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Histopathological Spectrum Of Neoplastic Lesions Of Lower Gastrointestinal Tract

Dr. Aditi Sirohi[1], Dr. Geeta Pachori[2], Dr. Lokendra Singh[3]

[1]Senior Demonstrator, Department of Pathology, JLN Medical College, Ajmer, Rajasthan, India
[2]Senior Professor and Head, Department of Pathology, JLN Medical College, Ajmer, Rajasthan, India
[3]Medical Officer, CHC Shrinagar, Ajmer, Rajasthan, India

Corresponding Author

Dr. Aditi Sirohi
Senior Demonstrator, Department of Pathology, JLN Medical College, Ajmer, Rajasthan, India

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Abstract

Objectives- To study the incidence, age, sex and site wise distribution of neoplastic lesions of lower Gastrointestinal tract.

Methods- The study is conducted both retrospective (from July 2021 to December 2022) and prospective (from January 2023 to June 2024) over a period of 3 years in the department of pathology JLN Medical college, Ajmer. The biopsy specimen of lower Gastrointestinal tract received were fixed in 10% buffered neutral formalin and routinely processed. Special stains and IHC done whenever required.

Result- A total of 121 neoplasms of lower Gastrointestinal tract are analysed, in which 40 (33.06%) are benign and 81 (66.94%) are malignant. Most common site is Rectum 65 cases(53.72%),of which most common benign case is Juvenile Polyp 17 cases (42.5%) and most common Malignant lesion is Moderately Differentiated Adenocarcinoma 17 cases (21%).

Conclusion- In the present study most common age group affected is between 0-10 years in Benign Neoplastic lesions and 61-70 years in Malignant Neoplastic lesions with the mean age of presentation being 42.67±23.22 years. A male preponderance is seen in the occurence of tumors with M:F ratio of 1.42 :1. The commonest malignancy is adenocarcinoma 49 cases (40.49%), common benign neoplasm is Juvenile Polyp 17 cases (42.5%).Most of the malignant neoplasm occurred in Rectum 37 cases (45.68%). In the present analysis Small Intestinal Neoplasm are less common in comparison to Neoplasm of Large Intestine

Keywords- Lower Gastrointestinal tract, Neoplasm

INTRODUCTION

The small intestine and large intestine accounts for most of the Gastrointestinal tract length and are the sites of a broad array of diseases. Small intestine is the principal site for digestion and absorption of ingested food from the gastro intestinal tract. Thus small intestine and large intestine frequently encounter inflammatory and neoplastic processes[1]. The disorders of gastrointestinal tract are responsible for a great deal of morbidity and mortality and are one of the most commonly encountered problems in clinical practice. Broadly the whole gastrointestinal tract can be divided into upper and lower part by taking the insertion of Ligament of Treitz as a landmark[2]. In order to find out the type and extent of the lesion, investigations like Routine investigations, Colonoscopy, Barium enema, Flexible Sigmoidoscopy, CT colonography, stool examination and biopsy should be carried out promptly without any delay[3]. Gastrointestinal tract tumors are one of the most common cancers accounting for11% of all cancers[4].

AIMS AND OBJECTIVES

To Study the Spectrum, Age and Sex wise distribution of various of Lower Gastrointestinal tract Neoplastic Lesions.

MATERIAL AND METHODS

The study “Histopathological Spectrum of Lower Gastrointestinal tract Neoplastic lesions” is carried out in Department of Pathology, JLN Medical College, Ajmer and Associated group of Hospitals, both retrospectively (from July 2021 to December 2022) and prospectively (from January 2023 to June 2024). Total 121 cases, of which 62 are retrospective and 59 are prospective cases of Lower Gastrointestinal tract Neoplastic Lesions are studied over a period of 3 years.

For the retrospective study, blocks were retrieved from the histopathological section and re-examined. For prospective study we received biopsy specimen (Bowel resection, Endoscopic Mucosal Resection, Polypectomy Specimens Endoscopic Biopsy, Abdomino-perineal Resection) in 10% buffered formalin. A properly completed surgical pathology requisition form containing the patient's identification, age, sex, essential clinical data and specimen submitted is checked. Then the specimen are allowed to fix in 10% buffered formalin for 12-14 hours at room temperature and the gross features like size, shape, colour , external surface, cut surface, consistency, color of cut section are noted.

OBSERVATIONS

Table 1: Distribution of the Lower Gastrointestinal Neoplastic Lesion according to Site

Site	Number (N=121)	Percentage (%)
Jejunum	5	4.13
Ileum	5	4.13
Caecum	2	1.65
Appendix	5	4.13
Ascending Colon	7	5.79
Transverse Colon	10	8.26
Descending Colon	1	0.83
Sigmoid Colon	4	3.31
Rectum	65	53.72
Anal Canal	17	14.05

The above table shows distribution of Lower Gastrointestinal Neoplasm according to Site of lesion. Rectum is the most common site. Maximum number of the cases 65 (53.72%) are observed in Rectum .

Table 2: Distribution of the lower Gastrointestinal Benign Neoplastic Lesion according to Site

Site	Number	Percentage
Jejunum	1	2.5
Ileum	1	2.5
Caecum	0	0
Appendix	5	12.5
Ascending Colon	0	0
Transverse Colon	0	0
Descending Colon	0	0
Sigmoid Colon	0	0
Rectum	28	70
Anal Canal	5	12.5
Total	40	100

The above table shows Distribution of the Lower Gastrointestinal Benign Neoplastic Lesion according to Site. Maximum number of cases are observed in Rectum 28 cases (70%), Appendix and Anal Canal 5 cases in each (12.5 %) followed by Ileum and Jejunum 1 case in each (2.5%) while no Benign Neoplastic lesions are observed in Caecum, Ascending Colon, Transverse Colon Descending Colon and Sigmoid Colon.

Table 3: Distribution of the Lower Gastrointestinal Malignant Neoplastic Lesion according to Site

Site	Number	Percentage
Jejunum	4	4.94
Ileum	4	4.94
Caecum	2	2.47
Appendix	0	0.00
Ascending Colon	7	8.64
Transverse Colon	10	12.35
Descending Colon	1	1.23
Sigmoid Colon	4	4.94
Rectum	37	45.68
Anal Canal	12	14.81
Total	81	100.00

The above table shows distribution of Malignant Neoplastic Lesions according to Site. Maximum number of the cases 37 (45.68%) are observed in Rectum .

