Original Article

Adult Intussusception at a Tertiary Care Center: A Retrospective Study

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Abstract

Background: In adults, the majority of cases of intussusception are due to malignancy. **Aims:** The aim of the study is to describe the pattern of intussusception in the adult population diagnosed and treated at a tertiary care center. **Subjects and Methods:** Study Design: This is a retrospective cross-sectional study based on chart review, and data collection was made from the computer database and inpatient case records. Study Setting: Adult intussusception cases diagnosed and treated at a tertiary care referral center in South India. All inpatient case sheets including investigations and histopathology information on the computer database of all patients diagnosed with intussusception in the period of August 2012 to July 2016 were retracted based on a pretested and standardized form. Demographic data and other baseline data were summarized with descriptive statistics. SPSS software was used for data analysis. **Results:** Of the 77 patients, 47 (61%) were male. The common presentations were abdominal pain (95%), vomiting (64%), and rectal bleeding (29%). Common examination findings were abdominal tenderness (45%), guarding (39%), and abdominal mass (38%). On ultrasonography, fifty (65%) patients had intussusception with ileocolic (25) as the most common type. Computed tomography abdomen was taken for 28 (36%) patients, in which 23 (82%) had intussusception with ileocolic (9) as the most common type. Surgery was done for 53 (69%) patients, and the most common procedure was right hemicolectomy (25) followed by resection and anastomosis of the small bowel (23). Intraoperatively, 42 (79%) patients had intussusception with ileocolic (23) as the most common type. Intraoperatively, 14 (26%) patients had a bowel gangrene. Biopsy-proven cause for intussusception was present in 46 patients, with malignancy (21) as the most common cause. The patients were on regular follow-up. Recurrence of intussusception occurred in six patients of the small bowel intussusception who had polyposis. **Conclusions:** Adult intussusception is often associated with malignancy. Hence, a formal resection without reduction is needed and surgery should be done following oncological principles.

Keywords: *Adult intussusception, bowel gangrene, intestinal obstruction, malignancy*

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Introduction

Intussusception is defined as the telescoping of one segment of the bowel into the adjacent one. It is a common cause of intestinal obstruction in children, but rare in adults.[1] Nearly 5% of the cases of intussusception occur in adults. The causes of intussusception vary in children and adults. Anything in the bowel wall which can alter the normal peristaltic pattern can cause intussusception. In adults, the majority of cases are due to malignancy.[2] The cases in adults are usually diagnosed late due to an atypical presentation.[3] The pattern of presentation and principles of management of adult intussusception were evaluated in this study.

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Aim of the study

The aim of the study is to describe the pattern of intussusception in the adult population diagnosed and treated at a medical college, Trivandrum.

Methodology

Study design

This was a retrospective cross-sectional study based on chart review, and data collection was made from the computer database and inpatients' case records.

Study duration

Adult intussusception cases diagnosed and treated at a tertiary center over the period of 4 years from August 2012 to July 2016 were included in the study.

Study setting

The study was conducted at a tertiary care referral center in South India.

Sample size

All cases of intussusception over the period of 4 years from August 2012 to July 2016 admitted and treated in our institution were included in the study.

Participants

The demographic and clinical data of the patients and the therapeutic procedures performed were obtained from the case sheets based on a pretested and standardized form. All demographic data including investigations and histopathology information on the computer database and inpatients case record of all patients diagnosed with intussusception in the last 4 years were included in the study.

Inclusion criteria

1. Age ≥18 years
2. Diagnosis of intussusception.

Exclusion criteria

1. Incomplete information in the case sheet.

Analysis

Demographic data and other baseline data were summarized with descriptive statistics. SPSS (IBM SPSS Statistics for Windows, Version 24.0. Armonk, NY: IBM Corporation 2016) software was used for data analysis.

Institutional ethics committee clearance was obtained for conducting this study.

Table 1: Comparison of the common types of adult intussusception

	Ileocolic (35)	Ileoileal (20)	Colocolic (10)
Bleeding PR (%)	10 (29)	4 (20)	4 (40)
Loose stools (%)	6 (17)	7 (35)	1 (10)
Constipation (%)	6 (17)	2 (10)	5 (50)
USG diagnosis (%)	25 (71)	15 (75)	2 (20)
Malignancy (%)	10 (29)	1 (0.05)	9 (90)
Gangrene (%)	6 (17)	6 (30)	0

