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Spectrum of Non-Neoplastic Lesions of the Large Intestine- A Two-Year Study at a Tertiary Care Centre.

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KEYWORDS

Non-neoplastic polyps, recurrent and acute appendicitis, colonoscopy.

ABSTRACT:

Background:

It is challenging to diagnose intestinal lesions using clinical examination and radiographic examinations due to the great morphologic variety. The goal of our research is to thoroughly examine and analyze the many non-neoplastic lesions of the large intestine using histopathology.

Materials and methods:

It's a retrospective study, conducted for 2-years duration (May 2022- May 2024). It was conducted at MGM Medical College, Chhatrapati Sambhaji Nagar (Aurangabad). A total of 557 samples were examined in the study. Histopathologic findings, clinical features, and colonoscopic findings were analysed.

Results:

A total of 557 patients were recruited for the study. Among these, 47.4% were males and 52.6% were females. Site-wise distribution showed maximum number of cases involved the appendix, followed by the colon and rectum. On further evaluation with colonoscopy, the gross features showed majority with apthous ulcers and wall thickening. In our study, abdominal pain was the most common presenting complaint, followed by loose stools and bleeding per rectum. The histopathological evaluation showed that majority had recurrent appendicitis and acute appendicitis.

Conclusion:

In summary, intestinal lesions exhibit morphological variety while also exhibiting a notable commonality in clinical presentations. The significance of histological analysis in the treatment of colonic lesions is emphasized by our work.

1. Introduction

Numerous neoplastic and non-neoplastic disorders can occur in the large intestine and anal canal, and occasionally they can cause major difficulties. They may be the location of neoplasms, ulcers, vascular diseases, infections, and other inflammatory illnesses [1]. One of the main causes of morbidity and death is neoplasms. About 9% of all malignancies are colorectal cancers, making them the fourth most common disease globally [2]. The most frequent cancers that develop in the colorectal area are adenocarcinomas; other types include melanoma, carcinoid, and anal zone carcinoma. The types of non neoplastic polyps include hyperplastic, hamartomatous, juvenile, Peutz-Jegher's, inflammatory, and lymphoid polyps. As premalignant disorders, inflammatory bowel diseases such as Crohn's disease and ulcerative colitis must be diagnosed early to prevent additional complications and to ensure appropriate treatment. Other benign disorders include angiomas, neuromas, lipomas, and adenomas.

Patients may present with septicemia, perforation, peritonitis, and electrolyte imbalance can be brought on

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by Hirschsprung disease, enterocolitis, and other ulcers, such as amoebic colitis and inflammatory bowel disease (IBD).

When combined with clinical information, both macroscopic and microscopic appearances aid in a conclusive identification of the lesion, facilitating early treatment and improved patient outcomes.

The goal of the current study was to examine major intestinal lesions, correlate them with clinical data, and compare the results with those of other investigations. In daily practice, intestinal lesions are quite prevalent. Non-specific symptoms such as abdominal discomfort, gastrointestinal bleeding, anemia, nausea and vomiting, weight loss, diarrhea, and intestinal obstruction can be seen in patients with intestinal lesions. It is challenging to diagnose intestinal lesions using clinical examination and radiographic examinations due to the great morphologic variety and overlapping of symptoms. Hence our study was undertaken to thoroughly examine and analyze the many non-neoplastic lesions of the large intestine using histopathology.

2. Materials and Methods

This was a retrospective study, conducted for 2-years duration (May 2022- May 2024) conducted at MGM Medical College, Chhatrapati SambhajiNagar (Aurangabad). A total of 557 samples were examined in the study. Histopathologic findings, clinical features, and colonoscopic findings were analysed. Non-neoplastic lesions from all resected specimens and colonoscopic biopsies were studied, of patients of all ages and both sexes were included. Neoplastic lesions were excluded from the study.

Medical case records were used to gather information about the patients, including their age, sex, primary complaints, investigations, and clinical diagnoses. Slides from histopathology were obtained and examined.

3. Results

A total of 557 patients were recruited for the study. Among these, 47.4% were males and 52.6% were females. The age-wise distribution of study participants is shown in Fig. 1.