Table 4: Distribution of Lower Gastrointestinal Neoplastic Lesions according to Type and Site of the Lesions

Site	Benign		Malignant		Total		P Value LS
	Number	%	Number	%	Number	%	
Jejunum	1	2.5	4	4.94	5	4.13	0.88NS
Ileum	1	2.5	4	4.94	5	4.13	0.88NS
Caecum	0	0	2	2.47	2	1.65	0.81NS
Appendix	5	12.5	0	0.00	5	4.13	0.006S
Ascending Colon	0	0	7	8.64	7	5.79	0.13NS
Transverse Colon	0	0	10	12.35	10	8.26	NA
Descending Colon	0	0	1	1.23	1	0.83	0.37NS
Sigmoid Colon	0	0	4	4.94	4	3.31	0.37NS
Rectum	28	70	37	45.68	65	53.72	0.02S
Anal Canal	5	12.5	12	14.81	17	14.05	0.947NS
Total	40	100	81	100.00	121	100.00	

The above table shows the distribution of Lower Gastrointestinal Neoplastic Lesions according to Type and Site of the lesions. The Rectum is the most common site of both benign and malignant neoplastic lesion. Significant findings are observed in Appendix and Rectum only, where malignant cases are found to be more 56.92% in rectum, while in Appendix 100% cases are benign in nature. Non-neoplastic lesions are most common in small intestine while large intestine harbors most of the neoplastic lesions .Appendix has only benign lesions.

Table 5: Gender distribution of Lower Gastrointestinal Neoplastic Lesions

Sex	Number (N=121)	Percentage (%)
Female	51	42.15
Male	70	57.85
Total	121	100.00
M:F	1.42:1	

The above table shows that there is Male preponderance in the Lower Gastrointestinal Neoplastic Lesions with 57.85% Male and 42.15% Female giving Male : Female ratio of 1.42:1.

Table 6: Age-wise distribution of the Lower Gastrointestinal Neoplastic Lesions

Age (in years)	Number (N=121)	Percentage (%)
0 – 10	24	19.83
11 – 20	2	1.65
21 – 30	12	9.92
31 – 40	12	9.92
41 – 50	22	18.18
51 – 60	20	16.53
61 – 70	19	15.70
71 – 80	9	7.44
81 – 90	1	0.83
Mean ±SD	42.67±23.22(2 to 85 years)	

The above table shows the age of patients are between 2 - 85 years and the mean age is 42.67±23.22 (years). Proportion of the cases are maximum 19.83 % in age group 1 - 10 years of age, 18.18 % in age group 41 - 50 years and 16.53% in age group 51 - 60 years. The age of youngest case is 2 years and oldest case is 85 years.

Table 7: Distribution of the Lower Gastrointestinal Neoplastic Lesions according to Age and Gender of Patients

Age (in years)	Female (N=51)		Male (N=70)		Total (N=121)	Percentage %	P VALUE LS
	Number	%	Number	%	Number	%	
1-10	7	29.17	17	70.83	24	19.83	0.227NS
11-20	1	50	1	50.00	2	1.65	0.62NS
21-30	4	33.33	8	66.67	12	9.92	0.73NS
31- 40	8	66.67	4	33.33	12	9.92	0.13NS

41- 50	10	45.45	12	54.55	22	18.18	0.914NS
51- 60	5	25	15	75.00	20	16.53	0.14NS
61-70	8	42.11	11	57.89	19	15.70	0.81NS
71-80	8	88.89	1	11.11	9	7.44	**0.009S**
81-90	0	0	1	100.00	1	0.83	0.87NS
Total	51	42.15	70	57.85	121	100.00	0.227NS
Mean±SD	46.47	22.392	39.89	23.579	42.67	23.221	0.12NS

The above table shows that the maximum number of cases are in 4th and 5th decades which are 18.18% and 16.53% respectively. No significant difference is observed according to age with sex except in 8th decade where cases are more in Females as compared to Males and found to be Significant.(P=0.009S)

Table 8: Distribution of the cases according to Histopathological diagnosis of Benign Neoplastic Lesion

Benign	**N=40**	Percentage
Juvenile Polyp	17	42.5
Rectal Polyp	6	15
Mucocele	4	10
Anal Polyp	4	10
Adenomatous Polyp	3	7.5
Inflammatory Polyp	2	5
Carcinoid	1	2.5
Hyperplastic Inflammatory Polyp	1	2.5
Hyperplastic Juvenile Polyp	1	2.5
Squamous Papilloma	1	2.5

The above table shows distribution of the cases according to Histopathological diagnosis of Benign Neoplastic Lesion. Most common Benign lesion is Juvenile Polyp in 17 cases (42.5%)

Table 9: Distribution of Lower Gastrointestinal Malignant Neoplastic Lesions according to Histopathology

Malignant	**N=81**	Percentage
Moderately Differentiated Adenocarcinoma	30	37.04
Well Differentiated Adenocarcinoma	7	8.64
Poorly Differentiated Adenocarcinoma	6	7.41
Cloacogenic carcinoma	6	7.41
Mucinous Adenocarcinoma	6	7.41
Signet Ring Adenocarcinoma	5	6.17
Adenocarcinoma	4	4.94
GIST	2	2.47
Malignant melanoma	2	2.47
Moderately Differentiated Squamous Cell Carcinoma	2	2.47
Moderately Differentiated Mucinous Adenocarcinoma	2	2.47
Undifferentiated Carcinoma	2	2.47
Moderately Differentiated Signet Ring Cell Adenocarcinoma	1	1.23
Neuroendocrine Carcinoma	1	1.23
Non Hodgkins Lymphoma	1	1.23
Papillary Adenocarcinoma	1	1.23
Squamous cell Carcinoma	1	1.23
Well Differentiated Papillary Adenocarcinoma	1	1.23
Well Differentiated Squamous cell carcinoma	1	1.23

The above table shows the distribution of Lower Gastrointestinal Malignant Neoplastic Lesions according to Histopathology. Among them Moderately Differentiated Adenocarcinoma are the commonest 30 cases (37.04%)

Table 10: Distribution of Benign Neoplastic Lesions of Lower Gastrointestine according to Age and Sex of Patients

Age (in years)	**Female**	**Male**	**Total**	**Percentage**	**P VALUE LS**
1- 10	7	16	23	57.5	0.98NS
11 - 20	1	1	2	5	0.816NS
21 - 30	1	3	4	10	0.82NS

31 - 40	2	1	3	7.5	0.50NS
41 -50	1	3	4	10	0.82NS
51 - 60	0	3	3	7.5	0.54NS
61 - 70	0	0	0	0	NA
71 - 80	1	0	1	2.5	0.71NS
81-90	0	0	0	0	NA
Total	13	27	40	100	
Mean±SD	22.15±22.78	18.98±19.38	20.01±20.307		0.65NS

In our Study Benign Neoplastic Lesion is highest in age group 0-10 years and no Significant association is observed in any of the age group with gender in the Benign Neoplastic Lesion.

