESIONS – AN EXPERIENCE IN TERTIARY CARE CENTRE

Pathology

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ABSTRACT

INTRODUCTION: Lower Gastrointestinal Tract is affected by a variety of Lesions which include both non-neoplastic and neoplastic pathologies. Colorectal cancers are frequent worldwide particularly in developed countries. Pathological examination of biopsies, polypectomy and resected specimens are vital for determining local extent of disease, patient management and prognosis assessment.

AIMS AND OBJECTIVES: The aim is to study the histomorphology of various lesions of colon and to evaluate the incidence, age and sex ratio.

MATERIAL AND METHODS: A two-year retrospective study was done from January 2017 to December 2018. 136 cases were evaluated from the archives of the Department of Pathology of GMC, Jammu.

RESULTS: Out of 136 specimens received, 94 were from anal canal and 42 from the Large Intestine. The non-neoplastic lesions 114, outnumbered the neoplastic lesions 22. Among the neoplastic lesions, 15 cases were benign, mostly of Juvenile Polyps. 7 cases were of Malignant Lesions. Most common histologic variant of malignant tumour were well differentiated adenocarcinoma and mucin secreting adenocarcinoma. Majority of the patients were between 3rd to 6th decade of life. Predominantly males were affected. Most common clinical complaint was per rectal bleeding.

KEYWORDS

Large Intestine, Polyps, Non-neoplastic

INTRODUCTION

Large Intestine is that part of the gastrointestinal tract which is primarily involved in the absorption of water and electrolytes. It is affected by various types of lesions, (non-neoplastic and neoplastic) like infections, vascular disorders, ulcers, inflammatory disorders, polyps and lastly carcinomas.¹ Adenocarcinomas are the commonest malignancies arising in the colorectal region, other being carcinoid, anal zone carcinoma & melanoma.² According to WHO, colorectal cancer is the third most common cancer in men (746,000 cases, 10.0% of the total) and the second in women (614,000 cases, 9.2% of the total) worldwide. Almost 55% of the cases occur in more developed regions but with less mortality than in less developed regions. Furthermore, epidemiological change of colorectal cancer has been observed in the past with increased incidence among young adults.^{3,4} Non-neoplastic polyps such as Peutz-Jegher and Inflammatory Bowel Diseases such as Ulcerative Colitis are premalignant conditions where early diagnosis is necessary to avoid further consequences. Bowel Infarction again imposes 50-70% death rate if not detected early due to shock and vascular collapse.⁵ To facilitate diagnosis of different colorectal lesions, clinical examination, colonoscopic findings and histopathological examination are complementary to each other. In other words, histopathology is gold standard for diagnosis of clinically suspicious and colonoscopically detected colorectal lesions.

The aim of present study is to evaluate the incidence of spectrum of lesions seen in the Large Intestinal and correlate them with clinical data.

MATERIAL AND METHODS

A two years retrospective study was carried out from January 2017 to 2018 December in the Department of Pathology, Government Medical College, Jammu for which requisition forms, blocks and slides were retrieved from the archives. Clinical details as well as colonoscopic findings were also obtained from the forms and maintained according to the proforma. The study material included the colonoscopic biopsies and resected surgical specimens, those were fixed in 10% buffered formalin and routinely processed, paraffin embedded, sectioned and stained. The blocks were cut and restained with H&E and also for special stains whenever required for re-establishing the diagnosis. The study was approved and permitted by ethics committee of the institution.

After detailed study of the sections under the light microscope the final diagnosis was given. Then, data was analysed and results were obtained.

RESULTS

The total surgical specimens received in the Department of Pathology

during the period from Jan 2017 to Dec 2018 were 5300, out of which lower GIT specimens constituted 136 specimens. For the sake of convenience lesions involving large intestine were separated from lesions of anal canal. The anal canal specimens (94) outnumbered Large Intestinal specimens (42). The results of same are vividly depicted in Table 1.

