



Original Research Article

A prospective study on Intussusception of bowel in adults: Unusual presentations, diagnosis and operative strategies

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ABSTRACT

Background: Adult Intussusception is an uncommon pathology and often presents with vague and unusual symptoms. The preoperative diagnosis is also very difficult. In this study, 23 patients of age more than 18 years with Intussusception are included. The predominant clinical features were pain abdomen, abdominal distension, obstruction, nausea and vomiting. All cases included in this study underwent exploratory laparotomy after proper evaluation.

Aim and Objective: To study the clinical presentations, diagnosis and treatment options of adult intussusceptions in a tertiary care centre in VIMSAR, Burla.

Materials and Methods: This is a prospective study of 23 patients with age more than 18 with a diagnosis of intestinal intussusception between the period 2018 to 2020 presented to VIMSAR, Burla.

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1. Introduction

Intussusception refers to a condition where one segment of the intestine becomes drawn in to the lumen of the distal segment of the bowel. Intussusception is a relatively common cause of intestinal obstruction in infancy but accounts to only 5% of obstruction in adult population. Median age of presentation of adults is 4th– 6th decade. Most of the adult cases have an inflammatory lesion or neoplasm as lead point and most of them are malignant.^{1,2} There is no specific guidelines regarding the treatment of adult intussusception but mainly involves resection of involved bowel. Awareness of this rare entity is essential for the correct diagnosis and management.

1.1. Etiopathogenesis

The commonest type of intussusception in adults is ileocolic.³ The pathology leading this may be Lipoma, Fibroma, Polyp, Meckel's diverticulum, or Hemangioma.⁴ Malignancy as a cause is usually seen in large bowel intussusceptions. Disorders in peristalsis lead to intussusceptions. Any focal lesion in the bowel will alter the normal peristalsis. This tends to push the proximal bowel into the lumen of distal bowel segment. The lesion acts as the lead point and is called as the apex of intussusceptions. The bowel become edematous and compromises the blood supply leading to obstruction. Left untreated it will eventually become gangrenous.⁵

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2. Results

2.1. Demographics

A total of 23 patients with diagnose of intussusceptions were included whose age is more than 18 years. Mean age of patients was 53.43 years with a range of 26 to 76 years. Out of 23 patients 16 (69.56%) were males and 7 (30.43%) were females. There were 12 cases of ileoileal intussusceptions, 8 cases of ileocaecal intussusceptions 2 cases of jejeonojejunal intussusceptions and 1 case of colocolic intussusception.

2.2. Clinical manifestations

Abdominal pain was the most common presenting complaint. 18 patients had complaints of pain abdomen. Abdominal distension and features of bowel obstruction was shown by 13 patients. Nausea and vomiting was shown by 8 patients. Diarrhea, constipation, rectal bleeding were other symptoms. Mean duration of symptoms was 6.95 days.

Table 1:

Symptoms and signs	n (%)
Pain abdomen	19 (82.6%)
Absolute constipation	14 (60.86%)
Abdominal distension	13 (56.52%)
Nausea	8 (34.78%)
Vomiting	6 (26.08%)
Diarrhea	3 (13.04%)
Rectal bleeding	2 (8.69%)

2.3. Preoperative diagnosis

All underwent preoperative digital abdominal X-ray as first investigation followed by ultrasound abdomen and pelvis. 15 cases presented to casualty showed multiple air fluid level suggestive of intestinal obstruction. Further all cases underwent ultra sound scan and then CT scan to confirm the diagnosis. Ultrasonographic findings include typical target sign and doughnut sign but this investigation is performer dependent and maybe missed at times. CT scan is thus the best modality for diagnosis of intussusceptions.