Table 11: Distribution of Malignant Neoplastic Lesions of Lower Gastrointestine according to Age and Sex of Patients

Age (in years)	Female	Male	Total	Percentage	P VALUE LS
1- 10	0	1	1	1.23	0.95NS
11 -20	0	0	0	0.00	NA
21 -30	3	5	8	9.88	0.85NS
31 - 40	6	3	9	11.11	0.63NS
41 -50	9	9	18	22.22	0.99NS
51 - 60	5	12	17	20.99	0.17NS
61 -70	8	11	19	23.46	0.82NS
71 - 80	7	1	8	9.88	**0.04S**
81-90	0	1	1	1.23	0.95NS
Total	38	43	81	100.00	0.95NS
Mean±SD	54.79±15.18	53.02±14.94	53.85±14.98		0.59NS

The above table shows that the Malignant Neoplastic Lesions of the lower Gastrointestine are most common in the 7th and 5th decade followed by 6th decade and least common in the 1st decade and statistically found to be Significant in the 8th decade. There is a Male preponderance.

Table 12: Association of Mean Age with Gender according to Histopathological type of Neoplastic Lower Gastrointestinal Lesion

Age							
Tumor	Sex	Number	Mean	Std. Deviation	Minimum	Maximum	P Value LS
Benign	Female	13	22.15	22.78	4	77	0.65NS
	Male	27	18.98	19.38	2	60	
	Total	40	20.01	20.31	2	77	
Malignant	Female	38	54.79	15.18	24	80	0.59NS
	Male	43	53.02	14.94	10	85	
	Total	81	53.85	14.98	10	85	
Total	Female	51	46.47	22.39	4	80	0.12NS
	Male	70	39.89	23.58	2	85	
	Total	121	42.67	23.22	2	85	

The above table shows that Mean Age for Benign neoplasm is 20.01 ±20.31 years while for the Malignant neoplasm is 53.85±14.98 years. In our study this is statistically Significant that mean age is higher in Malignant lesion as compare to the Benign lesion (P<0.001S), while no significance is observed according to sex in Benign and Malignant lesion as well as a whole.

Table 13: Distribution of the cases according to Mean Age and Site of Benign Neoplastic Lesion

Tumour	Site	Number	Mean age	SD	Minimum	Maximum
Benign	Jejunum	1	77.00	0	77	77
	Ileum	1	30.00	0	30	30
	Appendix	5	32.80	11.39	19	50
		28	13.05	17.19	2	60

	Rectum					
	Anal Canal	5	32.80	17.68	8	50
	Total	40	20.01	20.31	2	77

The above table shows distribution of the cases according to mean age and site of Benign Neoplastic Lesion. The mean age of the lesion in Anal canal and Appendix is 32 years while in Rectum it is 13.05 years .

Table 14: Distribution of the cases according to Mean Age and Site of Malignant Neoplastic Lesion

Tumour	Site	Number	Mean	SD	Minimum	Maximum
Malignant	Jejunum	4	43.75	14.93	30	65
	Ileum	4	37.50	19.36	10	55
	Caecum	2	39.00	15.56	28	50
	Ascending Colon	7	51.43	14.68	30	67
	Transverse Colon	10	56.80	11.31	32	70
	Descending Colon	1	80.00	0	80	80
	Sigmoid Colon	4	53.50	10.63	40	62
	Rectum	37	54.46	15.06	24	80
	Anal Canal	12	60.17	12.61	43	85
	Total	81	53.85	14.98	10	85

The above table shows distribution of the cases according to mean age and site of malignant neoplastic lesion. The mean age in small intestinal lesion is lower as compared to large intestine lesions in which it is higher.

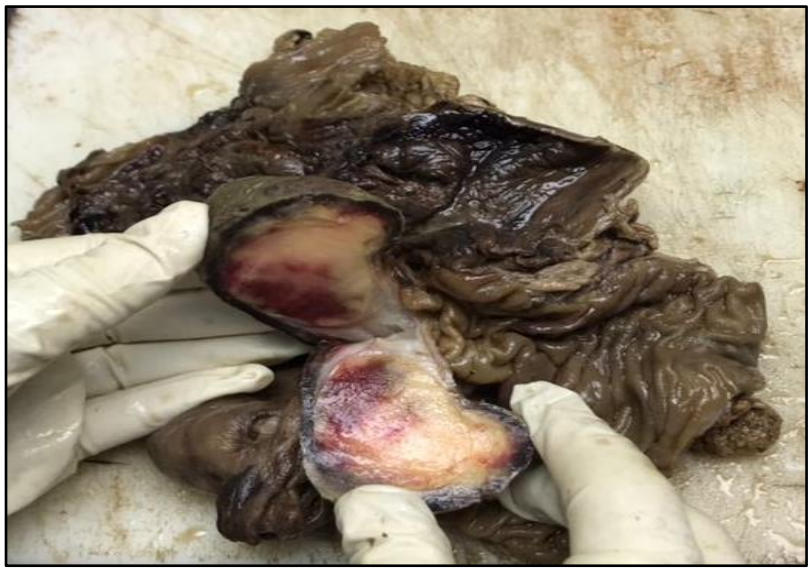

Figure 1:Adenomatous Polyp:- Shows partial to complete loss of mucosal folds with a large polypoidal structure measuring 6x6cm, cut surface of polyp is well circumscribed, grey yellow, smooth and shiny with haemorrhagic areas.

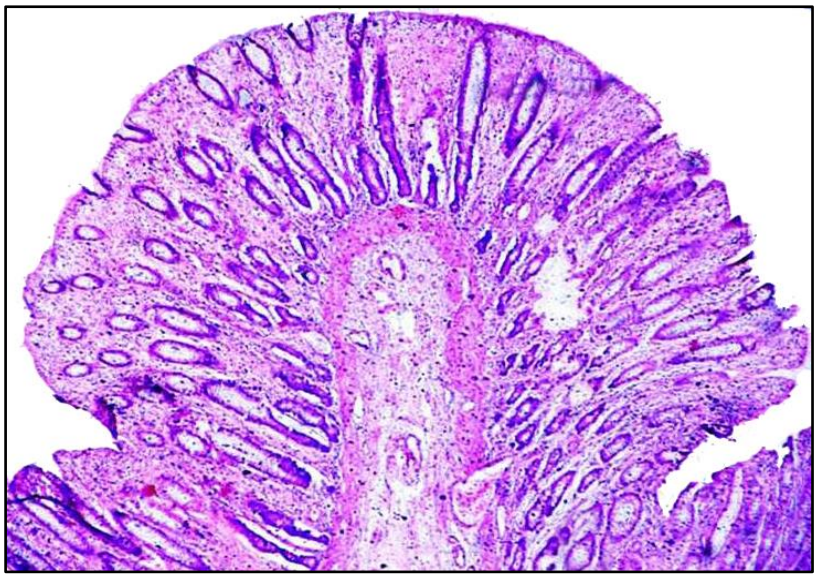

Figure 2:Adenomatous Polyp:- shows benign appearing mucosal epithelial lining and tubular glands. Mucosal glands are increased in number and a pediclie formed by the smooth musle and blood vessels is present, stroma shows inflammation, congestion and at places necrosis. (H & E Stain, 40X)

