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HISTOPATHOLOGICAL SPECTRUM OF SMALL AND LARGE INTESTINAL LESIONS IN A TERITARY CARE HOSPITAL - A 2 YEAR RETROSPECTIVE ANALYSIS.

Pathology

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ABSTRACT

Introduction: Small and large intestine are affected by a variety of lesions, both non-neoplastic and neoplastic. Large intestine harbours more of malignancies than the small intestine. Histopathological examination of biopsy, polypectomy and resected specimens are crucial for determining the extent of disease, patient management and prognosis assessment.

Aim and objective: To study the age, sex and site wise distribution of various histopathological lesions of small and large intestine over a period of 2 years.

Materials and Methods: A retrospective study of HPE slides of small biopsies, polypectomies and large resected specimens of 131 cases over a period of 2 years from April 2016 to March 2018 done at the Department of Pathology, GVMCH, Vellore, Tamil Nadu

Results: Out of 131 cases, 72 were inflammatory (55%), 8 were benign(6%) and 51 cases were malignant(39%) lesions. Majority of the epithelial malignancies were adenocarcinomas of large intestine.

KEYWORDS

Histopathology, adenocarcinoma, Polyps, inflammatory lesions, Gastro-intestinal stromal tumors.

Introduction:

Carcinoma is a major public health problem all over the world, accounting for almost one in every 4 deaths.[1] Large bowel is a leading site for cancer in developed countries whereas small bowel cancers are rare worldwide. The incidence of both large and small bowel cancers are low in India. As Higginson has pointed out, the incidence of bowel cancer is related to the economic development and no other forms of cancer is related to economic development or is so closely linked to the alterations in dietary habits with which this is usually associated.[2]

The definitive diagnosis of GI lesions depends on Histopathological confirmation and is one of the bases for proper planning of treatment regimens. GI cancers account for 20% of estimated new cancer cases and 15% of estimated death world wide.[3],[4],[5],[6]

In humans, the gut is divided into four major organs, oesophagus, stomach, small intestine and large intestine. The different Pathologies that affect gut as a whole or a part there of could be divided into inflammatory etiology or a neoplastic condition which could further be divided into benign and malignant lesions.

Small bowel which represents 75% of the length of alimentary tract, is the seat of 2% of all malignant neoplasms of GIT. Large intestine and anal canal are sites of a broad array of non-neoplastic and neoplastic diseases which at times can lead to serious complications. They can be sites for infections, vascular disorders, ulcers, various inflammatory conditions and neoplasms.[7] Epithelial tumors are the major causes of morbidity and mortality. Colorectal cancer is the fourth ranking cancer worldwide, accounting for approximately 9% of all cancers.[8]

90% of all cancers in the large intestine are adenocarcinomas. They arise as polyps and produce symptoms relatively early and at a stage generally curable by resection. The peak incidence of colorectal carcinoma is 60-70 years of age and fewer than 20% of cases occur under 50 years.[9] Colorectal carcinoma in patients under 40 years of age has a poor prognosis.

Aim:

This study was done over a period of 2 years to study the age, sex and site wise distribution of various histopathological lesions of small and large intestine.

Materials and Methods :

The present study is a retrospective study of HPE slides of small biopsies, polyps and resected specimens over a period of 2 years from April 2016 to March 2018 at Department of Pathology, Government Vellore Medical College & Hospital, Vellore, Tamil Nadu. A total of 131 cases were studied. The blocks and slides were retrieved from the archives. H and E stained sections were reviewed.

Inclusion criteria in the study : Small biopsies, polypectomies and large resected specimens.

Exclusion criteria : Appendicectomy, fistulectomy and hemorrhoidectomy.

Results:

Total number of specimens from small and large intestine during the period of study were 131 excluding appendix, omental biopsy, fissure-in-ano, fistula-in-ano and haemorrhoids as per exclusion criteria of the present study. Age group ranged from 8 to 86 years.

The first attempt was made to find out age and gender incidence in the present study. The intestinal lesions were predominantly observed in the age group of 42-50 years.(Table:1).

Table : 1. Age distribution in the present study.(n=131).

