

Histopathology of Gastrointestinal Lesions in a Tertiary Care Centre

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Abstract

Gastrointestinal lesions are the major group of specimens received in the surgical pathology department. This includes endoscopic biopsies from gastric and duodenal mucosa, appendicectomies, cholecystectomies and colonoscopy biopsies. This study was a retrospective analysis done between January 2015 and December 2017 which included 838 biopsies, both mucosal and resected specimens. These biopsies were fixed in 10% buffered formalin, routinely processed and paraffin embedded sections were taken and stained with Hematoxylin and Eosin. The stains were interpreted and statistical analysis of the data obtained was done. The most common specimen received was appendix which accounted for 49%, followed by cholecystectomies accounting to 38%, 5.5% biopsies from rectum and anal canal, 3% gastric mucosal biopsies, 3% biopsies from colon, 1% mucosal biopsies from small intestine, 0.5% mucosal biopsies from esophagus. In this study it was observed that appendix was the most common specimen received, followed by gall bladder. The most common tumor of esophagus was squamous cell carcinoma. The most common tumor of stomach was adenocarcinoma. Inflammatory lesions were more common in small intestine. Histopathological analysis of gastrointestinal lesions helps the clinicians for proper follow up and specific treatment. This study gives an overview of the various histopathological specimens received in the pathology department.

Keywords: Gastrointestinal lesions, Juvenile rectal polyp, Adenocarcinoma, Squamous cell carcinoma, Appendix, Carcinoid.

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INTRODUCTION

Variety of lesions can occur in gastrointestinal tract which can be asymptomatic and require endoscopic view. For the endoscopists, evaluating presence or absence of gastritis based on the endoscopic aspect of the gastric mucosa represents a common practice. The specimens include endoscopic biopsies from gastric and duodenal mucosa, cholecystectomies, appendicectomies, colonoscopic biopsies, colectomies etc [1]. The invention of fibre optic endoscopy had a major breakthrough among surgeons. Since then an endoscopy or colonoscopy has become incomplete without biopsy for histopathological examination [2]. Diagnosis based on histopathology is essential in cases of polypoidal lesions, ulcerative lesions and in dubious lesions on endoscopy [3]. The definitive diagnosis of gastrointestinal lesions mainly depends on the histopathological examination and confirmation.

AIM OF THE STUDY

This study aims to know the prevalence of various GIT lesions based on histopathological findings.

MATERIALS AND METHODS

The study period was from January 2015 to December 2017. It was a Retrospective study conducted in the Department of Pathology, Malla Reddy Institute of Medical Sciences, Suraram, Hyderabad, and Telangana state. The materials were collected in the form of biopsy and resected specimens of gastrointestinal tract along with the clinical profile of the patient with supportive investigations. Biopsies from the following gastrointestinal sites are included namely esophagus, stomach, duodenum, small intestine, colon, rectum and anal canal. Endoscopic biopsies from esophagus, stomach, duodenum and colon are included. Resected specimens of appendix, gall bladder, colon and stomach were also included in the study. All the biopsies were fixed in 10% buffered formalin, processed in automatic tissue processor, paraffin embedded sections are taken and stained with Hematoxylin and Eosin and examined under light microscopy. The superficial biopsies, biopsy with artifacts and inadequate material were excluded from the study.

RESULTS

A total of 838 gastrointestinal biopsies were included in the study with male to female ratio of 0.9:1. Gender wise distribution is shown in Figure-1. The mean age of presentation was 32 years. The youngest patient was 2 year male child with juvenile polyp and the oldest patient was 72 female with cholecystitis. The most common specimen received was appendix which

accounted for 410 (49%) biopsies. The next most common specimen received was cholecystectomies accounting to 315 (38%) biopsies. There were 46 (5.5%) biopsies from rectum and anal canal, 28 (3%) biopsies from colon, 24 (3%) gastric mucosal biopsies including one distal gastrectomy specimen, 9 (1%) mucosal biopsies from small intestine, 4(0.5%) esophageal mucosal biopsies.