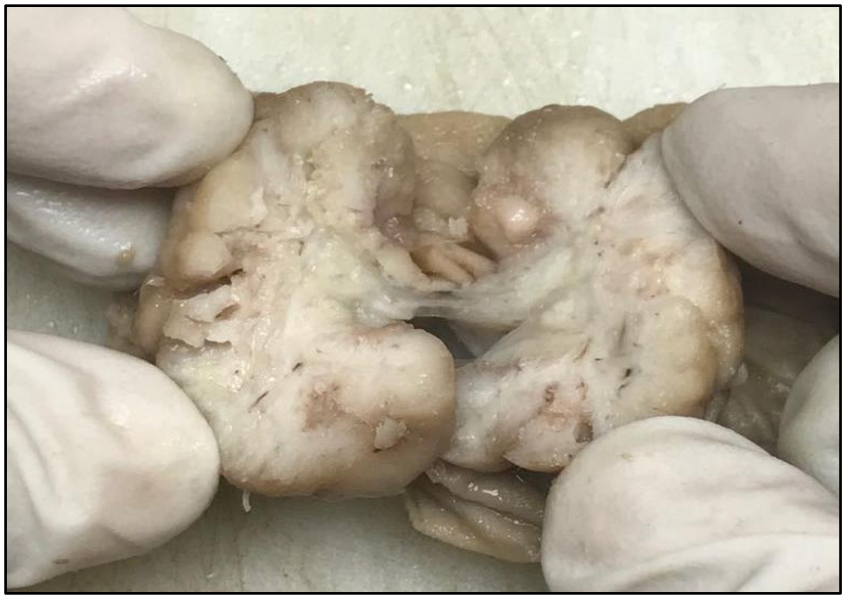

Figure 3:Juvenile Polyp:-Cut Surface shows a pedunculated polyp with a lobulated, grey white, firm surface.

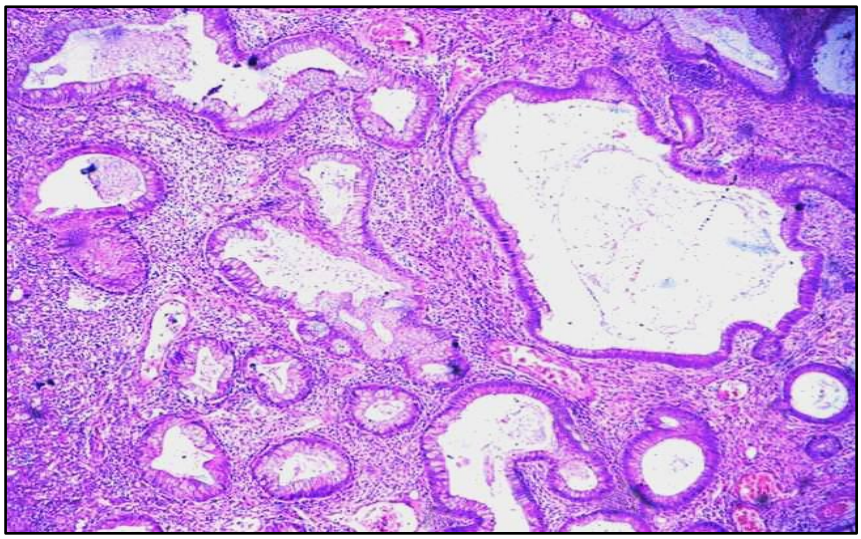

Figure 4: Juvenile Polyp:- Shows cystically dilated and irregularly shaped glands, tortuous crypts, inflammed and edematous lamina propria.(H & E Stain, 40X)

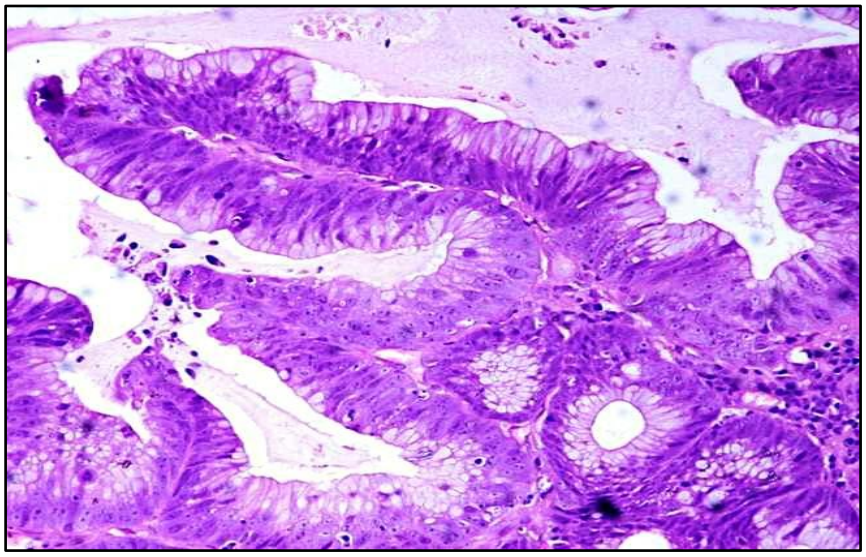

Figure 5:Papillary Adenocarcinoma:-Shows papillae lined by the columnar cells having high N/C ratio, hyperchromatism, lost nuclear polarity, Prominent nucleoli and eosinophilic cytoplasm and also there are malignant mucosal glands beneath the papillae(H & E,200 X)

