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Histopathological study of Small Intestinal and Appendicular lesions. An Institutional Study

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Abstract

Introduction: Diseases of Gastro Intestinal Tract (GIT) are more common than any other system in human body. Non-neoplastic lesions are more common than neoplastic lesions in small intestine.Appendix is the most common site for non-neoplastic lesions.Acute appendicitis is the most common non-neoplastic lesion of appendix.

Aim: To study histopathological spectrum of small intestine and appendix lesions and to analyse with respect to age, sex, anatomical site and relative frequency.

Material and Methods: The present study (Prospective and retrospective) was conducted in the Department of Pathology, Govt. Medical College Jammu. Total 1686 cases which includes 1496 (87.61%) appendectomy specimens and 190 (11.26%) small intestinal specimens including 51 endoscopic biopsies and 139 resection specimens were received for histopathological examination. In addition to H and E, special stains were done in required cases.

Result: Total 1686 cases which includes 1496 (87.61%) appendectomy specimens and 190 (11.26%) cases of small intestinal lesions were studied. Of small intestine lesions, 188 cases (98.94%) were non-neoplastic and 2 cases (1.05%) were neoplastic. Common age group was 4^{th} to 5^{th} decades with male predominance.Non-specific inflammatory lesions 135 (71.05%) were the most common non-neoplastic lesion of small intestine followed by ischemic congestivepathology 32 (16.84%). Appendix was the most common site for non-neoplastic lesions. 20-29 years age group accounting for most of the caseswith male predominance. Acute appendicitis 1458 cases (97.79%) was the most common non-neoplastic lesion of appendix followed by chronic appendicitis 32 cases (2.15%) and 1 case (0.07%) of granulomatous lesion were studied. Neoplastic lesions of appendix including 2 cases (40%) of mucinouscystadenoma, 2 cases (40%) of Carcinoid and 1 case (20%)of mucinous cystadenocarcinoma.

Conclusion: A greater awareness of various diseases of small intestine and appendix is felt necessary for a better diagnosis. For accurate diagnosis a detailed histopathological study of the small intestinal

specimens should be done in correlation with clinical and radiological findings.

Keywords: Enteritis, Carcinoid, Acute Appendicitis, Neoplastic Lesions

Introduction

Lesions of the GIT range from inflammatory lesions to carcinomas.Cancer accounting for almost one in every four deaths is a major public health problem all over the world [1]. Gastro Intestinal Tract (GIT) is an important site for wide variety of lesions which include congenital, inflammatory, neoplastic conditions. The definitive diagnosis of gastrointestinal lesions largely depends on the histopathological confirmation and is one of the bases for planning proper treatment regimen. Gastrointestinal (GI) cancers account for 20% of estimated new cancer cases and 15% of estimated death worldwide[2,3,4]**.** Nearly 75% of the total length of the gastrointestinal tract is made up by small bowel and it constitutes more than 90% of the mucosal surface area [5]. Small intestine accounts for majority of diseases including infections, inflammatory diseases, and tumours [6].Earlier, only severe acute and chronic pathological conditions were brought to the attention through literature. Now, ileoscopy helps to demonstrate many forms of enteritis [7]. Worldwide, malignant tumours of the small intestine make up less than 1.0 per 100,000 population and thus are rare [8].Most tumours originate in duodenum (55.2%), followed by jejunum (17.6%) and the ileum (13%) [9]. Thus, the following study is undertaken to study the histopathology of these lesions. After accurate diagnosis, treatment modalities can be applied.

Material and Methods

The present study (Prospective and retrospective) was conducted in the Department of Pathology, Govt. Medical College Jammu from 2012 to 2017. Total 1686 cases which includes 1496 appendectomy specimens and 190 small intestinalspecimenswhich includes 51 endoscopic biopsies and 139 resection specimens received for histopathological examination were studied.Brief clinical details including age, gender and clinical symptoms from case records of patients were documented. Other routine investigation results and radiological examination like X–ray and ultrasound reports of the patients were also recorded. The specimens were preserved in 10% formalin and fixed for 24 hours, processed for paraffin sectioning, 5 µ thick sections were cut and slides were prepared andstained by routine haematoxylin and eosin stains and histological features were studied. Special stains like Zeil-Neelson for AFB, PAS for mucin were also done whenever indicated.