Age (years)	Number	Percentage (%)
0-10	5	3.8%
11-20	11	8.4%
21-30	15	11.4%
31-40	17	13.0%
41-50	34	26%
51-60	23	17.6%
61-70	22	16.8%
71-80	2	1.5%
81-90	2	1.5%

Male preponderance was observed in the present study with a M : F ratio of 1.8:1.(Table:2).

Table : 2.Gender distribution in the present study (n=131).

Gender	Number	Percentage (%)
Male	91	69.5 %
Female	40	30.5 %

The lesions were categorised as inflammatory, benign and malignant.

91 lesions were from male patients and 40 were from female patients. The majority of lesions had inflammatory pathology which constituted 72 cases in all. 51 lesions were malignant. The most common age group for malignancy was between 61-70 years in males and 41-50 years in females in the present study. (Table :3 &4, Figure: 1 &2).

Table :3.Histopathological spectrum of intestinal lesions.

Histopathology	Number	Percentage (%)
Inflammatory	72	55%

Benign	8	6%
Malignant	51	39%
Total	131	100%

Table : 4 Age-wise distribution of the histopahological spectrum of intestinal lesions.

Age Group	Male			Female		
	Inflammatory	Benign	Malignant	Inflammatory	Benign	Malignant
0-10 yrs	3	1	-	-	1	-
11-20 yrs	5	1	-	5	-	-
21-30 yrs	8	1	1	3	1	1
31-40 yrs	7	-	2	6	-	2
41-50 yrs	14	1	6	4	-	9
51-60 yrs	8	1	9	1	1	3
61-70 yrs	6	-	14	-	-	2
71-80 yrs	1	-	1	-	-	-
81-90 yrs	1	-	-	-	-	1

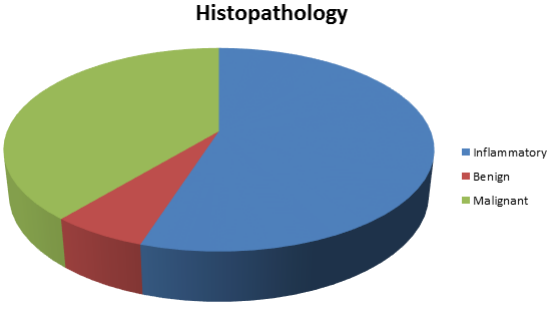


Fig : 1. Histopathological spectrum of intestinal lesions.

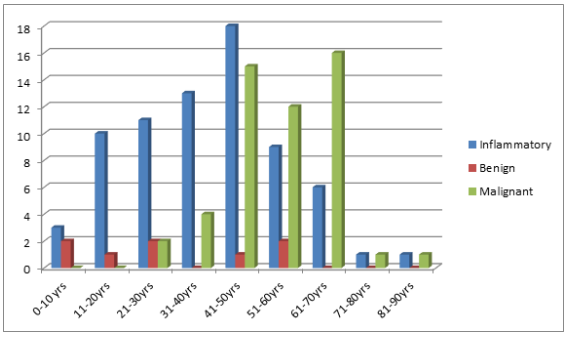


Fig :2 . Age-wise distribution of the histopathological spectrum of intestinal lesions.

Majority of epithelial malignancies were adenocarcinomas which accounted to 39 cases, of which 38 cases were adenocarcinomas of large intestine and only one case of small intestinal adenocarcinoma was reported. Other malignancies encountered in the present study were 7 cases of squamous cell carcinoma, 4 malignant GIST(Gastro Intestinal Stromal Tumor) and 1 case of Peutz-Jegher's polyp transforming into malignancy. Incidence of malignancy was more common in males. Moderately differentiated adenocarcinomas was the most common accounting to 26 cases.

8 polyps were reported which included 2 cases of Fibroepithelial polyp, 1 case of inflammatory polyp, 2 cases of PJ polyp, 2 cases of Juvenile polyp and 1 case of lipomatous polyp involving small intestine.

Inflammatory lesions were common between the 2nd and 6th decade.

5 cases of Meckel's diverticulum were found in the present 2 years study.

Of the 10 small biopsies which were correlated with large resected specimens. 9 had positive correlation. 2 cases of adenocarcinoma of large intestine were moderately differentiated grade in small biopsy, but it was poorly differentiated grade in resected specimen.(Figure:3).