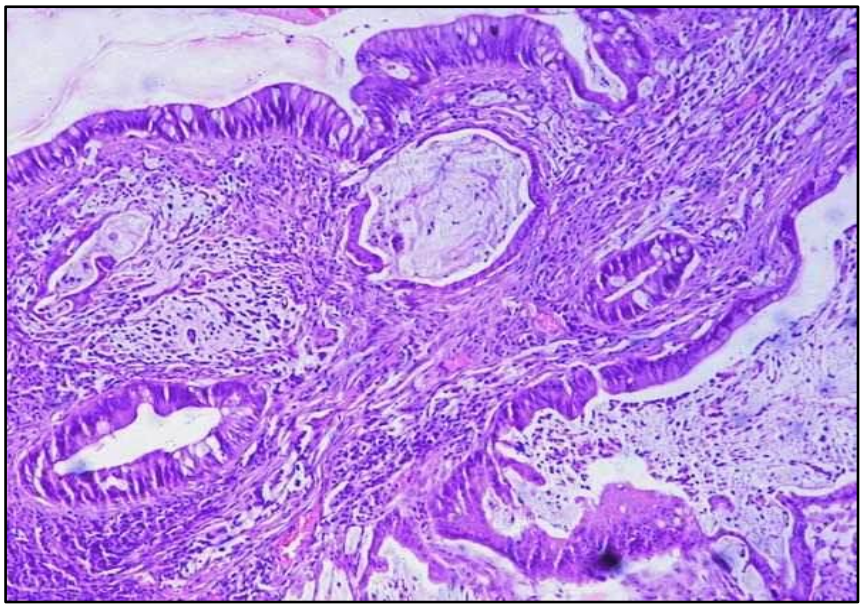

Figure 6: Mucinous Adenocarcinoma:-Shows irregular glands and tubules harbouring stratification, cellular pleomorphism, high N/C ratio, prominent nucleoli, lost nuclear polarity, reduced and inflamed stroma (H & E, 40X)

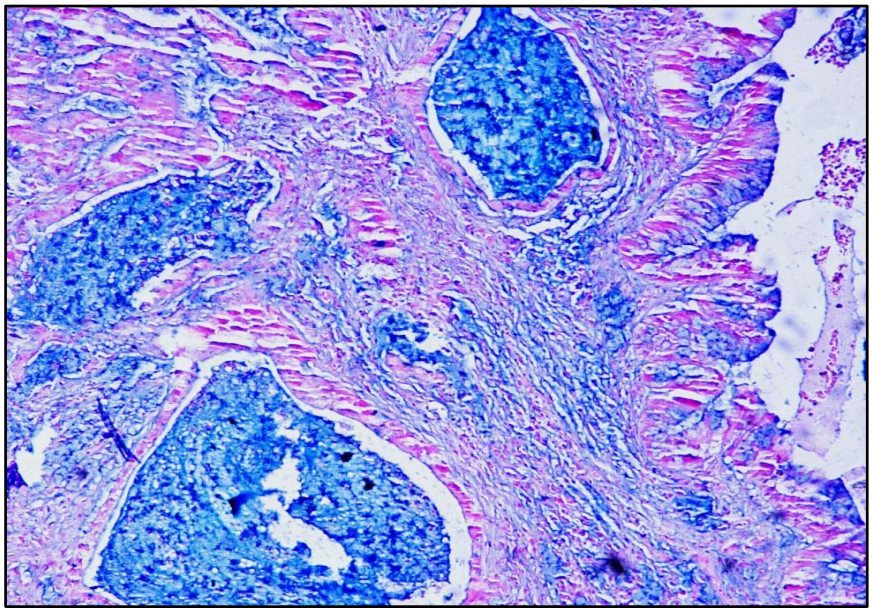

Figure 7:Mucinous Adenocarcinoma:-Shows the extracellular mucin pools in blue colour and nucleus of the tumor cells in red colour which are floating in the mucin pools.((Alcian Blue,100X)

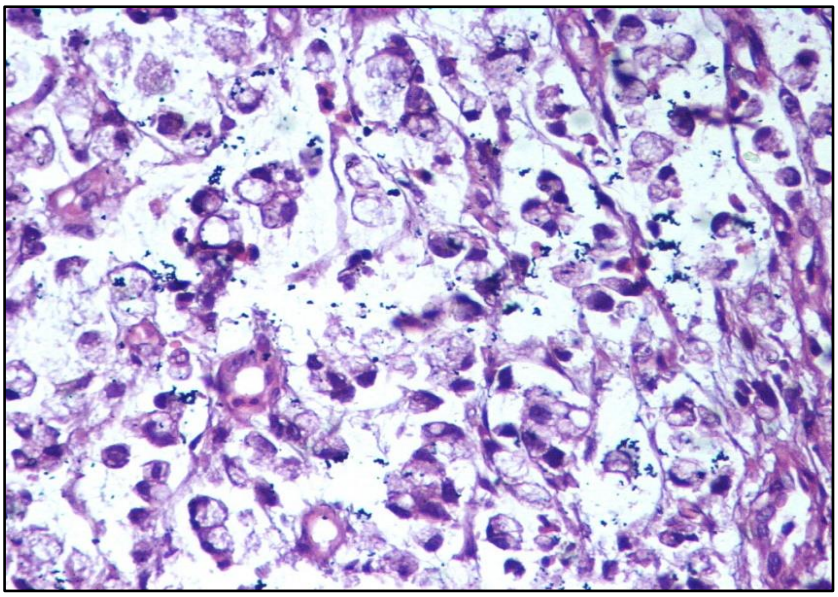

Figure 8: Signet Ring Cell Adenocarcinoma:- Shows many tumor cells with intracytoplasmic mucin pushing the nucleus to the periphery giving the appearance of signet ring cells (H & E, 400X)

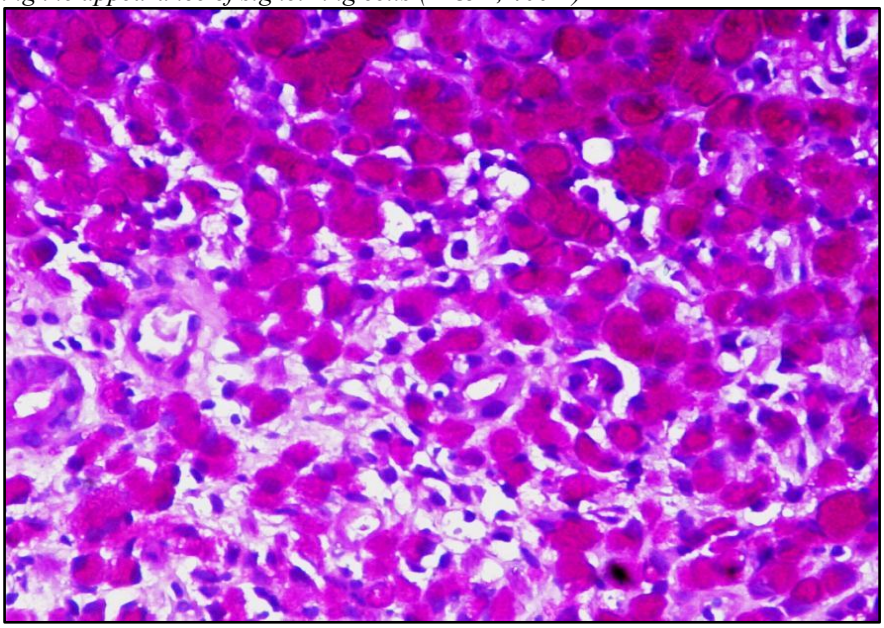

Figure 9: Signet Ring Cell Adenocarcinoma:-Shows Signet ring cells having intracytoplasmic magenta coloured mucin pushing the blue colour nucleus to the periphery (PAS Stain, 400X)

Figure 10: Malignant Melanoma:-Shows loss of mucosal fold and thinned out mucosa with congestion surrounding the growth. Cut surface of growth is grey white to grey black and fragile.

