

Clinical profile of patients with small bowel disorders: A prospective study at tertiary care centre

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Abstract

Background: Small bowel diseases can be broadly classified into obstructive and non-obstructive. Clinical symptoms of primary small intestinal disease included abdominal pain, abdominal mass, vomiting, diarrhea, jaundice, haematemesis and constipation. Patients present with very nonspecific complaints such as pain abdomen, weight loss or anemia, hence the onus falls on the radiologists to diagnose the disease. **Aim:** To study the clinical profile of patients with small bowel disorders which can help in early suspicion and rapid diagnosis for effective management. **Material and Methods:** A prospective study of 60 patients who were diagnosed to have small bowel pathology on MDCT was done. General and systemic examination was done. The major clinical symptoms and etiology were analyzed. **Results:** The most common presenting complaint was pain abdomen occurring in 18 (30%) patients. The other presenting complaints were vomiting (3), abdominal distention (5), chronic pain abdomen (3). 32 patients were diagnosed with obstructive causes and 28 patients were diagnosed with non-obstructive causes. **Conclusion:** Abdominal pain is the most common clinical symptom in patients with small bowel disorders. The symptoms of patients with primary small intestinal disease are lacking of specificity. So, small intestinal disease could not be diagnosed only by symptoms.

Keywords: small bowel disorders, abdominal pain, MDCT, obstruction

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INTRODUCTION

Small intestine is a collective term representing the duodenum, jejunum and ileum. The duodenum is distinct with four parts whereas the jejunum forms the proximal two fifths and ileum distal three fifths (of rest of the small intestine) with no true anatomic border in between them. Small bowel diseases can be broadly classified into obstructive and non-obstructive. Small bowel obstruction

is a common clinical syndrome requiring rapid and accurate diagnosis for effective treatment. Clinical symptoms of primary small intestinal disease included abdominal pain, abdominal mass, vomiting, melaena, fever, hematochezia, diarrhea, jaundice, haematemesis and constipation.¹ Patients present with very nonspecific complaints such as pain abdomen, weight loss or anemia, hence the onus falls on the radiologists to diagnose the disease. This prospective study was conducted to study the clinical profile of patients with small bowel disorders which can help in early suspicion and rapid diagnosis for effective management.

MATERIAL AND METHODS

A prospective study of 60 patients was done at tertiary care hospital over a period of two years, who were diagnosed to have small bowel pathology on MDCT. All 60 patients subsequently underwent surgery with histopathological examination. Necessary clearance was taken from Ethical Committee and written informed consent was taken from

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every patient. Intraoperative and histopathological findings were used as standard of reference.

Inclusion criteria

- All patients with small bowel pathologies on MDCT who underwent surgery with histopathological examination

Exclusion criteria

- Patients with small bowel pathologies who did not undergo surgical intervention and in whom histopathology correlation was not available.

On admission, detailed history of the patient was taken. General examination and physical examination was done. All the cases were investigated on 64 slice GE light speed VCT system.

RESULTS

The mean age was 42.4 years with the youngest being 4 months old and the oldest being 71 years. The commonest age group in our study fell into the 4th decade (15 cases) followed by 12 cases in the 5th decade and 11 cases in the 6th decade. Amongst the 60 patients, 43 (71.7%) were male patients and 17 (28.3%) were female patients.

Table 1: Clinical features of study population

Chief complaints	Frequency	Percent
Pain abdomen	18	30
Vomiting	3	5.0
Weight loss, loss of appetite	1	1.7
Constipation	1	1.7
Abdominal distension	5	8.3
Chronic pain abdomen	3	5.0
Mass abdomen	1	1.7
Pain abdomen + vomiting	13	21.7
Pain abdomen + weight Loss, loss of appetite	7	11.7
Pain abdomen + abdominal distension	1	1.7
Pain abdomen + abdomen + fever	2	3.3
Vomiting + weight Loss, loss of appetite	2	3.3
Pain abdomen + vomiting + weight Loss, loss of appetite	3	5.0
Total	60	100.0

The most common presenting complaint was pain abdomen occurring in 18 (30%) patients. The other presenting complaints were vomiting³, loss of weight and appetite¹, constipation (1), abdominal distention⁵, chronic pain abdomen³ and mass abdomen¹ respectively. A combination of complaints like pain abdomen with vomiting¹³, pain abdomen with weight loss⁷, pain abdomen with fever², pain abdomen, vomiting with weight loss (3), vomiting with weight loss² and pain abdomen with abdominal distention¹ occurred in a total of 26 patients. In present study, 32 patients were diagnosed with obstructive causes and they are tabulated below as per the diagnosis.

Table 2: Small bowel lesions with obstruction

Cause	No. of Patients
GIST	1
Ischemia	1
Carcinoma duodenum	8
Ileoleal Intussusception	5
Small bowel tuberculosis	3
Closed loop obstruction	1
Carcinoid	1
Ileal carcinoma	1
Stricture	11
Total	32

28 patients were diagnosed with non-obstructive causes and they are tabulated below as per the diagnosis.