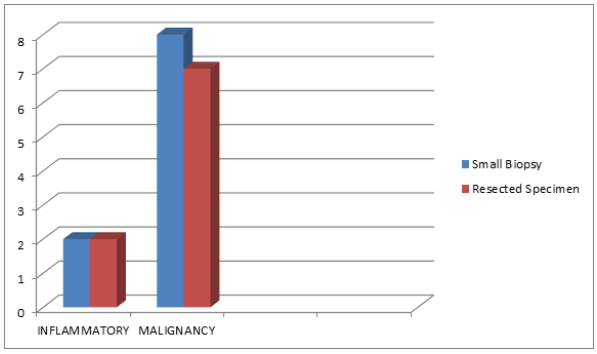


Fig : 3. Correlation of small biopsy with resected specimen.

Discussion:

In the present study of 131 cases, non-neoplastic lesions constituted 72 cases and neoplastic lesions constituted 59 cases. Among the neoplastic lesions, malignant lesions constituted maximum number of cases(51 cases) and benign were 8 cases, which was similar to the observation made by Sulegaon et al.[10]

Inflammatory lesions involve all the age groups. Malignant neoplasms are more common in males between 40-70 years and in females between 40-60 years. Male to female ratio of malignancies is 1.8:1 which is in correlation to the study done by James M.Crawford who found that the male to female ratio was 2:1,[11] similar to that observed by Pavani Manthiri et al.[12]

Among the adenocarcinomas in the present study, moderately differentiated adenocarcinoma was the most common accounting to 26 cases which is in correlation with the studies done by Ritesh et al and Caliskan et al.[13]

5 cases of GIST were found in the present study, of which 4 cases were malignant GIST of small bowel and affected individuals aged from 50-70 years similar to the observation made by Lupescu IG et al.[14]

Out of the 8 polyps in the present study, one of the interesting case was a 47 yr female in whom a PJ polyp transforming into malignancy was noted. Although PJ polyps are classified as hamartomas, patients with the PJ syndrome are at increased risk for the development of dysplasia and invasive carcinoma in the polyps, as well as in the adjacent mucosa[15]. Foci of dysplasia and or invasive carcinoma are present in 2% - 6% of PJ polyps and are morphologically similar to those seen in conventional adenomas.[15]

Out of the 10 cases where small biopsies had been correlated with large resected specimens, 9 cases had positive correlation, which is 90%. 2 cases of small intestinal biopsy had positive correlation which were reported as inflammatory pathology. 8 cases of large bowel biopsy were correlated of which one case had negative correlation - a rectal biopsy which was diagnosed as adenocarcinoma in the small biopsy had no residual tumor in the resected specimen. 2 other cases, which were proved to be adenocarcinomas in both small and large biopsy had discordance in grading of the tumour. Both the cases were reported as moderately differentiated adenocarcinomas in small biopsy but one case turned out to be poorly differentiated adenocarcinoma and the other was a well differentiated adenocarcinoma in the resected specimen. As the small biopsy are taken as small fragments from an easily accessible site, the grade of the tumour might vary in a different location of the same tumour. Thus, small biopsy can clinch at the correct diagnosis of typing the lesion, but as the tumour can have a different grade at other sites, wider biopsies are mandatory for accurate grading of the lesion.

Out of the 131 cases in the present study, there were 57 small biopsies and 74 large resected specimens.

Of the 57 small biopsies, only 12 cases were from the small bowel and 45 cases were from the large bowel. This could probably be due to the easy approach of biopsy of large bowel through distal scopies and also,

epithelial malignancies are more common in the large bowel, which can be biopsied through scopies without major complications. Whereas stromal tumours which are more common in small intestine cannot be biopsied through scopies, large resections are more commonly done.

CONCLUSION:

In this study, we observed that inflammatory lesions are more common in all age groups. Malignant lesions are more common in males than in females. Epithelial malignancies are more common in large intestine whereas as stromal tumours are common in small intestine.

As well developed newer techniques are available for gastric, small bowel and colonic mucosal biopsy for earlier diagnosis of epithelial lesions, minimal access procedures like laproscopic stromal biopsies can help to diagnose the stromal tumors at an earlier stage.

Although new techniques in particular IHC and molecular analysis have become popular in research analysis, H & E staining is remarkable in making a diagnosis with less cumbersome procedure at a lower cost and remains the gold standard.

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