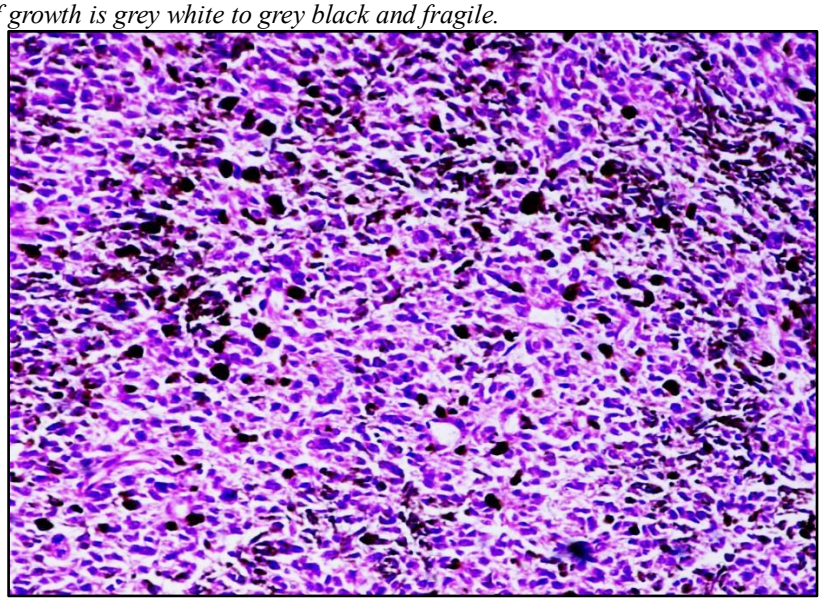

Figure 11: Malignant Melanoma:- Shows abundant extracellular and intracellular Brown Black colour Melanin pigment. (H & E, 200X)

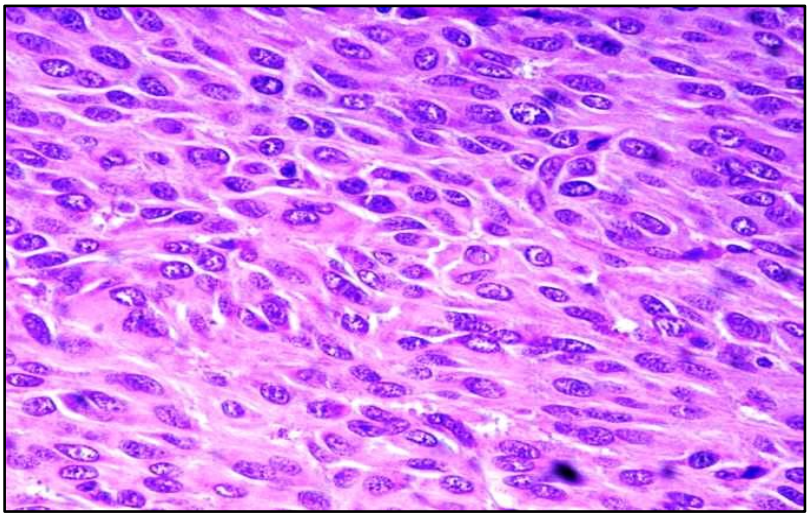

Figure 12:GIST:-Shows epithelioid cells with a condensed rim of eosinophilic cytoplasm and peripheral cytoplasmic clearing, well defined cell membranes, round to oval nuclei with nucleoli. Mitosis is <5/50 high power field. (H & E Stain, 400X)

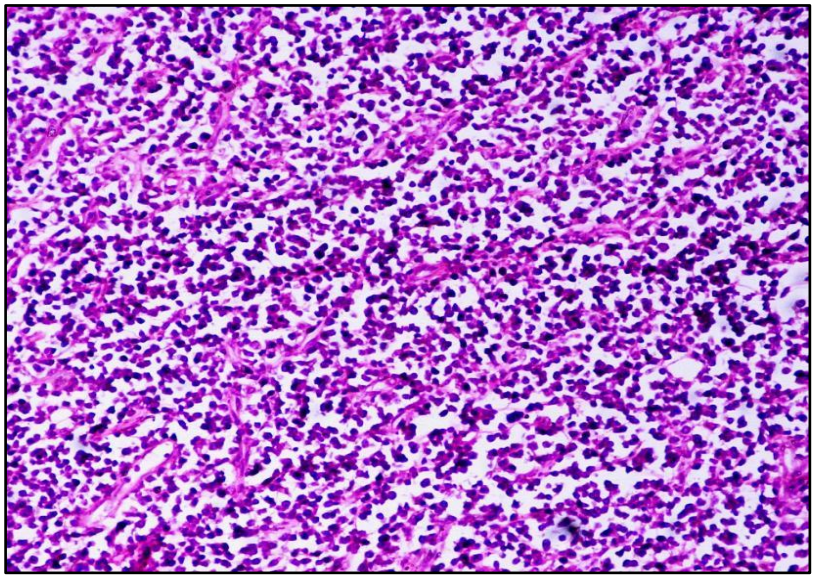

Figure 13: NHL:- Shows tumor cells having high nucleo-cytoplasmic ratio, coarse nuclear chromatin, prominent nucleoli and scanty cytoplasm. There is also proliferation of blood vessels. (H & E,200X)