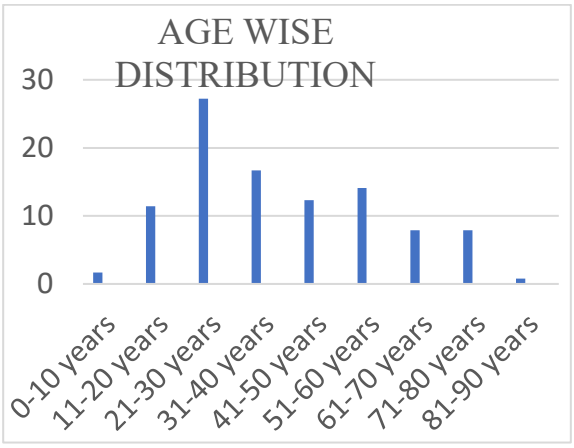

Figure 1- Age-wise distribution of the study participants.

Site-wise distribution showed maximum number of cases involved the appendix, followed by the colon and rectum. It is shown in Table 1.

Table 1- Site-wise distribution

SITE WISE DISTRIBUTION	
FEATURE	**NUMBER OF CASES**
Appendix	415
Colon (Not Otherwise Specified)	48
Rectum	41
Caecum	8
Terminal Ileum	8
Rectosigmoid	7
Sigmoid Colon	6
Ileocaecal Valve	7
Descending Colon	6
Ascending Colon	3
Sigmoid Colon	2
Transverse Colon	1
Multiple Sites	5

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On further evaluation with colonoscopy, the gross features showed majority had apthous ulcers and wall thickening. It is shown in Table 2.

Table 2- Gross features on colonoscopy

COLONOSCOPY/ GROSS FEATURES	
FEATURE	**NUMBER OF CASES**
Aphthous ulcer	74
Thickening Of the Wall	23
Loss of Vascularity	14
Colitis	9
Stricture	6
Mucopus	3
Ulceration	8
Pseudopolyps	7
Perforation	4
Erythema	4
Blood Clots	3

In our study, abdominal pain was the most common presenting complaint, followed by loose stools and bleeding per rectum. The presenting complaints are shown in Table 3.

Table 3- Presenting complaints of the study population

CLINICAL FEATURES	
FEATURES	**NUMBER OF CASES**
Pain in the abdomen	443
Loose stools (chronic diarrhoea)	36
Bleeding per rectum	33
Bloody loose stools	14
Constipation	2
Malena	1

The histopathological evaluation showed majority had recurrent appendicitis and acute appendicitis. It is shown in Table 4.

Table 4- Histopathological diagnosis

Histopathological Diagnosis (n=575)	
DIAGNOSIS	**NUMBER OF CASES**
Recurrent appendicitis	210
Acute appendicitis	201
Ulcerative colitis	34
Chronic non-specific colitis	28
Hemorrhoids	25
Infective colitis	17
Infective tuberculosis	4
Drug-Induced colitis (post-ATT)	3
Other infections	10
Inflammatory bowel disease (indeterminate colitis)	10
Solitary rectal ulcer syndrome	5
Crohn's disease	5
Microscopic colitis	5
Parasitic infestation (Enterobius, Entamoeba, and Strongyloides species)	4
Juvenile polyps	4
Melanosis coli	3
Hamartomatous polyps	3
Gangrenous bowel	3
Juvenile rectal polyp	3
Intussusception	3
Hirschsprung disease	2

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4. Discussion:

The most frequent lesion among the 557 non-neoplastic large intestine lesions was recurrent appendicitis (210 cases), which was followed by acute appendicitis (201 cases). Infectious colitis was present in 17 cases, chronic nonspecific colitis was present in 28 cases, and ulcerative colitis was present in 34 cases. Intestinal tuberculosis (TB) (4 instances) and IBD (10 cases) were among the other lesions.

Masgal M. et al. investigated 14 non-neoplastic large intestine lesions, including Hirschsprung disease (1 case), juvenile polyps (2 cases), diverticulitis (1 case), and chronic nonspecific colitis (10 cases)[3], similar to the findings of our study. In a study of 46 cases with non-neoplastic colon lesions, Manthini et al. found that the most prevalent condition was chronic nonspecific colitis (25 cases), which was followed by ischemic colitis (10 cases), inflammatory bowel disease (6 cases), and TB (5 cases), which was also similar to our study.[4]

Sulegaon et al. examined 38 nonneoplastic lesions, three of which were Hirschsprung's disease (HD) instances. These included a 5-year-old girl, an 11-year-old boy, and a 2-day-old neonate. [5]. Rescorla et al. examined 260 Hirschsprung's disease (HD)patients, 213 of whom were males (82%) and 47 of whom were females (18%). 64 patients (25%) were older than a year, 90 patients (35%) were between one month and a year, and 106 patients (41%) were younger than 30 days. [6]. Additionally, Martin et al. reported a 13-year-old HD diagnosis. [7] Lawal et al. also documented a 12-year-old boy's delayed HD diagnosis. [8] In our investigation of late-presenting patients, Hirschsprung disease was observed in just two instances, similar to Sulegaon et al.