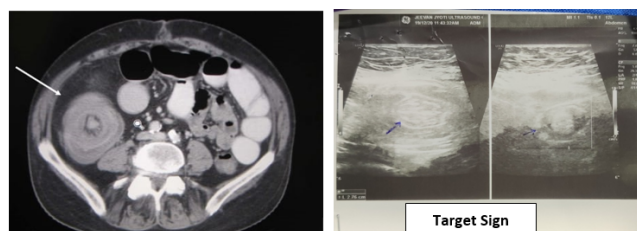


Fig. 1:

2.4. Location

Out of 23 cases of adult intussusceptions 12 were ileoileal, 5 cases were ileocaecal, 3 cases were Ileo ileocaecal 2 cases were jejeonojejunal, and 1 was colocolic in location

Table 2:

Location	Number of cases (%)
Ileo ileal	12 (52.17%)
Ileo caecal	5 (21.73%)
Ileo ileo caecal	3 (13.04%)
Jejeono jejunal	2 (8.69%)
Colo colic	1 (4.34%)

2.5. Treatment and post-operative management

All the 23 cases underwent elective operative management after thorough pre op investigations.(Table 3)

3 patients underwent simple reduction of intussusceptions. 12 patients underwent resection and anastomosis. 1 patient underwent reduction and polypectomy. 2 patients underwent right hemicolectomy. 1 patient underwent ileostomy. Another patient underwent left hemicolectomy and end colostomy. Resection and ileo transverse colon side to side anastomosis and ileo ascending colon side to side anastomosis were done for another 2 patients.(Table 4)

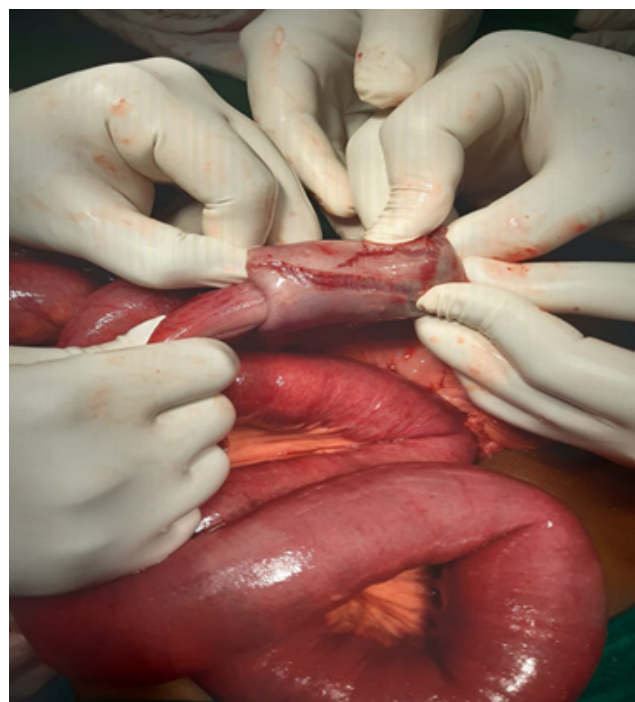


Fig. 2:

Table 3:

No. of patients	Age	Sex	Location	Preoperative diagnosis	Procedure
1	68	F	Ileo ileocaecal	USG and CECT	Right hemicolectomy and ileostomy
2	32	M	Ileoileal	USG and CECT	Reduction
3	51	M	Ileoileal	USG and CECT	Reduction, resection and anastomosis
4	26	M	Jejenojejunal	USG and CECT	Reduction
5	38	M	Ileoileal	USG and CECT	Reduction, resection and anastomosis
6	40	F	Ileoileal	USG and CECT	Reduction, segmental resection and anastomosis
7	53	M	Ileocaecal	USG and CECT	Reduction, segmental ileal re section and anastomosis
8	61	M	Ileocaecal	USG and CECT	Reduction, ileal resection and anastomosis
9	46	M	Ileoileal	USG and CECT	Reduction and polypectomy
10	52	M	Ileoileal	USG and CECT	Reduction, resection and anastomosis
11	64	F	Ileo ileocaecal	USG and CECT	Resection and anastomosis
12	66	M	Ileocaecal	USG and CECT	Reduction, resection and ileo transverse colon side to side anastomosis
13	42	M	Ileoileal	USG and CECT	Reduction, resection and anastomosis
14	76	M	Ileocaecal	USG and CECT	Right hemicolectomy and ileocolic side to side anastomosis
15	63	F	Ileocaecal	USG and CECT	Resection and end ileostomy
16	44	M	Ileo ileocaecal	USG and CECT	Reduction, resection and side to side ileo ascending colon anastomosis
17	56	F	Ileoileal	USG and CECT	Reduction, resection and anastomosis
18	60	M	Ileoileal	USG and CECT	Reduction, resection and anastomosis
19	37	M	Jejenojejunal	USG and CECT	Reduction, resection and anastomosis
20	44	F	Ileoileal	USG and CECT	Reduction
21	67	M	Colocolic	USG and CECT	Left hemicolectomy and end colostomy
22	73	M	Ileoileal	USG and CECT	Reduction, resection and end ileostomy
23	70	F	Ileoileal	USG and CECT	Reduction, resection and anastomosis

