Section: Pathology

Original Research Article

A STUDY OF HISTOPATHOLOGICAL SPECTRUM OF GASTROINTESTINAL AND HEPATOBILLIARY LESIONS IN A TERTIARY CARE CENTRE

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ABSTRACT

Background: Disorders of the gastrointestinal tract (GIT) are major contributors to morbidity and mortality. Histopathological examination is essential for accurate diagnosis and treatment planning. This study aimed to determine the incidence and histopathological spectrum of GIT lesions in a tertiary care setting and to correlate these findings with clinicopathological variables.

Material and Methods: This is a retrospective study conducted on GIT lesions and the histopathological assessment was done at the department of pathology MGM medical college and teaching hospital Aurangabad, from January 2023 to December 2023, The specimens were formalin fixed and embedded in paraffin and sections were taken, stained with H and E and examined.

Results: The present study included 1049 cases. The GI specimens constituted 20.12 % of all surgical pathology specimens. Maximum specimens were obtained from age group 21-40 years. Most common non neoplastic lesions were seen in appendix (appendicitis) and common neoplastic lesions were seen in stomach (adenocarcinoma).

Conclusion: Histopathological analysis of GIT Lesions helps the division for proper follow up and specific treatment. This study gives an overview of the frequency as well as spectrum of the histopathological lesions in GIT.

Keywords: GIT, endoscopy, histopathology, immunohistochemistry.

INTRODUCTION

The disorders of Gastrointestinal tract (GIT) are responsible for a great deal of morbidity and mortality.[1] Given its extensive length and complexity, various pathologies can affect different segments of the gastrointestinal tract. These conditions range from congenital anomalies and inflammatory disorders to neoplastic diseases, including both benign and malignant lesions. The spectrum of potential diseases is broad, with these conditions occurring either individually or in combination across different segments of the tract.[2] Histopathology is regarded as the most sensitive and specific diagnostic method (Gold Standard) for detection. of GIT lesions (especially malignant cases) and plays an important role in the diagnosis and therefore, aids in early management.[3] Hence definitive diagnosis of GI disorders rests on the histopathological confirmation and is one of the basis for planning proper treatment.[4]

The liver is a primary organ for various metabolic activities of the body. It is exposed to various metabolic, toxic, infectious and neoplastic insults.[5] The liver can be affected by a spectrum of primary and secondary diseases. Common primary liver diseases include hepatitis and hepatocellular carcinoma (HCC). Secondary hepatic involvement may result from extrahepatic infections, or metastatic spread from various primary malignancies.[6] Likewise, gall bladder diseases are not uncommon and are major reason for morbidity and mortality in our country. The patients remain asymptomatic for many years which partly attributes to incidental findings of many lesions on histopathology including malignancy.[7,8]

The aim of the present study was to assess the histopathological spectrum of gastrointestinal lesions in a tertiary care centre. The objectives included determining the incidence of various lesions in the GIT and correlating the clinico-pathological variables such as age, gender, anatomic location, and histological type of the lesions, based on all biopsies and resected specimens received.

MATERIALS AND METHODS

This retrospective study was conducted on gastrointestinal and hepatobiliary lesions, with histopathological evaluation carried out in the Department of Pathology, MGM Medical College and Hospital, Chhatrapati Sambhajinagar, over one year from January 2023 to December 2023. The specimens were formalin-fixed and embedded in paraffin and sections were taken, stained with H and E, and examined.[9] Immunohistochemistry was done in cases where in definitive diagnosis could not be given.

Inclusion Criteria: All histopathological specimens, including biopsies and resected specimens from the gastrointestinal tract, received in MGM Medical College and Hospital, Chhatrapati Sambhajinagar, Pathology department, were included.

Exclusion Criteria: Nil

RESULTS

This is a retrospective study conducted on GIT lesions and the histopathological assessment done at the Department of Pathology, MGM Medical College and Hospital, Chhatrapati Sambhaji Nagar, from January 2023 to December 2023. Of the total 1049 cases studied maximum non-malignant cases were from appendix, followed by gall bladder. Maximum malignant lesions were reported in the stomach, followed by the esophagus. 52.43% were male and about 47.5 % were female. Male:female ratio was 1.1:1, thus suggesting exposure to risk factors in males is higher as compared to females.

In our study maximum cases were from the age group 21-30 years, accounting for 17 % of the study participants. There was a wide age range, ranging from 13 months to 90 years of age.

Biopsies were the most commonly received samples as compared to resection specimens.

