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Original Research Article

Spectrum of intestinal lesion: A clinicopathological study in a tertiary care centre

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ABSTRACT

Context: Intestine has wide spectrum of diseases comprising neoplastic and non-neoplastic lesions. Inflammatory bowel diseases are showing increasing trend and intestinal neoplasms are the most frequently observed and leading cause of death in India.

Objectives: This study aims to find the occurrence of various intestinal lesions, classify them as neoplastic and non-neoplastic and to correlate the histopathological findings with clinical profile of patient in tertiary care hospital of north India.

Materials and Methods: 1129 biopsies and resection specimens of intestinal lesions were examined over a period of two years. Sections were fixed, paraffin embedded and stained by H&E. Immunohistochemistry was applied wherever required.

Results: Nearly two third patients were males in their second decade who presented with abdominal pain as the most common complaint and majority were diagnosed with non-neoplastic diseases. Among non-neoplastic lesions non-specific inflammation was predominant in small intestine (47.04% cases) and appendicitis (55.0%) in large intestine. Adenocarcinoma was predominant in both small and large intestine with 80.77% and79.45% of neoplastic cases respectively.

Conclusion: This work gives a panoramic view of different intestinal pathologies and emphasises on the need of planning accurate diagnostic and screening strategies along with effective treatment plans both for neoplastic as well as non-neoplastic diseases.

1. Introduction

Intestinal tract is the site for broad array of neoplastic and non-neoplastic diseases which at time can lead to serious complications. It is a site for infections, vascular disorders, ulcers, various inflammatory conditions and neoplasms.[1] According to Global Cancer Observatory 2020, new cases of colorectal carcinoma for both sexes and all ages are 1931590. It has an incidence of 49.6%, mortality of 59.4% and 5-years prevalence of 47.2% in Asia.[2] Inflammatory bowel disease was once considered to be a western disease but recently cases in India are showing increasing trend.[2] Most intestinal tumors can be differentiated by their unique immunohistochemistry profile which becomes important when dealing with small biopsies or metastasis to distant organs.[3] In India exact data that correlates Colonoscopic findings with HPE findings is not sufficient.[4]

This study aims to find occurrence of various intestinal lesions, classify them into neoplastic and non-neoplastic and to correlate histopathological findings with clinical profile of patient. Our study also aims to find yield of colonoscopy in different intestinal lesions.

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2. Materials and Methods

2.1. Tissue specimens

An institutional based observational study was conducted in a tertiary care hospital of North India in department of pathology in collaboration with department of surgery, medicine and paediatrics, Jawaharlal Nehru Medical College and Hospital from 2018-2020. Work was initiated after obtaining ethical clearance from institutional ethical committee and informed consent from study population. Relevant clinical details were noted as required for diagnostic support. Fresh biopsy tissue samples and resection specimens used for histopathological examination.

3. Results

Total number of cases in study were 1129 out of which 65.5% were males and 34.5% were females. Most common age group affected was 11-20yearscomprising 28.7% cases while the least common affected was >70 years comprising 1.7% cases. Non neoplastic lesions contributed to 54.4% cases whereas 45.6% cases were neoplastic.

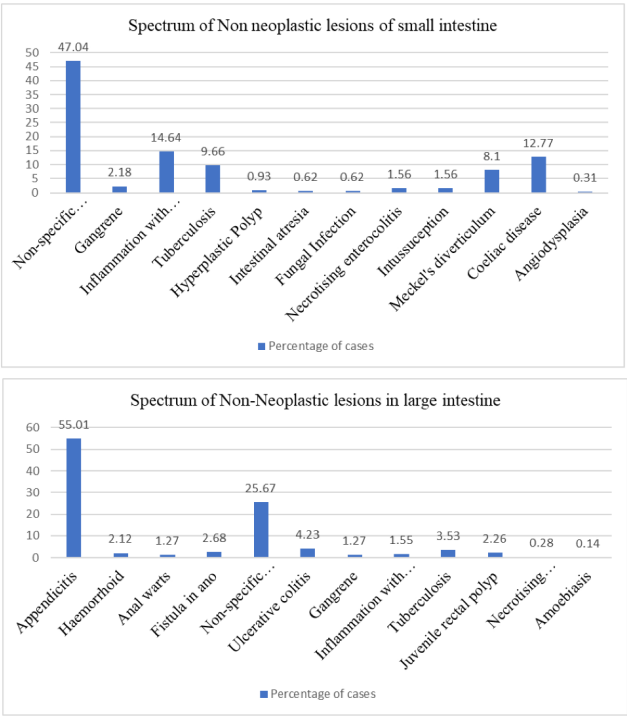

Figure 1: Spectrum of non-neoplastic lesions in small and large intestine.