Table 4:

Procedure performed	Number (%)
Resection and anastomosis	12 (52.17%)
Reduction and polypectomy	1 (4.34%)
Right hemicolectomy	2 (8.69%)
Ileostomy	1 (4.34%)
Left hemicolectomy and end colostomy	1 (4.34%)
Reduction of intussusceptions	3 (13.04%)
Ileo colon anastomosis	2 (8.69%)

3. Discussion

Adult intussusception is an uncommon clinical entity unlike in children. Sir Jonathan Hutchinson was the first to successfully operate on a child with intussusception in 1871.⁶

Intussusception in adults and children differs in various aspects and clinical presentation is also different. (Table 3 Table 3)^{7–11}

In our study abdominal pain was the most common presentation (82.6%) followed by absolute constipation

(60.84%) and abdominal distention (56.52%).

In adults the site of intussusception is 90% in small or large bowel and the remaining 10% involve the stomach or a surgically created stoma.¹² In our study all 23 cases were involving either small or large bowel.

The review article by Azar et al⁷ shows a mean duration of symptoms between onset and presentation of 37.4 days. In our study the mean duration of presentation was 48.3 days. Elderly patients presented later than the younger patients.

Table 5: Difference between adult and childhood intussusceptions

	Children	Adult
Percentage of intussusceptions	95%	5%
Aetiology	90% idiopathic	Rarely idiopathic
Classical triad of vomiting, rectal bleeding and abdominal pain	Usually present	Occurs in only 15%-20%
Treatment	Mainly non operative	Surgical resection is almost always required

**Fig. 3:**

The traditional treatment with barium enema has a good result in pediatric population but it cannot be done in adult population.¹³

Several imaging techniques may help in preoperative diagnosis. Plain abdominal Xrays are typically the first diagnostic tool and shows signs of intestinal obstruction if any and can provide site of obstruction in many cases.^{13,14} Contrast studies will help to identify the exact location and in many cases the cause of obstruction also. The classical features of intussusceptions in ultrasonography are “Target and Doughnut sign” on transverse view and “Pseudokidney sign” in longitudinal view. The disadvantage of ultrasound is masking by gas filled loops of bowel and its operator dependency. In our study we did preoperative ultrasonography and confirmed the diagnosis by Contrast enhanced CT scan of abdomen.

There is almost always an underlying pathology in adult intussusceptions and careful assessment after reduction is required however in our study young adults with no underlying lead point were treated with simple reduction only. If the blood supply is doubtful then resection and anastomosis of entire lesion is mainstay of treatment. If lesion involves colon then no attempt should be made to reduce the intussusceptions.^{13,14} Reduction can be attempted if the small bowel is involved and there is no suspicion of malignancy. A wide resection and anastomosis is the safest procedure considering high chances of malignancy. All cases in our study with involvement of colon underwent resection without reduction.

Begos et al¹⁵ suggest resection without attempting reduction when the bowel is inflamed ischemic, or friable and in obvious colocolic intussusceptions. However Azar et al⁷ suggested that surgical resection without reduction is the preferred treatment in adults. In our study small intestinal intussusceptions without any signs of malignancy were reduced and resection and anastomosis was done only after examining the bowel post reduction but the large bowel intussusceptions underwent resection without reduction.

4. Conclusion

Adult intussusceptions are rare and often difficult to diagnose pre operatively due to non-specific symptoms. A high index of suspicion is required when patients with suspected features of intussusceptions are presented. Abdominal CT scans have a good role in pre-operative diagnosis. Most of the adult intussusceptions have a lead point. Treatment usually is resection of involved bowel since there is a very high chance of malignant lesions as lead point in large bowel intussusceptions. Overall a careful evaluation is required in managing the adult intussusceptions.

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6. Conflicts of Interest

No conflicts of interest.

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