Distribution of Esophageal lesions: Among esophageal specimens and biopsies, 46 cases were benign and 47 were malignant, including Neuroendocrine tumors, Adenocarcinoma and Squamous cell carcinoma. As all esophageal biopsies were not specified as upper/middle/lower third of the esophagus, thus we couldn't give exact distribution according to the location of the same.

Distribution of Gastric lesions: Among gastric lesions and biopsies, 43 cases were benign and 31 were malignant. Amongst benign lesions most common were gastritis of various etiologies. The malignancies included adenocarcinoma as the most common diagnosis, followed by squamous cell carcinoma.

Distribution of Small Intestinal Lesions: 41 cases were from the small intestine, with 33 cases being benign, including malabsorption syndrome, duodenitis, ileocaecal tuberculosis, and polyps. Adenocarcinoma was the most common malignancy reported, accounting for 8 cases of the total 41 cases and a single case of Inflammatory myofibroblastic tumor.

Distribution of Large Intestinal Lesions: Among 88 cases from the large intestine, most cases were benign, with the most common lesions reported as Haemorrhoids. Inflammatory bowel disease included 16 cases of ulcerative colitis, followed by 12 cases of Crohn's disease. 22 cases were of adenocarcinoma of large intestinal lesions.

Table 1: Gender wise distribution of lesions

Gender	Non neoplastic	Neoplastic	Total
Male	490	60	550
Female	412	87	499
Total	902	147	1049

A total of 1049 cases were diagnosed with gastrointestinal lesions on biopsies and resected specimens. Table 1 shows the distribution of all 1049 cases according to gender, divided into non-neoplastic and neoplastic lesions. Out of the total 1049 cases, 550 were males and 499 were females. Among 550 males, 490 were diagnosed with non-neoplastic lesions and 60 were neoplastic. Among 499 females, 412 were diagnosed with non-neoplastic lesions and 87 were diagnosed with neoplastic lesions

Table 2: Histopathological findings in the Esophagus

Lesions	No of cases	Percentage (%)
Reflux esophagitis	34	36.55
Candida esophagitis	6	6.45
Barrett's esophagitis	6	6.45
Neuroendocrine tumor	1	1.07
Adenocarcinoma	28	30.10
SCC	18	19.35
Total	93	100

Table 2 shows the distribution among 93 cases from the esophagus, 46 were non-malignant lesions and 47 were malignant lesions, which included the maximum cases of Adenocarcinoma of the esophagus, accounting for 28 cases, 18 cases of SCC and 1 case of Neuroendocrine tumor.

Table 3: Histopathological findings in the Stomach

Lesion	No of cases	Percentage (%)
Gastritis (H.Pylori)	35	47
Fundic gland polyp	6	8.10
GIST	2	2.70
Adenocarcinoma	30	40.54
SCC	1	1.35
Total	74	100

Table 3 shows maximum cases reported were of gastritis in non-neoplastic cases. The most common malignancy reported was adenocarcinoma of the stomach in 30 patients.

Table 4: Histopathological findings in the Small intestine

Lesion	No of cases	Percentage (%)
Malabsorption syndrome (Celiac)	1	2.43
Duodenitis	6	14.63
Ileocecal TB	1	2.43
Juvenile polyp	2	4.87
Ischemic changes	7	17.07
Hyperplastic polyp	8	19.51
Tubulovillous adenoma	5	12.19
GIST	2	4.87
Inflammatory myofibroblastic tumor	1	2.43
Adenocarcinoma	8	19.51
Total	41	100

Table 4 shows a wide range of non-neoplastic and neoplastic lesions in the small intestine. Most common non-neoplastic lesions included various infections, polyps and malabsorption syndrome. The most common malignancy reported was adenocarcinoma, with 8 cases among all the lesions from the small intestine.

Table 5: Histopathological findings in the Appendix

Lesion	No of cases	Percentage (%)
Recurrent Appendicitis	215	50.35
Acute appendicitis	205	48
LAMN	4	0.93
Adenocarcinoma	3	0.70
Total	427	100

Table 5 shows lesions in the appendix. Maximum cases were of appendicitis, comprising 420 cases (98.36% of lesions of the appendix), followed by other lesions, including a few non-neoplastic, along with 3 cases of adenocarcinoma and 4 cases of LAMN (Low-grade appendiceal mucinous neoplasm).