Table 1 – Distribution of Lesions of Lower GIT

DISTRIBUTION OF LARGE INTESTINAL LESIONS		
1	NON-NEOPLASTIC	24 (57.1%)
	Hirschsprung's Disease	5 (11.90%)
	TB Intestine	2 (4.76%)
	Intussusception	3 (7.14%)
	Inflammatory Bowel Disease	2 (4.76%)
	Ischaemic Colitis	10 (23.80%)
	Infective Colitis	2 (4.76%)
2	NEOPLASTIC	18 (42.85%)
	Benign	14 (33.33%)
	Juvenile Polyp	13 (30.95%)
	Hyperplastic Polyp	1 (2.38%)
	Malignant	4 (9.52%)
	Adenocarcinoma	4 (9.52%)
DISTRIBUTION OF ANAL CANAL LESIONS		
	NON-NEOPLASTIC	90 (95.71%)
	Fistula-in-ano	33 (35.10%)
	Haemorrhoids	41 (43.61%)
	Pilonidal Sinus	11 (11.70%)
	Perianal abscess	4 (4.25%)
	Anal Fissure	1 (1.06%)
	NEOPLASTIC	4 (4.25%)
	Benign	1 (1.06%)
	Anal Polyp	1 (1.06%)
	Malignant	3 (3.19%)
	Adenocarcinoma	2 (2.12%)
	Squamous Cell Carcinoma	1 (1.06%)

In large Intestine the commonest lesion were rectal polyps 13 (30.95%) reported as Juvenile/Retention Polyps (Figure 1), followed by cases of Ischemic Colitis 9 (23.80%) presenting mostly as intestinal perforations. All the four cases of Hirschsprung's disease were seen in children in the age range of 1 month to 3 years. These patients presented with distended abdomen and inability to pass stools/constipation. Among the malignant pathology 2 cases of mucin secreting adenocarcinoma (Figure 2), one each of Signet Ring Carcinoma and poorly differentiated carcinoma were seen (Table 2).

The common complaint of these patients included alternate bowel habits and bleeding per rectum.

Figure 1 – Microphotograph showing Juvenile Polyp (10x X 10x)

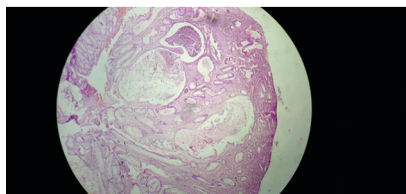


Figure 2 – Microphotograph showing Mucin secreting Adenocarcinoma Colon (40x X 10x)

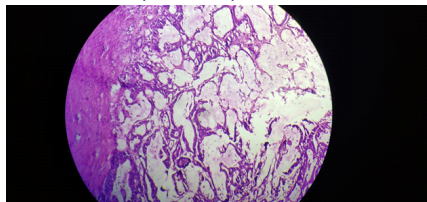


Table 2 – Distribution of Histological Types of Carcinoma

HISTOLOGICAL TYPE	NUMBER	PERCENTAGE (%)
Well Differentiated Adenocarcinoma	2	28.57
Poorly Differentiated Adenocarcinoma	1	14.28
Mucin Secreting Adenocarcinoma	2	28.57
Signet Ring Cell Carcinoma	1	14.28
Squamous Cell Carcinoma	1	14.28

The number of anal canal lesions accounted to 94 out of which the major chunk were of non-neoplastic lesions like Fistula-in-ano 33 (35.10%) and Haemorrhoids 41 (43.61%). The patients were usually in their late adulthood i.e. in the age group of 50-60 years. Two cases of Adenocarcinoma anal region and one case of squamous cell carcinoma were also encountered. The squamous cell carcinoma anal region presented with ulcerated fungating growth.

Maximum specimens received were of patients in the age group of 31-40 years (28.67%) and 41-50 years (21.32%). The sex ratio in these two age groups were M:F :: 1.6:1 and 1.2:1 respectively. Males were more affected in all the age groups as compared to females (Table 3) with an overall M:F ratio of 1.5:1.

Table 3 – Age and Sex Incidence of Lesions of Lower GIT

Age in years	Male	Female	Number of cases (%)
0-1	1	1	2 (1.47)
1-10	6	3	9 (6.61)
11-20	5	2	7 (5.14)
21-30	8	5	13 (9.55)
31-40	24	15	39 (28.67)
41-50	16	13	29 (21.32)
51-60	15	12	27 (19.85)
61-70	7	3	10 (7.35)
Total	82	54	136
M:F :: 1.5:1			

The most common clinical complaint among the patients was bleeding per rectum seen in 85 cases (62.50%) followed by pain abdomen and diarrhoea seen in 25 cases (18.38%) each. Other complaints included abdominal distension, mass per abdomen and constipation. There were overlapping of complaints or multiple complaints seen in single patient (Table 4).

