

A Histopathological Study of Intestinal Lesions



Medical Science

KEYWORDS : Neoplasma, small intestine, large intestine

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ABSTRACT

BACKGROUND

The small intestine and colon account for the majority of GI tract length and are the sites of a broad array of diseases. The diseases of GIT are more common than any other system of the body. Some of them relate to nutrient and water transport. Intestinal neoplasm is a common form of neoplasm in India and world ever. It is a leading cause of death in the developed world, although more than half cases of carcinoma occurs in developing world.

AIM AND OBJECTIVES:

1. To study the prevalence of various intestinal lesions in our institute. This heading shall give special emphasis in reference to the following two features
 - a. To give site wise distribution of various neoplastic and non neoplastic lesions and compare its distribution.
 - b. To give male to female ratio of various intestinal neoplasm and do comparison with various studies.
2. To correlate the study done in our institute with the studies done in nationwide, worldwide statistics of intestinal neoplasm.
3. To classify prevalence into benign and malignant lesions and to give the level of differentiation for the lesion wherever possible.

MATERIAL AND METHOD:

During the period of seven months from October 2009 to april 2010,200 cases of intestinal lesions were received in department of histopathology in B J Medical College were analysed with clinical and gross details and histopathological findings.

CONCLUSION:

Non neoplastic lesions are mainly found in small intestine while large intestine harbours most of the neoplastic lesions .among the neoplastic appendicitis was the most common while among the neoplastic adenocarcinoma was the most common .colorectum is the most common site of neoplastic lesion of intestine.4th and 5th decades shows maximum number of cases. There was also a higher incidence in male patients.

INTRODUCTION

The small intestine and colon account for the majority of GI tract length and are the sites of a broad array of diseases. The diseases of GIT are more common than any other system of the body. Some of these relate to water and nutrient transport. Perturbation of these processes can cause malabsorption and diarrhoea. The intestines are also principal sites where immune systems interfaces with a diverse array of antigens present in food and gut microbes. Indeed, intestinal bacteria outnumber eukaryotic cells in our bodies by tenfold. Thus , it is not surprising that the small intestine and colon are frequently involved by infectious and inflammatory processes.

Intestinal Neoplasm is a common form of neoplasm in India and world ever. It is a leading cause of death in the developed world, although more than half cases of carcinoma occurs in developing world it further emphasizes proper documentation of histopathologically diagnosed neoplasm in the gastrointestinal tract.

AIMS AND OBJECTIVES

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MATERIAL AND METHODS

During the period of seven months from October 2009 to april 2010,200 cases of intestinal lesions were received in department of histopathology in our institute and were analysed with clinical and gross details and histopathological findings.The relevant clinical history and pathological findings were recorded as in the proforma, the slides stained with H&E STAIN.

Results

TABLE 1: DISTRIBUTION OF INTESTINAL LESIONS ACCORDING TO TYPE

INTESTINAL LESIONS		NO.OF CASES	PERCENTAGE(%)
NON-NEOPLASTIC		157	78.5
NEOPLASTIC	BENIGN	02	1
	MALIGNANT	41	20.5
TOTAL		200	100

Above table shows that non neoplastic lesions consist of 78.5% of total lesions while benign and malignant lesion consists of 1% and 20.5% of total lesion respectively.

TABLE 2: DISTRIBUTION OF INTESTINAL LESIONS ACCORDING TO AGE AND SEX OF THE PATIENTS

AGE	MALE	FEMALE	TOTAL	PERCENTAGE
<1	0	3	3	1.5
1-10	11	2	13	6.5

AGE	MALE	FEMALE	TOTAL	PERCENTAGE
11-20	18	11	29	14.5
21-30	24	22	46	23
31-40	23	14	37	18.5
41-50	24	11	35	17.5
51-60	13	5	18	9
61-70	11	3	14	7
>70	3	2	5	2.5
TOTAL	127	73	200	100

The above table shows that 4th and 5th decades show maximum number of cases along the intestinal tract were 18.5% and 17.5% respectively. It also most common in male.