Table 6: Histopathological findings in the Large Intestine

Lesion	No of cases	Percentage (%)
Non-specific inflammatory lesions	2	2.27
Haemorrhoids	16	18.18
Pilonidal sinus	1	1.13
Fibroepithelial polyp	2	2.27
Hirschsprung's disease	1	1.13
Juvenile Rectal Polyp	2	2.27
Ischemic changes	10	11.36
Ulcerative colitis	16	18.18
Crohn's disease	12	13.63
Tubular adenoma	4	4.54
Adenocarcinoma	22	25
Total	88	100

Table 6 reveals cases of the large intestine with maximum non-neoplastic cases comprised of inflammatory bowel disease, followed by 22 cases, i.e 22 cases of adenocarcinoma. There were 16 cases of haemorrhoids which were maximum amongst all the lesions from rectum and anal canal. Again, adenocarcinoma was the most common malignancy reported as seen in the esophagus and stomach.

Table 7: Histopathological findings in the Liver

Lesion	No of cases	Percentage (%)
Glycogen storage disease	2	6.66
Autoimmune hepatitis	2	6.66
Biliary atresia	3	10
Hydatid cyst	3	10
Pseudocyst of Liver	6	20
Chronic hepatitis	1	3.33
Liver cirrhosis	2	6.66
HCC	3	10
Cholangiocarcinoma	4	13.33
Metastasis of adenocarcinoma in the liver	4	13.33
Total	30	100

Table 7 shows the results from lesions of the liver with a wide variety of diagnoses, comprising both pre-malignant and malignant lesions. In liver maximum cases were non-neoplastic, with a total of 7 cases of primary malignant neoplasm and 4 cases of metastatic tumors.

Table 8: Histopathological findings in the Gallbladder

Lesions	No of lesions	Percentage (%)
Chronic cholecystitis	270	91.1
Xanthogranulomatous cholecystitis	20	6.75
Adenomatous hyperplasia of the gall bladder	3	1.01
Intraductal papillary neoplasm GB	1	0.33
Metastatic deposits of Adenocarcinoma in GB	1	0.33
Leiomyosarcoma GB	1	0.33
Total	296	100

Table 8 shows the lesions from the gall bladder with 290 cases of cholecystitis and only 2 cases of primary carcinomas and 1 case of metastatic deposits of adenocarcinoma in the gallbladder.

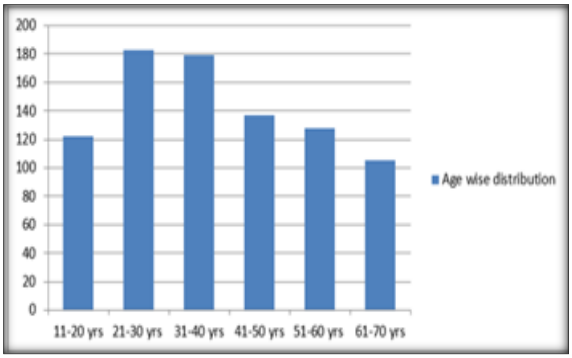
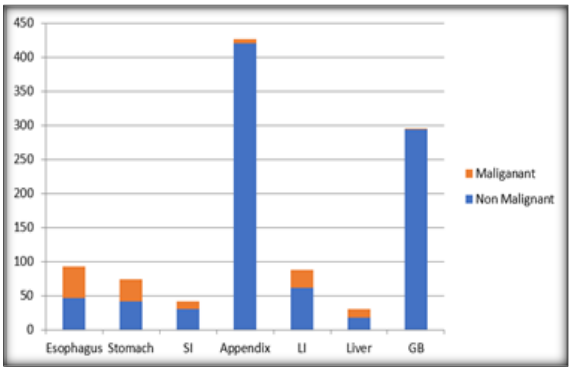


Figure 1: Distribution of lesions according to age group (in years) reveals maximum cases from 21-30 years of age group



SI- Small Intestine, LI- Large Intestine, GB- gall bladder

Figure 2: Distribution of lesions according to location

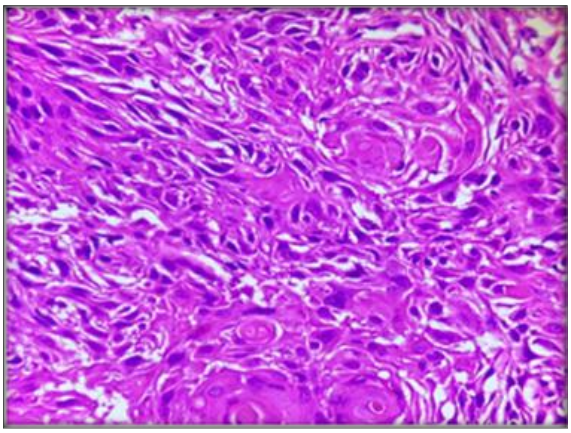


Figure 3: Moderately differentiated SCC of esophagus: H&E: (40x)