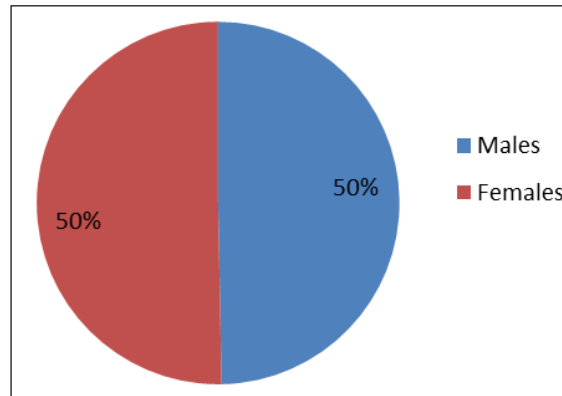


Fig-1: Genderwise Distribution

Of the total appendectomy specimens, the most common lesions were acute appendicitis and recurrent appendicitis. One case showed granulomas

and reported as tuberculous appendicitis. Distribution of appendix lesions shown in Table-1.

Table-1: Histopathological Findings in Biopsies from Appendix

Lesions	No. of cases
Acute appendicitis	232
Recurrent appendicitis	119
Acute on chronic appendicitis	46
Chronic appendicitis	5
Tuberculous appendicitis	1
Gangrenous appendicitis	5
Xanthogranulomatous appendicitis	2
Total	410

Of the total 315 cholecystectomy specimens, chronic calculus cholecystitis is the most common diagnosis made accounting to 247 cases, 34 were reported to be chronic acalculus cholecystitis. Other

rare cases reported were one case each of tubulopapillary adenoma and adenocarcinoma and 3 cases of adenomatous hyperplasia (Table-2).

Table-2: Histopathological Findings in Biopsies from Gall Bladder

Lesions	No. of cases
Chronic calculous cholecystitis	246
Chronic acalculus cholecystitis	34
Acute on chronic cholecystitis	13
Chronic cholecystitis with cholesterosis	06
Cholecystitis glandularis	02
Acute cholecystitis	02
Empyema	04
Tubulopapillary adenoma	02
Adenocarcinoma	01
Adenomatous hyperplasia	03
Xanthogranulomatous cholecystitis	02
Total	315

The most common lesion among rectum and anal canal was fistulous tract, followed by hemorrhoids,

adenocarcinoma. Distribution of the lesions is tabulated in Table-3.

Table-3: Histopathological Findings in Biopsies from Rectum and Anal Canal

Lesions	No. of cases
Fistulous tract	21
Hemorrhoids	10
Anal fissure	03
Rectal ulcer	03
Juvenile polyp	03
Rectal tonsil	01
Adenocarcinoma	05
Total	46

In this study, total lesions were 24 and the most common histopathological entity observed was chronic gastritis and least common was gastric lymphoma. From the esophagus 4 biopsies were received and most common histopathological diagnosis

was well differentiated carcinoma (Table-5). Among the small intestine lesions (total 9 biopsies) 8 cases were Inflammatory lesions out of which 1 specimen showed meckel's diverticulum with ectopic pancreas.

Table-4: Histopathological Findings in Biopsies from Stomach

Lesions	No. of cases
Chronic gastritis	09
Gastric ulcers	05
Intestinal metaplasia	01
Dysplasia	01
Adenocarcinoma	07
Lymphoma	01
Total	24

Table-5: Histopathological Findings in Biopsies from Esophageal Mucosa

Lesions	No. of cases
Well differentiated SCC	2
Moderately differentiated SCC	1
Signet cell adenocarcinoma	1
Total	4

Table-6: Histopathological Findings in Biopsies from Colon

Lesions	No. of cases
Inflammatory lesions	10
Polyps	5
Gangrenous bowel	3
Sigmoid volvulus	2
Ulcerative colitis	1
Carcinoma	7
Carcinoid	1
Total	28

Among 28 biopsies of large intestine, the most common diagnosis made was inflammatory pathology accounting to 10 cases, the other cases were gangrenous bowel, sigmoid volvulus, polypoidal lesions and cases

of adenocarcinoma. Two resected colon specimens was diagnosed with carcinoid tumor and Lymphoma (Table-6).