TABLE 3: DISTRIBUTION OF INTETINAL LESIONS ACCORDING TO TYPE AND SITE OF THE LESIONS

SITE	NON NEOPLASTIC	NEOPLASTIC	TOTAL	PERCENTAGE
SMALL INTESTINE	69	4	73	36.5
LARGE INTESTINE	35	37	72	36
ANAL CANAL	10	2	12	6
APPENDIX	43	0	43	21.5
Total	157	43	200	100

Above table shows that non neoplastic lesions are most common in small intestine while large intestine harbours most of the neoplastic lesions .Appendix had only Non neoplastic lesions.

TABLE 4 :DISTRIBUTION OF NON-NEOPLASTIC LESIONS ACCORDING TO HISTOPATHOLOGY

TYPE	NO. OF CASES	percentage (%)
Non specific inflammation	10	6.4
Gangrene	12	7.6
Gangrene with perforation	4	2.5
Inflammation with perforation	25	15.9
Non specific ulcer	3	1.9
Ulcer with perforation	8	5.1
Tuberculosis	11	7.0
Tb with perforation	7	4.5
Ameobiasis	3	1.9
Juvenile polyp	8	5.1
Ulcerative colitis	3	1.9
Intestinal atresia	1	0.6
Necrotising enterocolitis	2	1.3
Hypertrophic anal papilla	1	0.6
Intussusception	2	1.3
Meckel's diverticulum	5	3.2
Anal wart	2	1.3
Appendicitis	43	27.4
Haemorrhoid	7	4.5
Total	157	100

Among non neoplastic lesions ,appendicitis was the most common one consisting of 27.4%.followed by non specific inflammation with perforation (15.9%).Gangrene and tuberculosis inflammation with follows next, consist of 7.6% and 7% respectively.

TABLE 5: DISTRIBUTION OF VARIOUS PERFORATIVE LESIONS ACCORDING TO THEIR SITE AND AETIOLOGY

TYPE OF PERFORATION SITE	NON SPECIFIC INFLAMMATION	TUBER CULOSIS	GANGRENOUS	TOTAL
DUODENUM	2	0	0	2
ILEUM & JEJUNUM	27	6	4	37
CAECUM	3	1	0	4
COLON	1	0	0	1
TOTAL	33	7	4	44

Among the various perforative lesions (n=44),non specific inflammation was the most common cause and ileum and jejunum was the most common site.

TABLE 6: DISTRIBUTION OF APPENDICITIS CASES ACCORDING TO THEIR HISTOPATHOLOGY

HISTOPATHOLOGY	NO. OF CASES	%
ACUTE	7	16.3
ACUTE SUPPURATIVE	14	32.6
ACUTE ON CHRONIC	15	34.9
CHRONIC NONSPECIFIC	1	2.3
TUBERCULOUS	1	2.3
GANGRENOUS	3	7.0
PERFORATIVE	0	0
PARASTIC INFECTION	2	4.6
TOTAL	43	100

The above table shows that among the acute on chronic appendicitis was the most common histological finding in cases of appendicitis (34.9%) followed by acute suppurative appendicitis(32.6%).there was one case of tubercular appendicitis and 2 cases of Enterobius Vermicularis infestation

TABLE 7: DISTRIBUTION OF VARIOUS NEOPLASMS ACCORDING TO THEIR HISTOPATHOLOGICAL TYPE

TYPE	NO. OF CASES	%
BASALOID CRCINOMA	1	2.3
ADENOCARCINOMA	34	79
GIST	1	2.3
LYMPHOMA	2	4.7
MELANOMA	2	4.7
TOTAL	43	100

The above table shows that adenocarcinoma was the most common neoplastic lesions.