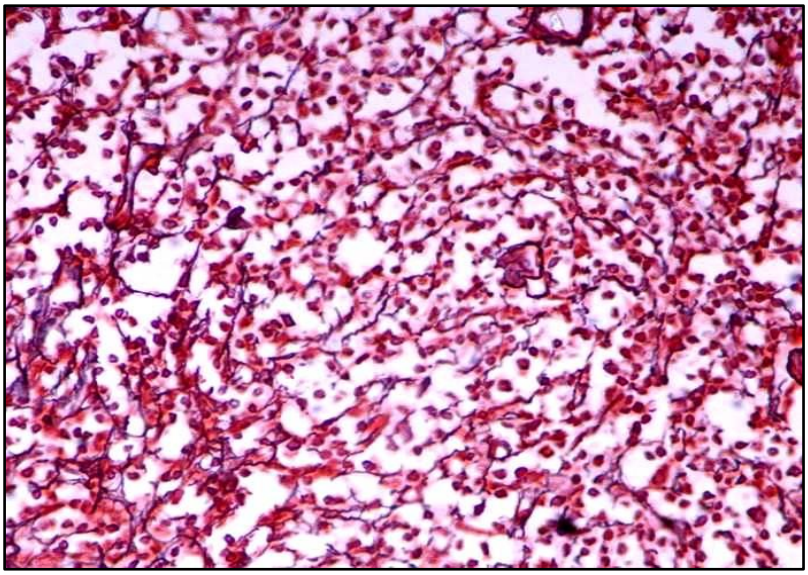

Figure 14::- Reticulin Stain showing investment of individual cell by fibrils which appear black in colour.(400X)

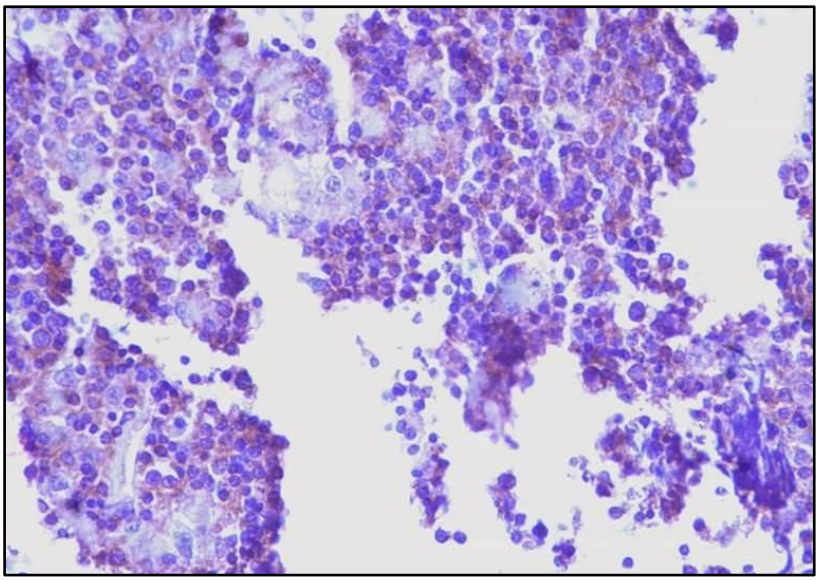

Figure 15: NHL:- High power view showing immunoreactivity with CD79a.(400X)

DISCUSSION

A Total of 121 cases, of which 62 are retrospective and 59 are prospective cases of Lower Gastrointestinal tract Neoplastic lesions are studied to observe the Spectrum and Distribution of various Lower Gastrointestinal tract Neoplastic Lesions in the Department of Pathology J.L.N. Medical College and Associated Groups of Hospitals, Ajmer over a period of 3 years, which include 1 and 1/2 years (from July 2021 to December 2022) of retrospective and 1 and 1/2 years (from January 2023 to June 2024) of prospective study.

Table 15: Showing Mean Age and Age Range of Lower Gastrointestinal Neoplastic Lesion in comparison with other Studies

Authors	Jhajj K et al (2010)[5]	Laishram R S et al (2010)[6]	Yanik Serdar et al (2014)[7]	Mohsin-ul-Rasool et al (2014)[8]	Sharma P et al (2015)[9]	Umana Isoken O. M. et al (2017)[10]	Present Study
Mean age (years)	54.5	47.5	53	50.50	56	53.8	42.67
Age Range (years)	1-92	20-84	15-82	18-80	4-88	18-96	2-85

In the present study, age ranged from 2-85 years with a mean age of 42.67 years similar observation was found in studies done by Jhajj K et al (2010)[5] , Laishram R S et al (2010)[6]and Sharma P et al (2015)[9].

Table 16: Comparison of Age and Sex Wise Distribution of Lower Gastrointestinal Benign Neoplastic Lesion with the other Studies

Studies	Mean Age	M:F ratio
Jhajj K et al (2010)[5]	32.6 years	2.2:1
Uplaonkar S et al (2014)[11]	40.1 years	3:1
Present Study	20.01 ±20.31 years	2:1

In the Present Study Age and Sex Wise distribution of Lower Gastrointestinal Benign Neoplastic Lesion shows that Benign lesion occurs in the mean age of 20.01 years i.e comparatively younger age than Malignant lesions with M:F ratio of 2:1 showing Male preponderance, which are in concordance with the observation of studies done by Jhajj K et al (2010)[5] and Uplaonkar S et al (2014)[11].

Table 17: Comparison of Age and Sex Wise Distribution of Lower Gastrointestinal Malignant Neoplastic Lesion with the other Studies

Studies	Mean Age	M:F ratio
Jhajj K et al (2010)[5]	54.4 years	2.5:1

Laishram R S et al (2010)[6]	47.5 years	1.16:1
Mohsin-ul-Rasool et al (2014)[8]	50.50 years	1.3:1
Sharma P et al (2015)[9]	56 years	1.7:1
Present Study	53.85±14.98	1.13:1

In the Present Study Age and Sex Wise distribution of Lower Gastrointestinal Malignant Neoplastic Lesion shows that Malignant lesion occurs in the mean age of 53.85 years i.e comparatively older age than benign lesions with M:F ratio of 1.13:1 showing Male preponderance, which are in concordance with the observation of studies done by Jhajj K et al (2010)[5] and Sharma P et al (2015)[9].

Table 18: Comparison of the Malignancy Status with the other Studies

Studies	Kotepui M et al (2013)[12]	Uplaonkar S et al (2014)[11]	Saiprasad et al (2015)[13]	Thakur Y. Rajesh et al (2016)[14]	Sheikh Bilal et al (2017)[15]	Present Study
Benign	39.90%	21.89%.	14%	11.60%	35.08%	33.06%
Malignant	60.10%	64.05%	86%	88.30%	64.92%	66.94%

In the Present Study 66.94% are Malignant and 33.06% are Benign cases which are comparaple with the findings of studies done by Kotepui M et al (2013)[12] , Uplaonkar S et al (2014)[11]and Sheikh Bilal et al (2017)[15].

