

A Histopathological Study Of Small Intestinal Lesions

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ABSTRACT: Introduction: *The small intestine is susceptible to a broad range of lesions. Small intestinal specimens are received very frequently which are found to be non-neoplastic lesions like ileitis, inflammation, etc., and neoplastic lesions like polyps and carcinoma. Histopathological study along with clinical and radiological findings are required for proper diagnosis.*

Materials and methods: *This retrospective study of 46 cases was studied in the department of pathology of Saveetha medical College hospital between January 2019 to December 2019. The specimens were studied under H&E stains and special stains when required.*

Result: *Among the 46 cases, there were 41(89%) non-neoplastic lesions and 5 (10.7%) neoplastic lesions. They were mainly seen in the 4th and 5th decades with a male predominance of 1.9:1 ratio of male to female. Among the non-neoplastic lesions, chronic ileitis was the most common (21.9%) followed by ulceration with granulation tissue (14.6%) and chronic inflammation (12.1%). Among the neoplastic lesions, there were 4 benign (80%) and one malignant (20%).*

Conclusion: *Awareness and understanding of the various lesions occurring in the small intestine is necessary for better diagnosis. A detailed histopathological study along with the clinical and radiological findings is needed for accurate diagnosis and treatment.*

KEYWORDS: *small intestine, non-neoplastic, Peutz-jegher, ileum, jejunum*

1. INTRODUCTION

The small intestine occupies a major part of the gastrointestinal tract. As the digestion and absorption process occurs, the intestine is associated with number of water and nutrient transport. Disturbance in any of these can lead to diarrhea and malabsorption. The intestine is also one of the main sites of encounter for a range of antigens from food and microbes. As the mucosal epithelium extends throughout the length of the small intestine, it is easily susceptible to various lesions and diseases. Presence of such a wide variety and number of gut flora, where the intestinal bacteria are ten times more than eukaryotic cells of the body, makes it more susceptible to different infections and inflammatory processes. These small bowel disorders account for majority of the human diseases. ^[1]

Inflammatory lesions are very commonly seen in the small intestine. Even though neoplastic lesions maybe uncommon compared to non-neoplastic lesions, their prevalence have been increasing these days. It is due to these reasons it's important to document and analyze the prevalence of these lesions and sites diagnosed histopathologically. ^[2, 3]

2. MATERIALS AND METHOD

A retrospective study of the small intestinal lesions received by the Department of Pathology, Saveetha Medical College during the period of one year from January 2019 to December 2019. A total of 46 specimens were received in the period of study which was received in 10% buffered neutral formalin and the usual histopathological processes were done. Sections of it were stained with H&E and studied under light microscope. Wherever required, special stains were also used and the data was analyzed and according results were acquired.

3. RESULT

A total of 46 cases were studied of which the age ranged from 5 years to 72 years. There were 29 males and 15 females. Table 1 shows the prevalence of the small intestinal lesions among different age groups and the number of male and female cases. Table 1 shows that the 4th and 5th decades show maximum number of cases, 19 and 28 respectively with a male predominance with a ratio of 1.9:1.

36 cases (78.2%) were from ileum, 7 cases (15.2%) from jejunum and 3 cases (6.5%) from the duodenum. Table 2 shows the distribution of lesions among the three parts of small intestine i.e., duodenum, jejunum and ileum.

Out of the 46, 41 cases (89%) were non-neoplastic and 5 cases (10.7%) were neoplastic, out of which 4 were benign and 1 was malignant. Table 3 shows the number of neoplastic and non-neoplastic lesions and among the neoplastic, the number of benign and malignant lesions.

Table 4 shows the distribution of the lesions among the sites according to the type of lesion. The above table shows that non neoplastic lesions are most common in the ileum region i.e., 33 cases, while neoplastic lesions have a fairly even distribution among ileum (3 cases) and jejunum (2 cases). In the duodenum, there were no neoplastic lesions seen.

Table 5 lists out distribution of non-neoplastic lesions according to histopathological diagnosis and the number of lesions of it. The above table shows that among non-neoplastic lesions, chronic ileitis is the most common one followed by ulceration and chronic inflammation.

Table 6 shows the number and distribution of neoplastic lesions according to histopathological diagnosis. The above table shows that benign lesions are more common than malignant lesions in the small intestine.