TABLE 8: DISTRIBUTION OF NEOPLASTIC LESIONS OF INTESTINE ACCORDING TO AGE AND SEX OF PATIENTS

AGE	MALE	FEMALE	TOTAL	%
0-10	1	0	1	2.3
11-20	1	1	2	4.7
21-30	0	3	3	7
31-40	2	5	7	16.2
41-50	8	4	12	27.9
51-60	6	2	8	18.6
61-70	7	1	8	18.6
>70	1	1	2	4.7
TOTAL	26	17	43	100

The above table shows that the neoplastic lesions of the intestine are most common in the age group 41-50 years followed by 6th and 7th decade. There were also a male preponderance.

Table 9:site wise distribution of neoplastic lesions.

Site	No of cases	%
Small intestine	4	9.3
Colorectum	37	86.0
Anal canal	2	4.7
Total	43	100

The above table shows that colorectum is the most common site of neoplastic lesion of intestine.

Table 10 : age and site wise distribution of various neoplastic lesions

site	Age									TOTAL
	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	>80	
SI	0	1	0	0	0	1	0	1	0	3
LI	1	1	3	6	11	7	8	1	0	38
ANAL CANAL	0	0	0	1	1	0	0	0	0	2
TOTAL	1	2	3	7	12	8	8	2	0	43

The above table shows that large intestine is the most common site for neoplasm and most common in the 5th decades.

Table 11: Distribution adenocarcinoma according to DUKE’S Stage

HISTOLOGY	DUKE A	DUKE B	DUKE C	TOTAL	PERCENTAGE (%)
NON MUCINOUS	0	12	5	17	63
MUCINOUS	0	4	4	8	29.6
SIGNET RING	0	2	0	2	7.4
TOTAL	0	18	9	27	100

In our study 27 cases were of adenocarcinoma out of which 17 were non mucinous .8 mucinous and 2 signet ring type. According to Dukes 's staging 18 of them were of Duke's B STAGE.9 were of Dukes's C stage ,non was stage A.

Table 12 : comparison Aetiology of non neoplastic small intestinal perforation with other study.

TYPE	OUR STUDY(%)	Khan et al(%)	Chatterjee et al(%)	Chitkara at (%)
TYPHOID	0(0)	7(50)	248(66.1)	92(56)
NON SPECIFIC	29(74.4)	5(35.7)	111(29.6)	36(22)
TUBERCULAR	6(15.4)	2(14.3)	16(4.3)	36(22)
GANGRANOUS	4(10.2)	0(0)	0(0)	0(0)
TOTAL	39(100)	14(100)	375(100)	164(100)

The above table shows that in our study incidence of non specific perforation is highest while in other typhoid was most common.

Table 13: age wise incidence of nonspecific ulcer in small intestine with other study

Age	Our study	%	Boydston et al	%
11-20	1	11.1	4	6.8
21-30	3	33.3	4	6.8
31-40	3	33.3	7	11.9
41-50	1	11.1	10	16.9

Age	Our study	%	Boydston et al	%
51-60	1	11.1	14	23.7
61-70	0	0	15	25.4
71-80	0	0	5	8.5
Total	9	100	59	100

The above table shows that small intestine ulcer was highest in 3rd and 4th decades in our study while in the Boydston study incidence was highest in 7th decades.

Table no 14 : Comparison of age and sex wise incidence of various malignant lesions of small intestine with other study BIR HOSPITAL STUDY 4

AGE	ADENOCARCINOMA			GIST			NHL			T	%
	M	F	T(%)	M	F	T(%)	M	F	T(%)		
0-15	0	0	0	0	0	0	0	0	0	0	0
16-30	0	0	0	1	0	1	0	0	0	1	11.1
31-45	0	0	0	0	1	1	0	0	0	1	11.1
46-60	0	0	0	1	0	1	1	0	1	2	22.2
61-75	1	1	2	0	1	1	2	0	2	5	55.6
>75	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1	1	2(22.2)	2	2	4(44.4)	3	0	3(33.3)	9	100