Table 19: Comparison of most common Site of the Lower Gastrointestinal Benign Neoplastic Lesion with the other Studies

Studies	Kunjumon Thomas et al (2014)[16]	Sharma P et al (2015)[9]	Saiprasad et al (2015)[13]	Sulegaon R et al (2015)[17]	Sheikh Bilal et al (2017)[15]	Umana Isoken O. M. et al (2017)[10]	Present Study
Site	Rectum	Rectum	Rectum	Rectum	Sigmoid Colon	Rectum	Rectum
Percentage	39%	64.5%	55.55%	77.77%	38.33%	31.42%	70%

In the Present Study most common site of the Lower Gastrointestinal Benign Neoplastic Lesion is Rectum, which is in concordance with the observation of studies done by Sharma P et al (2015)[9] and Sulegaon R et al (2015)[17].

Table 20: Comparison of most common type of the Lower Gastrointestinal Benign Neoplastic Lesion with the other Studies according to Histopathological diagnosis

Studies	Histopathological Type	Percentage
Kunjumon Thomas et al (2014)[16]	Juvenile Polyp	52%
Sharma P et al (2015)[9]	Tubular Adenoma	54.83%
Saiprasad et al (2015)[13]	Adenoma	88.88%
Sulegaon R et al (2015)[17]	Juvenile Polyp	66.67%
Sheikh Bilal et al (2017)[15]	Tubular Adenoma	46.67%
Umana Isoken O. M. et al (2017)[10]	Tubular Adenoma	62.85%
Present Study	Juvenile Polyp	42.5%

In the Present Study most common type of the Lower Gastrointestinal Benign Neoplastic Lesion according to Histopathological diagnosis is Juvenile Polyp which is in concordance with the observation of studies done by Kunjumon Thomas et al (2014)[16]and Sulegaon R et al (2015)[17].

Table 21: Comparison of most common type of the Lower Gastrointestinal Malignant Neoplastic Lesion with the other Studies according to Histopathological diagnosis

Studies	Histopathological Type	Percentage
Kotepui M et al (2013)[12]	Well Differentiated Adenocarcinoma	56.9%
Mohsin-ul-Rasool et al (2014)[8]	Moderately Differentiated Adenocarcinoma	50.24%
Sulegaon R et al (2015)[17]	Moderately Differentiated Adenocarcinoma	57.37%
Sharma P et al (2015)[9]	Well Differentiated Adenocarcinoma	42.69%
Saiprasad et al (2015)[13]	Well Differentiated	25.45%

	Adenocarcinoma	
Karve S. H. et al (2015)[18]	Moderately Differentiated Adenocarcinoma	36.8%
Sheikh Bilal et al (2017)[15]	Moderately Differentiated Adenocarcinoma	36.94%
Umana Isoken O. M. et al (2017)[10]	Moderately Differentiated Adenocarcinoma	41.42%
Present Study	Moderately Differentiated Adenocarcinoma	37.04%

In the Present Study most common type of the Lower Gastrointestinal Malignant Neoplastic Lesion according to Histopathological diagnosis is Moderately Differentiated Adenocarcinoma which is in concordance with the observation of studies done by Mohsin-ul-Rasool et al (2014)[8], Karve S. H. et al (2015)[18], Sheikh Bilal et al (2017)[15], Umana Isoken O. M. et al (2017)[10].

Table 22: Comparison of Most Common Peak Age of presentation of the Lower Gastrointestinal Benign Neoplastic Lesion with the other Studies

Studies	Most Common Peak age of Presentation
Jhajj K et al (2010)[5]	0-9 years
Kunjumon Thomas et al (2014)[16]	0-9 years
Karve S. H. et al (2015)[18]	41-50 years
Sharma P et al (2015)[9]	0-10 years
Saiprasad et al (2015)[13]	0-10 years
Sulegaon R et al (2015)[17]	0-10 years
Sheikh Bilal et al (2017)[15]	61-70 years
Umana Isoken O. M. et al (2017)[10]	50-59
Present Study	0-10 years

In the Present Study most common Peak Age of presentation of the Lower Gastrointestinal Benign Neoplastic Lesion is 0-10 years which is similar to the observation in studies done by Sharma P et al (2015)[9], Saiprasad et al (2015)[13]and Sulegaon R et al (2015)[17].

Table 23: Comparison of Most Common Peak Age of presentation of the Lower Gastrointestinal Malignant Neoplastic Lesion with the other Studies

Studies	Most Common Peak age of Presentation
Jhajj K et al (2010)[5]	50-59 years
Laishram R S et al (2010)[6]	60-69 years
Karve S. H. et al (2015)[18]	41-50 years
Sharma P et al (2015)[9]	61-70 years
Saiprasad et al (2015)[13]	61-70 years
Thakur Y. Rajesh et al (2016)[14]	51-60 years
Sheikh Bilal et al (2017)[15]	61-70 years
Umana Isoken O. M. et al (2017)[10]	50-59 years
Present Study	61-70 years

In the Present Study most common Peak Age of presentation of the Lower Gastrointestinal Malignant Neoplastic Lesion is 61-71 years which is similar to the observation in studies done by Sharma P et al (2015)[9], Saiprasad et al (2015)[13] and Sheikh Bilal et al (2017)[15].

CONCLUSION

This is a 3 year study conducted in a tertiary care hospital. 121 cases, of which 62 are retrospective and 59 are prospective of Lower Gastrointestinal tract are studied both retrospectively and prospectively and analysed taking into consideration the pathological findings and classification is done as per WHO recommendations. The following conclusions are drawn from the present study-

1. Non-neoplastic lesions are common in small intestine while large intestine harbours most of the malignant lesions.
2. Malignant lesions of small intestine are rare.
3. Juvenile Polyp is the most common histopathological type of benign tumor.
4. Adenocarcinomas are the most common malignant lesion with a peak incidence between 5^{th} to 7^{th} decade.
5. Rectum is the most common site for adenocarcinoma followed by Anal Canal.

6. Moderately differentiated Adenocarcinomas are the most common histological variant of Adenocarcinoma in colon.
7. Tumors of Lower Gastrointestine shows male preponderance with M:F of 1.42:1.
8. In my study earliest age of adenocarcinoma is 24 years female showing Signet Ring Cell differentiation.

Take Home Message

The present study has shown malignant lesions of the intestine in many young aged persons. So, any adult with complaints of vague abdominal pain, blood or mucus in the stool or features of hemorrhoids which may herald the onset of CRC should be adequately investigated with digital rectal examination, proctosigmoidoscopy, barium enema and diagnosed early through Histopathology which when correlated clinically will help the surgeon/clinician to implement the appropriate treatment and improve the survival of the patients.

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