Table 4 – Distribution of cases with respect to chief complaints of the Patients

Symptom	Number of cases	Percentage (%)
Pain Abdomen	25	18.38
Abdominal Distension	16	11.76
Mass per Abdomen	7	5.14
Constipation	14	10.29
Diarrhoea	25	18.38
Bleeding Per Rectum	85	62.50

DISCUSSION

Lesions of Large Intestine: In the present study, there were 24 cases of non-neoplastic lesions and 18 cases of neoplastic lesions. Ischemic colitis was most commonly encountered pathology seen in about 10 cases (23.80%). Clinical complaints included acute abdominal pain followed by constipation and bleeding per rectum. Patients exhibited wide age range i.e. 29-65 years. The histomorphological features included transmural haemorrhagic necrosis, these findings were supported by Kontagianni A et al in his study whereas Antolovic D et al stated that clinical spectrum ranges from moderate self-limiting to severe forms with full thickness necrosis requiring urgent surgical treatment.^{6,7}

Hirschsprung's Disease as stated earlier was seen in infant as young as 1 month to the children maximum upto 3 years of age. Patients presented with distended abdomen and constipation and USG abdomen reports depicted/showed dilated bowel loops. Out of 5 cases of Hirschsprung's Disease 4 were male and 1 was female. This finding was endorsed in the study carried out by Cecilia & Rescorla et al who stated that 80% cases of Hirschsprung's Disease occurred in males.⁸ Zaid F et al in his study found the peak age range of 1 day to 13 years as the age group for disease predilection. The affected segment of intestine shows no ganglion cells whereas the transitional area shows presence of small ganglion cells and neuromuscular hypertrophy.⁹

Out of the two cases of inflammatory bowel disease, one was 40 years old male diagnosed with Crohn's Disease and other was Ulcerative Colitis in a 32-year-old female.

The morphological findings in Crohn's Disease included serpentine ulcers with presence of granuloma formation and giant cells. Whereas, in Ulcerative Colitis features of cryptitis and crypt abscesses were present. Kirsner JB et al stated that both Ulcerative Colitis and Crohn's Disease are rare in developing countries.¹⁰ Sood A et al put forth the mean age of presentation of Ulcerative Colitis as 35.32 years in a study carried out in Punjab. They vouched the clinical picture of pain abdomen and per rectal bleeding.¹¹

Juvenile Polyps presented with a clinical picture of bleeding per rectum and almost exclusively occurred in rectum in younger age groups 10-30 years. Dajani YF et al and Roth SI et al supported these facts that rectum is most common site for Juvenile Polyps in young adults. Histology of Polyps showed cystically dilated glands in an oedematous stroma with infiltration of mononuclear cells. Some of the glands showed presence of mucus in their lumen.¹²⁻¹⁴

Among Malignant Neoplastic Lesions of Large Intestine, in the present study 4 (9.52%) cases of Adenocarcinoma were seen out of which 2 cases were of Mucin secreting adenocarcinoma and one each of Signet Ring Carcinoma and poorly differentiated Carcinoma. All the four cases were seen in the males in the age group of 45-65 years who presented with Rectal bleeding and diarrhoea. Shah A et al in their study of 107 cases of Colorectal Carcinoma found that 72% cases were well differentiated type while mucinous type carcinoma constituted 20%.¹⁵ Histomorphologically mucinous carcinoma showed tumour cells floating in mucin pools whereas well differentiated adenocarcinoma showed well formed glands lined by neoplastic cells infiltrating the muscularis propria. Rasool et al and Caliskan C et al observed that colorectal adenocarcinoma affects the person in the age group of 41-70 years.¹⁶⁻¹⁸

LESIONS OF ANAL CANAL

In our study the greater chunk i.e. 94 specimens were from Anal Canal. Among non-neoplastic lesions which constituted 90 (95.71%), Fistula-in-ano and haemorrhoids formed the most frequent categories. Besides few cases of Pilonidal sinus, perianal abscess and anal fissure were seen. In the anal canal 2 cases of well differentiated adenocarcinoma and one case of squamous cell carcinoma were seen. The age range of anal tumours were 4th to 7th decade with female to male ratio of 1.25:1.

Klas et al in their study found that 74% of anal tumours were of squamous cell carcinoma which is in contrast to the findings of our study. The squamous cell carcinoma presented with a fungating mass whereas adenocarcinomas presented with rectal bleeding.¹⁹

Males were more frequently affected than females in the study with M:F ratio of 1.5:1 which is consistent with the findings of Albasri et al with Male to Female ratio of 1.7:1.²⁰

CONCLUSION

This study concludes that a wide spectrum of lesions can be seen affecting the lower gastrointestinal tract in the patients from early childhood to late childhood. Most of the lesions present with vague overlapping clinical features of abdominal pain, distension, constipation and rectal bleeding. This prevents early diagnosis and treatment leading to grave consequences. So, it is hereby emphasised that there is a need to correlate clinical findings with colonoscopic and histopathological findings so that the surgeons/clinicians can implement appropriate treatment at their earliest for better patient care and survival.

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