TABLE 1: Distribution of small intestinal lesions according to age and sex of the patients

Age	Male	Female	Total	Percentage %
1-10	1	0	1	2
11-20	3	0	3	6
21-30	5	2	7	15
31-40	7	1	8	17

Age	Male	Female	Total	Percentage %
41-50	4	5	9	19
51-60	7	6	13	28
61-70	2	1	3	6
71-80	1	1	2	4
Total	29	15	46	100

TABLE 2: Distribution of small intestinal lesions according to site

Site	No. Of cases	Percentage %
Duodenum	3	6.5
Jejunum	7	15.2
Ileum	36	78.2

TABLE 3: Distribution of small intestinal lesions according to type

INTESTINAL LESIONS	NO. OF CASES	PERCENTAGE %
Non-neoplastic	41	89.1
Neoplastic	5	10.9
Benign	4	8.7
Malignant	1	2.2
Total	46	100

TABLE 4: Distribution of small intestinal lesions according to type and site of the lesions

Site	Non-neoplastic	Neoplastic	Total	Percentage %
Duodenum	3	0	3	6.5
Jejunum	5	2	7	15.2

Site	Non-neoplastic	Neoplastic	Total	Percentage %
Ileum	33	3	36	78.3
Total	41	5	46	100

TABLE 5: Distribution of non-neoplastic lesions according to histopathological diagnosis

Type	No. of cases	Percentage %
Chronic inflammation	5	12.2
Ulcer with granulation tissue	6	14.6
Chronic ileitis	9	22
Tuberculosis	3	7.3
Gangrene	2	5
Ischemic necrosis intestine	3	7.3
Atypical adenomatous hyperplasia	1	2.4
Chronic duodenitis	1	2.4
No specific pathology	11	26.8
Total	41	100

TABLE 6: Distribution of neoplastic lesions according to histopathological diagnosis

Type	No. of cases	Percentage %
Benign		
Adenomatous polyp	2	40
Benign spindle cell neoplasm	1	20
Gastrointestinal stromal tumor	1	20
Malignant		
Metastatic adenocarcinoma	1	20
Total	5	100

4. DISCUSSION

During the 6 months from June 2019 to December 2019, a total of 46 cases were studied among which there were 41 (89%) non-neoplastic lesions and 5(10.7%) neoplastic lesions. out of 5 neoplastic lesions, 4 (8.6%) were benign and 1 (2.1%) was malignant. The lesions were seen in all age groups but it was seen maximum in the 4th and 5th decades as seen in the study by Masgal M et al ^[4] and Nanavati MG et al ^[5]. The male to female ratio is 1.9:1, similar to the observation made by Prasad G et al ^[2] and Devi Jawahar et al ^[6]. The non-neoplastic lesions were commonly seen in the ileum (78.2%) followed by 15.2% in jejunum and 6.5% in duodenum.

Among the non-neoplastic lesions, 21.9% of the cases were chronic ileitis, followed by 14.6% of ulceration with granulation tissue and 12.1% of chronic inflammation. In 7.3% of cases, ischemic necrosis of intestine was seen. Tuberculosis and gangrene were 7.3% and 4.8% respectively as seen similarly in the study by Nanavati MG et al ^[5].

The ileitis and ischemic necrosis cases were commonly seen among the 4th and 5th decades as seen in the study by Prasad G et al ^[2]. A case of chronic duodenitis ^[7, 8] where there was increase in intraepithelial lymphocytes seen as seen in Sharma et al ^[9] and Jaynul Islam et al ^[10]. Atypical adenomatous hyperplasia was also seen.

Among the neoplastic lesions, there were 4 benign cases and one malignant case. There were 2 adenomatous polyp cases, among which one was suggestive of Peutz-jegher polyp found in the jejunum. In Peutz-jegher polyp there will be arborizing network of connective tissue, lamina propria, smooth muscle and glands being lined by normal-appearing intestinal epithelium. There was a case of benign spindle cell neoplasm, an inflammatory myofibroblastic tumour type. There was 1 case of small intestinal gastrointestinal stromal tumor, a spindle cell type of histology grade 1(low grade) found in the ileum. Unlike according to the study by Prasad G et al ^[2] and Farhat MH et al ^[11], all the cases were found in the jejunum. One case of metastatic adenocarcinoma was observed similar to the study by Prasad G et al ^[2] and Terada T et al ^[12]. Primary site was not studied in the current study.

5. CONCLUSION

Lesions of small intestine are seen in all ages with a majority in the 4th and 5th decades and male predominance. Non-neoplastic lesions are more common than neoplastic in the small intestine found mainly in the ileum. Among the non-neoplastic, chronic ileitis is the most common followed by ulceration and inflammation. The study shows the importance to histopathological study in diagnosis of the lesions and in understanding the pathogenesis of this and for better treatment.

SOURCE OF FUNDING: Nil

CONFLICT OF INTEREST: No conflict of interest

ACKNOWLEDGEMENT: We are thankful to our technicians who supported us.

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