OUR STUDY

AGE	ADENOCARCINOMA			GIST			NHL			T	%
	M	F	T(%)	M	F	T(%)	M	F	T(%)		
0-15	0	0	0	0	0	0	1	0	1	1	25
16-30	0	0	0	1	0	1	0	0	0	1	25
31-45	0	0	0	0	0	0	0	0	0	0	0
46-60	1	0	1	0	0	0	0	0	0	1	25
61-75	1	0	1	0	0	0	0	0	0	1	25
>75	0	0	0	0	0	0	0	0	0	0	0
TOTAL	2	0	2(50.0)	1	0	1(25.0)	1	0	1(25.0)	4	100

In our study the above table shows that among 4 cases 2 were adenocarcinoma and both were found in 46 to 75 years age group. There was one case of GIST and non Hodgkin 's lymphoma and both were found in males, while in Bir hospital study .among 9 cases ,only 2 cases were adenocarcinoma and both were found in 61to 75 years age group.GIST were 4 cases and equal in both male and female.NHL found in male only and most common age group was 61-75 years.

TABLE NO 15 COMPARISION OF AGE AND SEX WISE INCIDENCE OF VARIOUS MALIGNANT LESIONS OF LARGE INTESTINE WITH OTHER STUDY BIR HOSPITAL STUDY 4

AGE	ADENOCARCINOMA			GIST			NHL			T	%
	M	F	T(%)	M	F	T(%)	M	F	T(%)		
0-15	1	0	1	0	0	0	1	0	1	2	2.7
16-30	1	3	4	1	0	1	1	0	1	6	8.2
31-45	6	3	9	0	0	0	2	0	2	11	15.1
46-60	15	14	29	0	0	0	0	0	0	29	39.6
61-75	16	2	18	1	0	1	0	0	0	19	26.2
>75	4	1	5	1	0	1	0	0	0	6	8.2
TOTAL	43	23	66(90.4)	3	0	3(4.1)	4	0	4(5.5)	73	100

OUR STUDY:

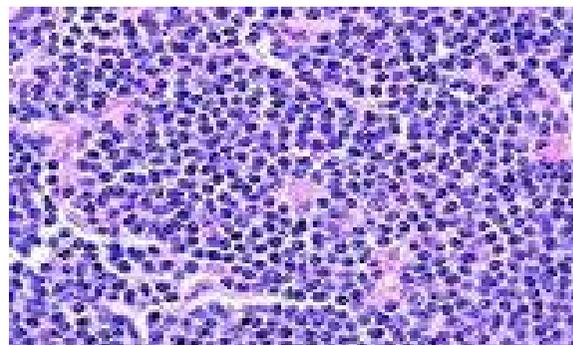
AGE	ADENOCARCINOMA			GIST			NHL			T	%
	M	F	T(%)	M	F	T(%)	M	F	T(%)		
0-15	0	0	0	0	0	0	0	0	0	0	0
16-30	0	0	3	0	0	0	0	0	0	3	9.1
31-45	4	5	9	0	0	0	0	0	0	9	27.3
46-60	9	4	13	0	0	0	1	0	1	14	42.4
61-75	5	2	7	0	0	0	0	0	0	7	21.2
>75	0	0	0	0	0	0	0	0	0	0	0
TOTAL	18	14	32(97.0)	0	0	0	1	0	1(3.0)	33	100

In our study among the malignant tumors of large intestine ,32 cases were adenocarcinoma ,which was comparable to Bir hospital study.Mle and female ration in our study was 1.28:1,which was also comparable to other study.The most common age grioup in male was 46 to 60 years and in female 31 to 45 years ,which is decades younger than the Bir hospital study.