Table 3: Small bowel lesions without obstruction

Cause	No. of Patients
GIST	2
Ischemia	9
Lymphoma	2
Perforation	2
Small bowel tuberculosis	12
Crohn's disease	1
Total	28

In our study, small bowel tuberculosis was the most common CT diagnosis made in 15 (25%) patients, followed by stricture small bowel in 10 (16.6%) patients, small bowel ischemia in 9 (15.0%) patients, and carcinoma duodenum in 8 (13.3%) patients. Ileoleal intussusceptions were diagnosed in 5 (8.3%) patients and 3 (5%) patients were diagnosed with Gastro Intestinal Stromal Tumor (GIST). Small bowel lymphoma and small bowel perforation occurred in 2 (3.3%) patients each. Crohn's, carcinoid, ileal carcinoma and closed loop obstruction, adhesive obstruction, SMV thrombosis with normal bowel enhancement were diagnosed on CT in 1 (1.7%) patient each.

DISCUSSION

Small bowel is affected by a diversity of diseases which challenges the clinician in achieving a diagnosis. The most common investigative modality utilized in the initial days were the small bowel follow through technique with help of contrast agent preferably barium. Rubesin et al study claims that the prime aim of the radiologist lies in evaluating the overall location, course and size of various portions of small bowel.² In our study, most common presenting complaint was pain abdomen occurring in 18 (30%) patients. The other presenting complaints were vomiting³, loss of weight and appetite¹, constipation¹, abdominal distention⁵, chronic pain abdomen³ and mass abdomen¹ respectively. Zhan Jun analysed 309 cases clinically and found that abdominal pain was the most common clinical symptom as 218 cases had abdominal pain, which contributed to 71% of cases with primary

small intestinal disease. The second common symptom was abdominal mass.¹ In our study small bowel tuberculosis was the most common CT diagnosis made in 15 (25%) patients, followed by stricture small bowel in 10 (16.6%) patients, small bowel ischemia in 9(15%) patients, and carcinoma duodenum in 8 (13.3%) patients. Ileocecal intussusceptions were diagnosed in 5 (8.3%) patients and 3 (5%) patients were diagnosed with Gastro Intestinal Stromal Tumor (GIST). Small bowel lymphoma and small bowel perforation occurred in 2 (3.3%) patients each. Crohn's, carcinoid, ileal carcinoma and closed loop obstruction, adhesive obstruction, SMV thrombosis with normal bowel enhancement were diagnosed on CT in 1(1.7%) patient each. Johannes Sailer et al in his study stated that primary neoplasm of small bowel are uncommon, representing only about 3% of all neoplasms of digestive tract. Among the malignant tumors adenocarcinoma accounts for 1% with duodenum being the most common site of involvement, neuroendocrine tumors 25% - 35%, lymphoma 15% - 20% and GIST 15%.³ In our study neoplastic lesions of small bowel were reported on CT in 15 patients (carcinoma duodenum -8, 1 lymphoma small bowel -2, ileal carcinoma -1, duodenal carcinoid - 1, small bowel GIST -3). Duodenal carcinoma was the commonest malignant tumor of small bowel in our study. In the observations by Rosai et al, 50% of small bowel adenocarcinoma was found in duodenum especially near the ampulla.⁴ Julie et al has observed manifestation of an annular narrowing with irregular overhanging edges or an ulcerative lesion in the cases of duodenal adenocarcinoma.⁵ Amongst the inflammatory conditions of small bowel tuberculosis of intestine was the most common diagnosis in our study (15cases -25%). Balthazar et al has shown the usefulness of CT in diagnosing ileocecal tuberculosis and knowing the location and extent of intestinal and mesenteric involvement. The most common CT finding was mural thickening (concentric occasionally eccentric) limited to ileum and cecum or simultaneously involving both regions. This in association with luminal narrowing with/without proximal dilatation and ileocecal involvement suggested the diagnosis of tuberculosis.⁶ Crohn's disease was diagnosed in one patient with the help of MDCT. Intussusception is not only a disease of childhood but also affects adults. Unlike in children adult intussusception is usually pathological with a definite lead point which could be a polyp, lipoma, mesenteric node or tumor. Kim et al study showed the role of CT in diagnosing intussusception and its lead point.⁷ We diagnosed 5 cases of ileocecal intussusception correctly, with all of them exhibiting the classical target sign or the doughnut sign on CT imaging. Small bowel ischemia

represents the third commonest diagnosis in our study. Out of 11 cases of ischemia, preop MDCT showed bowel ischemia with gangrene in 10 patients. Surgery and histopathology revealed bowel gangrene in all 11 patients. Stricture of the small bowel accounts for the second highest incidence in our study with eleven patients (18.3%). The patient in whom CT diagnosis could not be made had dilated small bowel loops with signs of obstruction. This patient had a prior history of appendectomy, in view of which the cause of obstruction was thought to be adhesions. However, a stricture was identified on surgery which was found to be the cause of obstruction. All other cases (10 cases) presented as small bowel obstruction with CT findings of dilated proximal loops with zone of transition. Two cases of small bowel perforation (1 jejunal and 1 ileal) were observed in our study, both of whom presented with findings of thickened small bowel loops and pneumoperitoneum. The site of perforation was localized to ileum in one patient and jejunum in the other. Small bowel perforation is an emergency medical situation which is only rarely diagnosed clinically CT is the ideal imaging modality as these patients present as an acute abdomen.⁸ Non obstructive causes in our study were Lymphoma (2 cases), GIST (2 cases), Small bowel ischemia (5 cases), Small bowel perforation (2 cases), Small bowel tuberculosis (12 cases) and Crohn's disease (1 case).

CONCLUSION

The symptoms of patients with primary small intestinal disease are lacking of specificity as these symptoms may occur in patients with upper digestive disease and colon disease. So small intestinal disease could not be diagnosed only by symptoms.

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