Results

Total 1686 cases which includes 1496(87.61%) appendectomy specimens and190 (11.26%) cases of small intestinal lesions were studied. Of small intestine lesions, 188 cases (98.94%) were non-neoplastic and 2 cases (1.05%) were neoplastic.Non-specific inflammatory lesions 135 (71.05%) were the most common non-neoplastic lesion of small intestine followed by ischemic congestivepathology 32 (16.84%)followedbygranulomatouspathology 11 (5.85%).Most common neoplastic lesions of intestine were tubular adenoma and hyperplastic polyps. No malignant small intestine lesion was observed in this study.Male to female ratio was 2:1.Patients in age group of 40-50 years of life were most commonly affected.

Table 1: Types of gross small intestinal specimens

	Biopsy	Specimen	No. (%)
Duodenum	29	00	29 (15.26%)
Jejunum	05	15	20 (10.52%)
Ileum	17	124	141 (74.21%)
Total	51	139	190 (100)

Table 2: Lesions of small intestine

	No.	%
Non-specific inflammatory pathology	135	71.05
Ischaemic congestive pathology	32	16.84
Granulomatous	11	5.78
Intussusception	05	2.63
Celiac disease	04	2.10
Enteric enteritis	01	0.52
Tubular adenoma	01	0.52
Hyperplastic polyp	01	0.52
Total	190	100

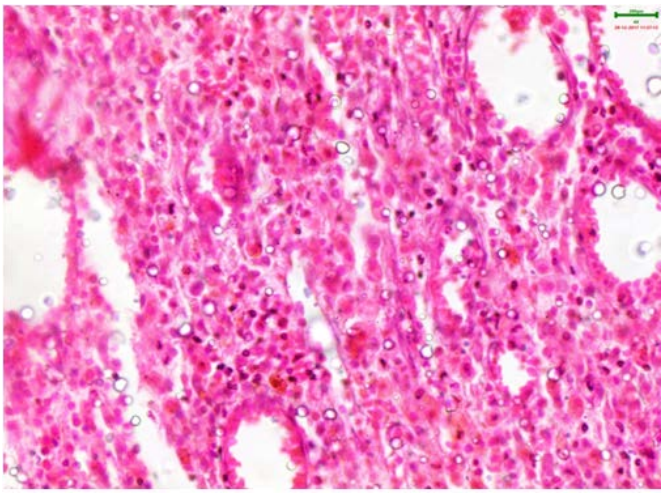

Figure 1: enteric enteritis showing sheets of macrophages, plasma cells, neutrophils, erythrophagocytosis[H and E 40 × 10 X]

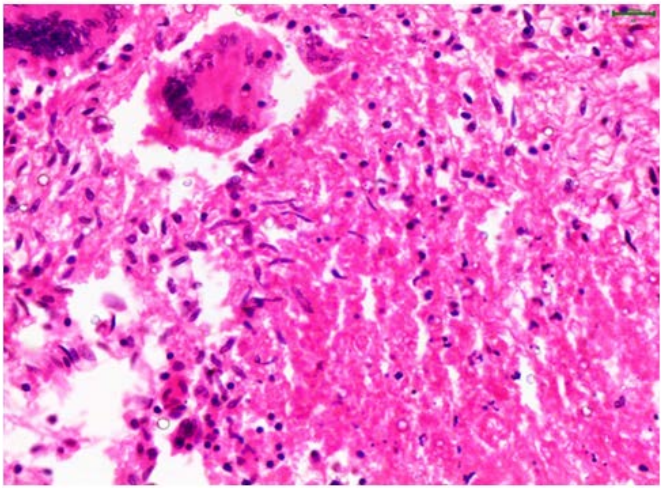

Figure 2: Granulomatous inflammation showing necrosis and langhans type giant cells [H and E 40 × 10 X].

Appendix was the most common site for non-neoplastic lesions.Acute appendicitis 1458 cases (97.79%) was the most common non-neoplastic lesion of appendix followed by chronic appendicitis 32 cases (2.15%) and 1 case (0.07%) of granulomatous lesion were studied. Neoplastic lesions of appendix including 2 cases (40%) of mucinouscystadenoma, 2 cases (40%) of Carcinoid and 1 case (20%)of mucinous cystadenocarcinoma. Most of the appendices were from males in a sex ratio

of 1.8:1. 20-29 years age group accounting for most of the cases.