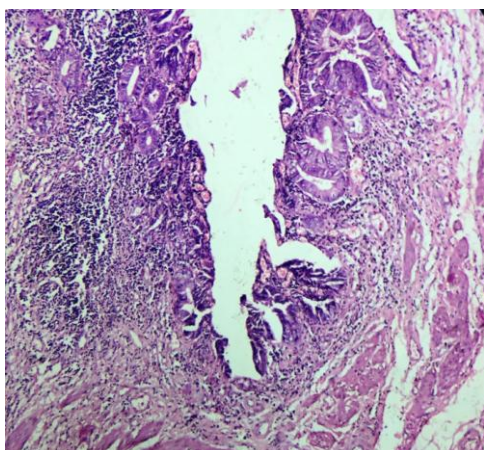


Fig-2: Photomicrograph showing ulcerated mucosa – Acute Appendicitis

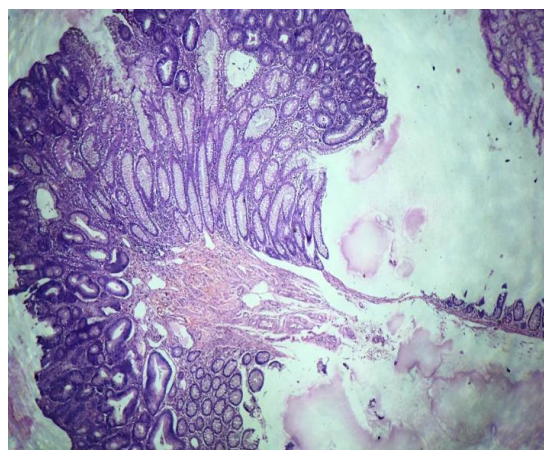


Fig-4: Photomicrograph showing histological features of inflammatory polyp- small intestine

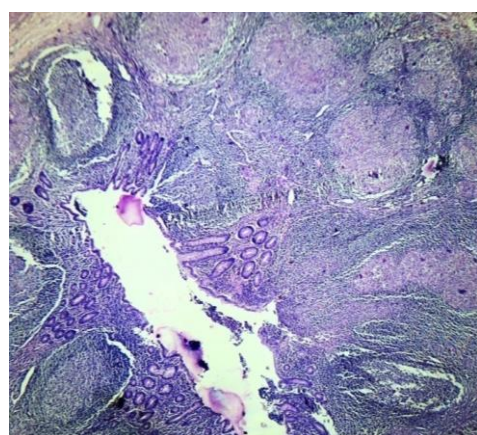


Fig-3: Photomicrograph showing ulcerated mucosa and prominent lymphoid aggregates- Recurrent Appendicitis

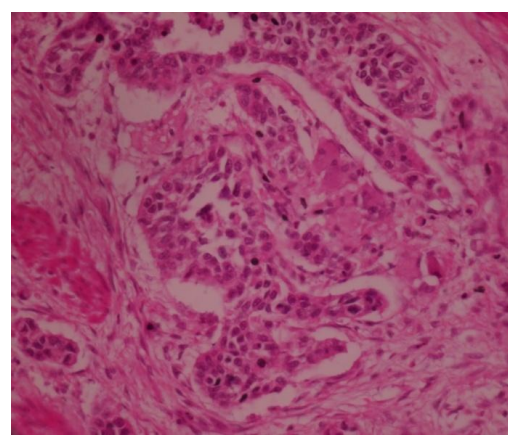


Fig-5: Photomicrograph showing histological features of adenocarcinoma of the stomach

DISCUSSION

This study was a retrospective study conducted in the Department of Pathology, Malla Reddy Institute of Medical sciences, Hyderabad, Telangana state from 2015 to 2017 which included 838 biopsies (both mucosal and resected specimens) out of 6366 total biopsies received during study period.

Of the total 410 appendectomy specimens, 232 cases were reported as acute appendicitis (56.5%). In the Prasaad PR *et al.*, study, out of 76 cases of appendectomy specimens, 62 cases (82%) were reported as acute appendicitis, sulaih ur rehman *et al.*, study also showed acute appendicitis as the most common lesion (60.8%) [4]. One case was reported as granulomatous appendicitis. Vaidehi patel *et al.*, study showed granulomatous lesion of appendix which is similar to our study [5]. 46 cases were reported to be acute on chronic appendicitis (11.3%), 5 cases as chronic appendicitis (1.2%), 119 were reported to be recurrent appendicitis (29%), 5 were reported as chronic appendicitis, 5 were gangrenous appendicitis.