Perforation was more prevalent in males (9 instances) than females (4 cases), and it was more common during the fourth decade, according to research by Anvikar et al. Two instances had an ischemic etiology, one case had amoebic colitis with perforation, and the bulk of cases (10 cases) had no known explanation. With 7 cases (53.8%), the sigmoid colon was the most frequently impacted location, followed by the caecum with 4 cases (30.8%)[9]. 35 instances of major intestinal perforation were examined by Singla K et al. The age range of participants ranged from 6 to 80 years old, with a male to female ratio of 2.8 to 1. The caecum was the most often affected location, followed by the descending and sigmoid colon. The most frequent cause was amoebiasis (13 cases, 37.14%), which was followed by TB (5, 14.28%), adenocarcinoma, idiopathic gangrene, volvulus, and nonspecific ulcer (12 cases, 34.28%). [10] Four cases of colon perforation with nonspecific inflammation and one case of TB were identified in the investigation by Nanavati M et al. [11]. Perforation was seen in four cases in our study.

In our study, we had 34 cases of ulcerative colitis, 28 cases of chronic non-specific colitis, 17 cases of infective colitis, and 3 cases of drug-induced colitis.

Out of 38 patients examined, Sulegoan et al. discovered 12 cases of ischemic colitis. The subjects ranged in age from 25 to 75 years, with a M: F ratio of 7:5.[5] It is possible for ischemia to affect any part of the colon. Nonetheless, the region of the splenic flexure and rectosigmoid junction is the frequent location of ischemic lesions because it is the area of greatest vulnerability, which is the watershed area between the superior and inferior mesentery arteries. This finding was concurrent to our study.

In their study of 254 instances of ischemic colitis, Kontogianni A et al. divided the cases into two categories: gangrenous (40 cases, or 16%) and nongangrenous (214 cases, or 84%). There were 87 male cases and 127 female patients of the non-gangrenous type. The patients' ages ranged from 22 to 96 years, with 19 out of 214 (8.8%) being under 50[12]. There were 23 males and 17 female patients of ischemic colitis of gangrenous type. All the patients were older than 50 years of age, and their ages ranged from 57 to 89 years. In instances of the gangrenous variety, the large bowel wall was necrotic. The symptoms of nongangrenous type ischemic colitis were moderate acute inflammation, edema, hyperemia, and mucosal atrophy. Most often, medications and mucosal damage were the disease's etiological contributors. In our study, most of the cases of colitis were non gangrenous and were seen with wall thickening and mucopus.

Four patients in our research who complained of stomach discomfort had TB identified. Over five years, 110 cases of gastrointestinal TB were examined by Tripathi PB et al. The most frequent clinical manifestations were fever, weight loss, and stomach discomfort, which was similar to our study. Additional symptoms included a palpable bulge in the abdomen, gastrointestinal bleeding, and diarrhea. On physical examination, intestinal perforation (32.6%) was observed often in their research, in addition to the usual transverse ulcers, strictures, hyperplastic lesions, and serosal tubercles [13]. In our study,

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ulcaretion, stricture and perforation were seen in cases of intestinal tuberculosis.

The current investigation identified 17 instances of infective colitis of which 4 cases were of parasitic infestation, including amoebiasis. Roure S. et al. examined 50 instances of amoebic colitis over ten years. HIV was present in 13 of the individuals. Five instances of amoebic colitis and IBD were found to be concurrent [14]. This parallel was not seen in our study.

5.Conclusion:

According to our study, the most common non-neoplastic lesion of the large intestine was recurrent appendicitis, which was primarily seen in younger patients. Acute appendicitis and ulcerative colitis were the next most common conditions. Clinical characteristics (symptoms) overlapped in 18.4% of cases. In 24.5% of cases, endoscopic characteristics overlapped.

Compared to other studies, a significant shift in trend was noted, with a rise in Crohn's disease and ulcerative colitis cases. Thus, histopathological diagnosis becomes important since biomarkers are not applicable in the majority of non-neoplastic lesions.

In summary, intestinal lesions exhibit varied morphological features while also exhibiting a notable commonality in clinical presentations. Hence, the significance of histological analysis in the treatment of colonic lesions becomes significant.

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