Table 3: Non-neoplastic lesions of appendix

	No.	%
Acute	1458	97.79
Chronic	32	2.15
Granulomatous	01	0.07
Total	1491	100

Table 4: Neoplastic lesions of appendix

Benign	No.	%
Mucinous cystadenoma	02	40
Malignant		
Carcinoid	02	40
Mucinous cystadenoma carcinoma	01	20
Total	05	100

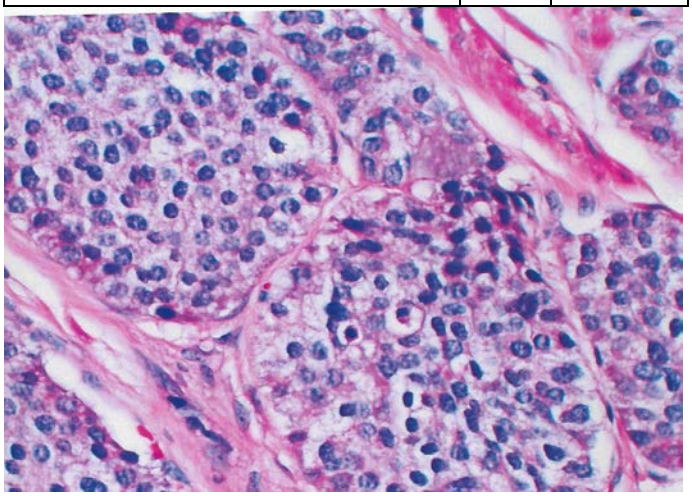

Figure 3: Classical pattern of carcinoid [H and E 40 × 10 X]

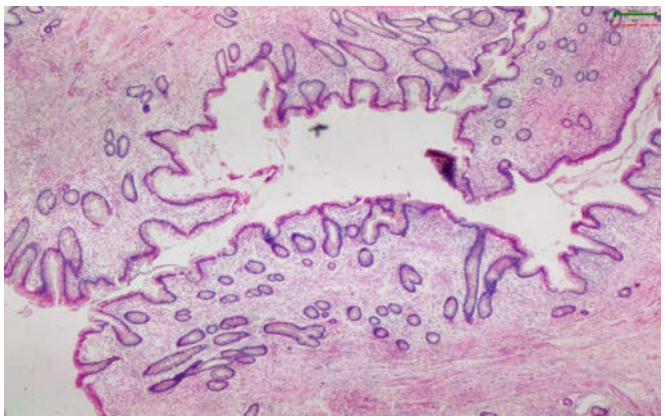

Figure 4: Mucinous cystadenoma appendix[H and E 40 × 10 X]

Discussion

The present study was conducted over a period of 5 years (4 years retrospective and 1 year prospective) in the Postgraduate Department of Pathology, Government Medical College, Jammu. A total of 1686 surgical specimens were received during this period, out of which 1496appendectomy specimens and 190 small intestine specimens. In present study male to female ratio was 2:1 in case of small intestinal lesions., Das C et al. [10] observed the male to female ratio of 2.4:1. Patients in 4^{th} – 5^{th} decade of lifewere mostly affected showing male predominance. Small intestine was observed to be the commonest site for both benign and malignant tumours. In our study the most common site involved was ileum. Inflammatory lesions predominated. Chennakeshaviah GRP et al. [11] in their study on small intestine observed non –neoplastic lesion to be more common than neoplastic lesions. Basnet et al. [12] observed small intestinal tumours comprise 5% of all GI malignancies unlike present study where no malignant lesion was observed in small intestine. In our study most common surgical specimens received is appendix (87.61%). Prasaad PR et al. [13] also observed appendix to be the most common specimen received in their study. Acute

appendicitis 1458 cases (97.79%) was the most common non-neoplastic lesion of appendix followed by chronic appendicitis 32 cases (2.15%) and 1 case (0.07%) of granulomatous lesion were studied. Thakur RY et al. [14] also observed inflammatory lesions to be commonest non-neoplastic lesions (91.0%). Acute appendicitis and chronic appendicitis were the most common inflammatory lesions (99.94%) observed in our study.

Conclusion

There are only a few comprehensive studies of small intestinal lesions. The clinical and radiological findings are non-specific in various diseases and thus histopathological study is very important for confirming the diagnosis. A detailed histopathological study of small intestinal specimens should be done in correlation with clinical and radiological findings for exact diagnosis.

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