Pain abdomen was the most common symptom reported in 82.73% cases followed by bleeding per rectum while diarrhoea was the least common complaint (Table 1)

Maximum number of cases were found in small intestine followed by large intestine in which non-neoplastic lesions outnumbered neoplastic lesions. Appendix alone

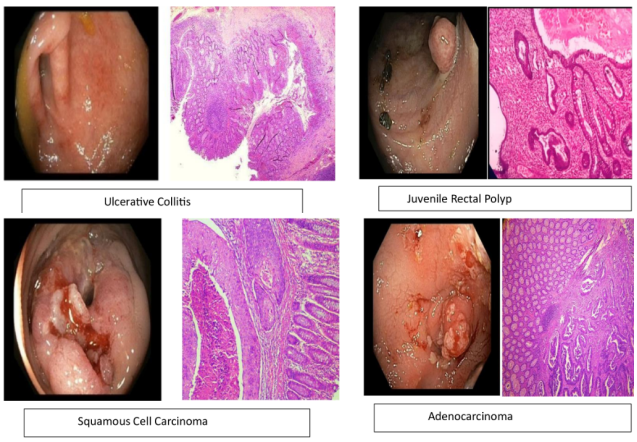

Figure 2: Lesions with their colonoscopic findings

contributed 34.81% cases in large intestine due to large number of acute appendicitis (Table 2).

It was observed that among non-neoplastic lesions of small intestine non-specific inflammation remained predominant with nearly 47.04% of all the spectrum of cases followed by inflammation with perforation contributing to 14.6% of the cases, coeliac disease with 12.7% of the cases and tuberculosis with 9.6% of the cases. The least common spectrum observed was angiodysplasia constituting 0.3% of cases. (Figure 1)

Among large intestine appendicitis was most common with 55.0% of all cases followed by non-specific inflammation with 25.6% cases. Ulcerative colitis was third most commonly observed lesion with 4.2% cases and tuberculosis constituted 3.5% cases. (Figure 2)

Total number of neoplastic cases were 99 out of which 73 cases affected large intestine while 26 cases were of small intestine. (Table 3)

Among both large and small intestine most common neoplastic lesion was adenocarcinoma followed by squamous cell carcinoma while only 1 case of malignant melanoma was found in large intestine (Table 4)

Histopathological and endoscopic finding of colorectal malignancy was correlated in 67 patients while 2 patients showed non-specific inflammation on HPE which showed growth on colonoscopy. Ulcerative colitis was correlated in 26 cases while 13 cases showed non-specific inflammation (Table 5)

4. Discussion

Most common affected age group by non-neoplastic lesions in our study was 11-20 years making 28.69% cases. The reason for this could be large number of acute appendicitis cases which is diagnosed mostly in teenage group.[5] In case of neoplastic lesions 41-50 years was the most commonly affected age group. Earlier age of presentation (4^{th} decade) may be attributed to role of

Table 1: Distribution of intestinal lesions according to symptoms

Symptoms	Number of cases	Percentage
Bleeding per rectum	71	6.29
Constipation	31	2.75
Pain abdomen	**934**	**82.73**
Weakness	19	1.68
Diarrhoea	13	1.15
Mass protruding from anus	43	3.81
Mass per abdomen	18	1.59
Total	1129	100

Table 2: Distribution of intestinal lesions according to type and site of lesions

Site	Non-Neoplastic	Neoplastic	Total
Small intestine	321	26	347
Large intestine	709	73	782
Total	1030	99	1129

Table 3: Distribution of neoplastic cases according to site

Site	Number of Cases	Percentage
Small Intestine	26	26.3
Colorectum	57	57.6
Anal Canal	14	14.1
Appendix	2	2.0
Total	99	100