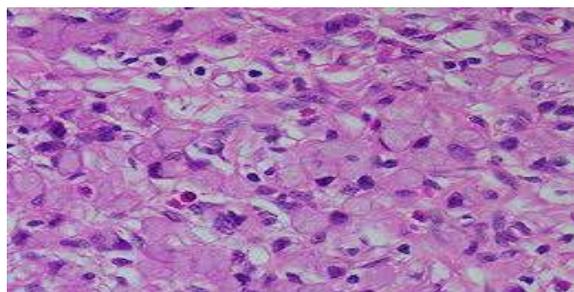
TABLE 16: COMPARISON OF DIFFERENTIATION AND DUKE’S GRADING WITH OTHER STUDY

HISTOLOGY	DUKE A		DUKE B		DUKE C		TOTAL	
	Our study	JPMA	Our study	JPMA	Our study	JPMA	Our study	JPMA
NON-MUCINOUS	0	4(100)	12(66.7)	51(73.9)	5(55.6)	4(14.8)	17(63)	59(59)
Mucinous	0	0	4(22.2)	18(26.1)	4(44.4)	12(44.4)	8(29.6)	30(30)
SIGNET RING	0	0	2(11.1)	0	0	11(40.8)	2(7.4)	11(11)
TOTAL	0	4(100)	18(100)	69(100)	9(100)	27(100)	27(100)	100(100)

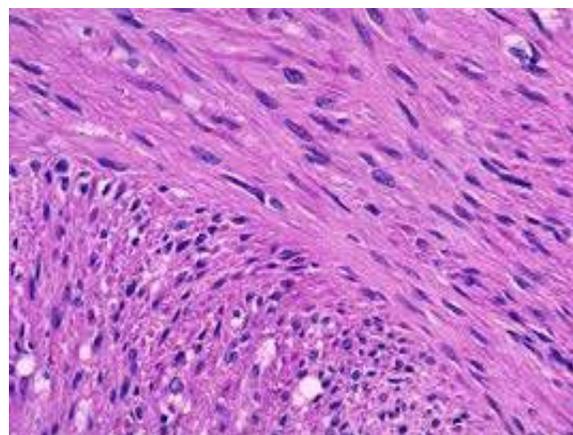
In our study ,27 cases were of adenocarcinoma among them 17 were non mucinous adenocarcinoma.8 mucinous adenocarcinoma and 2 signet ring carcinoma. According to Dukes s’staging , 18 of them were of Dukes’sstage B,and 9 were of Dukes stage C ,non was stage A. Among the 17 cases of non mucinous carcinoma 12 were of Dukes stage B ,and 5 were of Dukes ‘stage C. In 8 mucinous types,4 were included in Dukes stage B and 4 IN Dukes ,stage C.All signet ring cell caecrinoma were in Dukes ‘s stage B ,which is comparable to THE JPMA study.



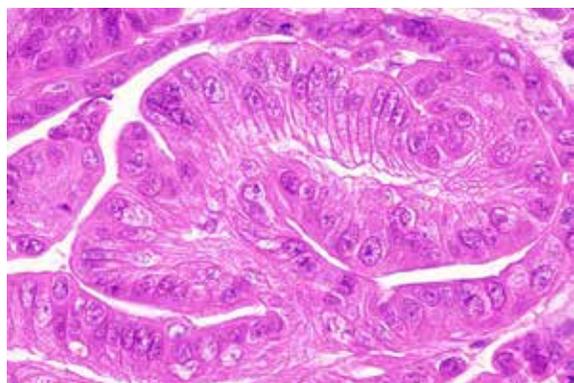
Non Hodgkin's lymphoma (20X)



Signet ring carcinoma (40x)



GIST (20X)



Adenocarcinoma of colon(40x)

Conclusion

Non neoplastic lesions are mainly found in small intestine while large intestine harbours most of the neoplastic lesions .Among the neoplastic appendicitis was the most common followed by non specific inflammation with perforation ,gangrene and tu-

berculous inflammation follow next. Among the various ulcerative lesion of intestine ,the most common site was ileum and jejunum and they were most common in 21-30 years of age. Among the neoplastic adenocarcinoma was the most common. Colorectum is the most common site of neoplastic lesion of intestine.4th and 5th decades shows maximum number of cases. There was also a higher incidence in male patients.

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