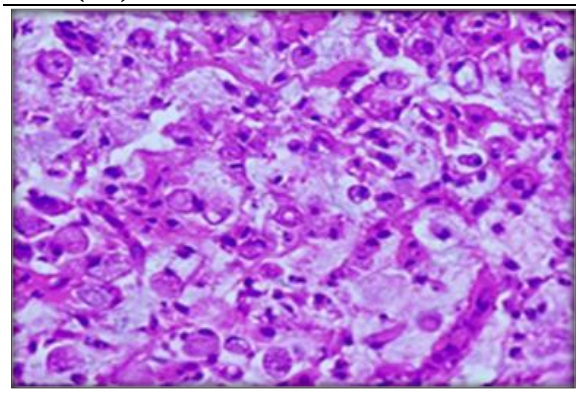


Figure 4: Signet ring cell Adenocarcinoma of stomach: H&E: (40x)

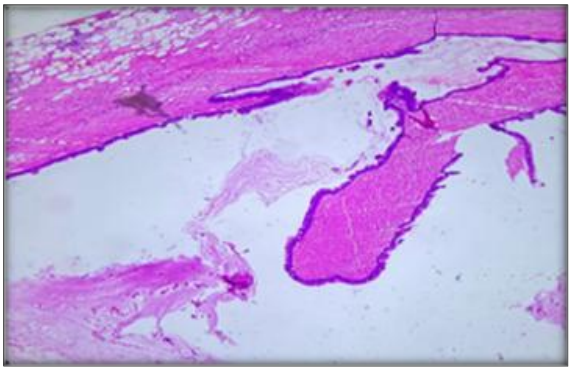


Figure 5: LAMN Appendix: H&E: (40x)

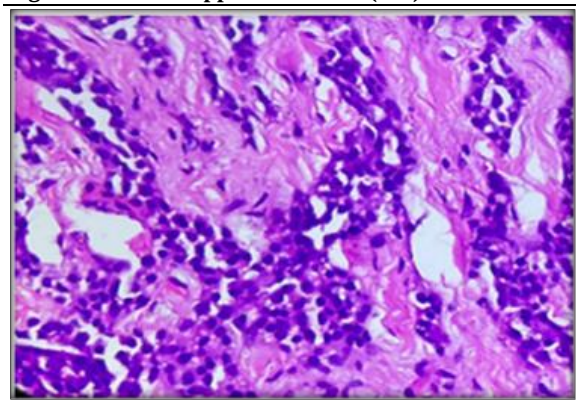


Figure 6: Neuroendocrine tumor of Appendix: H&E: (40x)

DISCUSSION

In our study maximum lesions were non-malignant and included biopsies as well as resection specimens. In the present study maximum cases were obtained from the age group 21-30 years and was the similar finding in the study done by Gupta N *et al.* [1] Overall middle-aged individuals most commonly underwent biopsies as observed in our study which was in contrast to Satyanarayansomani N *et al.*,[9] Memon F *et al.* [10] and Ganga H *et al.* [12] where they observed maximum biopsies obtained from older individuals. But this age range was overlapping with that of Mishra R *et al.* [11] and Prasaad PR *et al.* [13]

Male: Female ratio in the present study was 1.1:1, which was close to the ratio observed in the study done by Mittal T *et al.*,[8] for lesions in GIT. Male preponderance was observed in various other studies like those by Krishnappa R *et al.*,[4] Satyanarayansomani N *et al.*,[9] and Hussain SI *et al.* [14]. This was observed in various studies and reflected the higher exposure of men to different factors, which exposed men towards non-malignant as well as malignant lesions which included diet, tobacco consumption, smoking, etc. [4,8,15]

Maximum malignant lesions were reported in stomach biopsies, followed by esophageal biopsies, which was also observed in the study of Gupta N *et al.* [1]

In our present study, adenocarcinoma was the most common malignancy observed in the GIT lesions and a similar observation was made by Krishnappa R *et al.*, [4] Mittal T *et al.* [8] and Satyanarayansomani N *et al.* [9]

CONCLUSION

In our study, biopsies were more common than resection specimens, amongst which the stomach was the most common site, followed by the esophagus. The most common malignancy reported was Adenocarcinoma in the stomach, followed by that in the esophagus. Our study provided an overview of the spectrum of histopathological specimens received in the pathology department. Proper follow-up and specific treatment can be achieved by histopathological analysis following our study.

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