Table 4: Distribution of neoplastic cases according to histopathology

Type	No of Cases in Small Intestine	No. of cases in Large Intestine	Total
Adenocarcinoma	**21**	**58**	**79**
GIST	1	3	4
Squamous cell carcinoma	2	7	9
Neuroendocrine Carcinoma	1	2	3
Lymphoma	1	2	3
Malignant Melanoma	0	1	1

Table 5: Correlation of colonoscopic findings with histopathological findings

Colonoscopic Findings	Histopathological Findings					
	Non-specific Inflammation	Ulcerative Colitis	Rectal Polyp	Colorectal Adenocarcinoma	SCC Anorectum	Total
Ulcerated Bleeding Mucosa	22	3	0	0	0	25
Anal Fissure	5	0	0	0	0	5
Fistula in Ano	0	0	0	0	0	0
Hemorrhoid	4	1	0	0	0	5
Rectal Polyp	0	0	11	0	0	11
Proctitis/Ulcerative Colitis	13	26	0	0	0	39
Ulcerative growth/? Colorectal Cancer	2	0	0	63	4	69
Non-Specific	7	0	0	0	0	7
Total	53	30	11	63	4	161

dietary, environmental and genetic factors. Krishnamurthy et al, in a similar study stated that most common affected group was 4 to 6 decades.[6] Pain abdomen followed by bleeding per rectum were the most common clinical symptoms in our study owing to large number of acute appendicitis cases and neoplastic cases mostly in colorectal region. Sulegaon et al, in a clinicopathological study of large intestinal lesions stated that bleeding per rectum was the most common symptom followed by constipation and pain abdomen.[1] In our study 151 patients also had colonoscopic evaluation and most common complaint of these patients was bleeding per rectum. This can be attributed to various lesions like haemorrhoids, IBD and malignancy. Wallace et al and Dakubo et al also had same results on patient undergoing endoscopy with bleeding per rectum as the most common symptom observed.[7,8] Highest percentage of non-neoplastic lesions were observed in appendix followed by small intestine while the highest number of neoplastic lesions were observed in large intestine in our study. This finding can be attributed to the fact that acute appendicectomy is the most frequently performed surgery worldwide.[9,10]A possible reason for high numbers of neoplastic lesion in large intestine as compared to small intestine can be attributed to fact that small intestine is a rare site of intestinal malignancies comprising less than 5% of gastrointestinal malignancies.[11] There were a considerable number of coeliac disease cases (41) in our study inferring the increasing prevalence of the disease in area. Tuberculosis of intestine was seen in 56 patients explained by high burden of tuberculosis in India. Majority of small intestinal neoplasm in our study was adenocarcinomas (80.77%) followed by squamous cell carcinoma (7.96%). Similar trend was found in large intestine with 79.45% adenocarcinomas. Maximum number of cases were moderately differentiated adenocarcinomas followed by well differentiated adenocarcinomas and least number of poorly differentiated. Valan et al in a study on colorectal carcinoma found that moderately differentiated cases were maximum in number.[12] Colorectal carcinoma was the most common malignancy observed. Colorectal carcinoma accounts for 10% new cancer cases and 8.5% cancer deaths worldwide.[13]Colorectal carcinoma can be sporadic, inherited and familial and caused by mutations in target oncogenes, tumour suppressor genes and genes related to DNA repair mechanisms.[14]161 patients who underwent colonoscopy and whose biopsy was sent for histopathological examination most common finding was colorectal carcinoma which was correlated in 63 cases. Most cases of colorectal malignancy showed ulceroproliferative growth on colonoscopy. Type of growth on endoscopy can affect the prognosis as patients with exophytic growth has more median survival as compared to patients with annular, scirrhous and ulcerative growth so it is of paramount importance to report type of growth on endoscopy.[15]

5. Conclusions

Total 1129 cases were included in the study and colonoscopic and histopathological correlation was done in 161 cases but only 63 cases showed similar findings on histopathology as was reported on colonoscopy. Nearly two third cases were males in their second decade who presented with abdominal pain as the most common complaint and most of them were diagnosed with non-neoplastic diseases. This work on intestinal lesions gives a panoramic view of different intestinal pathologies when seen with their clinical and Colonoscopic profile. In country with limited resources there is remarkable need of more such studies for planning accurate diagnostic and screening strategies along with effective treatment plans.

6. Source of Funding

None.

7. Conflict of Interest

None.

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