The gall bladder biopsies were the second common cases (316 cases, 38%) among the total gastrointestinal biopsies. Most common lesions of Gall

bladder lesions we found were Chronic calculus cholecystitis 248 cases (78%), followed by 34 cases of chronic acalculous cholecystitis (11%), 13 cases of acute on chronic cholecystitis, 6 cases of chronic cholecystitis showed cholesterosis, 2 cases of cholecystitis glandularis of which one showed gastric heterotopia, the other showed cholesterol polyp, 2 cases each of acute cholecystitis and xanthogranulomatous cholecystitis. Other rare cases reported were two cases of tubulopapillary adenoma and 1 case of adenocarcinoma and 3 cases of adenomatous hyperplasia. Our results were comparable with the Prasaad PR *et al.*, study, among 25 Gall bladder specimens, 60% were chronic calculus cholecystitis, chronic cholecystitis without calculi were 12%, adenomatous hyperplasia in one case and adenomatous polyp in another [4]. Vaidehi *et al.*, study showed Chronic calculus cholecystitis 213 cases (89.87%), Xanthogranulomatous cholecystitis in 2 cases (0.84%), both similar to our study [5].

Of the 4 cases of esophageal mucosa biopsy lesions, 3 were reported as squamous cell carcinoma and one was reported as signet ring cell carcinoma. In the chhanda das at el study, 7 out of 8 cases were squamous cell carcinoma of esophagus and one case of Adenocarcinoma esophagus [6]. Of the 24 gastric

biopsies, 9 were chronic gastritis, 6 cases were gastric ulcers, 7 cases were adenocarcinoma, 1 case each of intestinal metaplasia and dysplasia. Chronic gastritis was the most common diagnosis among the non neoplastic lesions which is comparable to the study conducted by Sherrsha Khandige *et al.*, [7]. 7 gastric malignancies were diagnosed as adenocarcinoma, out of which 4 were well differentiated adenocarcinoma, 2 were signet ring carcinomas and one was moderately differentiated adenocarcinoma. These findings were comparable to study conducted by Rosy Khandelia *et al.*, [8]. one case was diagnosed as gastric lymphoma. Out of 9 cases, 3 were inflammatory lesions of ileitis, 2 cases of ileum were ulcer perforation, 2 were from duodenum, 2 were meckel's diverticulum out of which one showed ectopic pancreatic tissue. In Agarwal N *et al.*, study 98.5% cases were inflammatory lesions compared to our study [9].

Of the 28 biopsies from colon, 11 cases (39%) were of inflammatory lesions, 5(18%) cases of polyps of which 3 were adenomatous polyps, 1 was inflammatory polyp and one case was lipomatous polyp. There were 2 cases of obstructive pathology i.e, sigmoid volvulus, 3 cases of gangrenous bowel, 1 case of ulcerative colitis, 6 cases of adenocarcinoma, out of which 3 were well differentiated carcinoma, 2 were moderately differentiated adenocarcinoma, 1 case was signet ring cell carcinoma, 1 case was diagnosed as carcinoid tumor. In a study conducted by Azhar Qayyum, it is found that tubular adenoma is the most common neoplastic polyp among the colonic polyps [10]. Similarly, in this study also, tubular adenomas accounted for 60% of neoplastic polyps. In the same study, it was observed that non-specific colitis was seen in 25% of the cases. In this study 39% of the biopsies were diagnosed as non-specific colitis. Out of 46 cases from rectum and anal canal, 21 cases were reported to be fistulous tract with nonspecific inflammation, 10 cases were hemorrhoids, 3 cases of anal fissure, 3 cases of juvenile polyp. All juvenile polyps were found in rectum and were comparable to Roth SI *et al.*, and Dajani YF *et al.*, found rectum as the most common site for juvenile polyps [11, 12].

CONCLUSION

A variety of neoplastic, non neoplastic and rare lesions were reported in the present study across a wide range of age and site distribution. Endoscopy and histopathological analysis of gastrointestinal lesions aids the clinicians for early detection, follow up and specific treatment. Histopathological analysis shows that in both upper and lower gastrointestinal tract lesions, endoscopic and colonoscopic correlation are a must for accurate diagnosis. The treatment will be more precise when the disease can be identified at its early stage. This study focuses the role of histopathological identification in early diagnosis of the disease so that rates of survival will be increased.

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