USG: Ultrasonography, PR: Per rectum

Results

Of the 77 patients, 47 (61%) were male, and the mean age was 52 years. Sixty-eight (88%) patients were admitted through casualty with acute symptoms. The common presentations were abdominal pain (95%), vomiting (64%), and rectal bleeding (29%) [Table 1]. Common examination findings were abdominal tenderness (45%), guarding (39%), and abdominal mass (38%). Prior episodes of intussusception were present in 12 patients (16%). All patients took a plain X-ray abdomen and ultrasonography (USG) of the abdomen. Twenty-two (29%) and 33 (43%) patients had evidence of intestinal obstruction in X-ray and USG, respectively. Fifty (65%) patients had intussusception in USG, with ileocolic (25) as the most common type. Computed tomography (CT) abdomen was taken for 28 (36%) patients, in which 23 (82%) had intussusception, with ileocolic (9) as the most common type. Fifty-three (69%) patients underwent surgery, and the most common procedure was right hemicolectomy (25) followed by resection and anastomosis of the small bowel (23). Intraoperatively, 42 (79%) patients had intussusception, with ileocolic (23) as the most common type. Intraoperatively, 14 (26%) patients had bowel gangrene. A biopsy-proven cause for intussusception was present in 49 patients, with malignancy (21) as the most common cause. The common types of intussusception have been compared in Table 1. When comparing the types of intussusception, it was found that constipation and rectal bleeding were more in favor of colocolic type and loose stools were more in favor of an ileoileal type. Ultrasound scan could diagnose only 20% of colocolic type of intussusception. Furthermore, in the ileoileal type of intussusception, 46% patients had gangrene. Nonoperative management was instituted for 13 patients who had a spontaneous resolution of symptoms during evaluation and preparation for surgery and for seven patients who had recurrent episodes of intussusception due to polyposis. The patients are on regular follow-up. Recurrence of intussusception episodes occurred in six patients of small bowel intussusception who had polyposis. Two patients had to undergo laparotomy again for adhesive intestinal obstruction.

Discussion

Intussusception is a unique and uncommon cause of intestinal obstruction in adults. Intussusceptum

is the proximal part of the bowel which telescopes into the distal part called intussuscepiens due to a lead point. The lead point can be a malignant growth, benign polyps, lipoma, diverticulum, inflammatory conditions, or idiopathic.[4] The site of intussusception can be in the small bowel, large bowel, or at sites of anastomosis like in retrograde intussusception occurring in gastrojejunostomy. In children, the most common type is ileocolic type, whereas in adults, colocolic type is said to be more common. Intussusception usually presents with features of intestinal obstruction, that is, abdominal pain, vomiting, and constipation. Other features such as blood in stools, abdominal mass, or features of gangrene and sepsis may be seen. The main cause of worry is intestinal ischemia which worsens as the tightness of invagination increases. Intussusception may be occasionally found incidentally in CT scans taken for some other purpose. Furthermore, the obstruction may relieve by its own. Hence, there is a wide spectrum of presentation in adult intussusception.[5] The diagnosis is usually made radiologically, or it may be an intraoperative finding. Preoperative diagnosis is often delayed or missed due to lack of a pathognomonic clinical picture seen in children. Plain X-ray will help in making an early diagnosis of intestinal obstruction. USG may give the characteristic finding of the target sign.[3,6] CT scan is the most reliable investigation for preoperative diagnosis. CT may also reveal a target mass and can give clues about the nature of the lead point. The management of adult intussusception is primarily surgical. Reduction of the invaginated segment is not advised due to the risk of dissemination of malignancy in the process. This is totally different from the management of intussusception in children where the primary management is usually conservative and reduction of the intussuscepiens is attempted. In adults, resection of the involved segment is warranted. The prognosis of patients with malignancy as the lead point must be favorable as intussusception usually occurs in the early course of the disease.[1,4,6-8] In a case series on adult intussusception from the Massachusetts General Hospital by Taraneh Azar and David L. Beger, 58 cases were identified from 30-year data. Nearly 93% of the cases were associated with a pathological lesion. Around half of their cases were due to malignancy, and they concluded that surgical resection without reduction is the preferred treatment for adult intussusception.[9] In another case series by Reijnen *et al*., twenty adults with intussusception were studied, and they also concluded that primary resection is the treatment of choice in elderly patients due to the high risk of malignancy.[3] In the review on adult intussusception at the Mayo clinic by Nagorney *et al*., 48 cases were identified. They found that in colonic intussusception, two-thirds of the cases were malignant, and in small bowel intussusception, one-third were malignant. They suggested surgical resection without a reduction in colonic cases and in small bowel intussusception where malignancy is suspected.[7] In a large review on adult intussusception by Weilbaecher *et al*., 160 cases were identified, they also had similar findings, and they concluded that the treatment of choice for adult intussusception is resection of the involved bowel without reduction.[2]

Conclusions

Adult intussusception is a challenging diagnosis. It is associated with a lead point, which is often a malignancy. The most common type of intussusception in adults is ileocolic type. In ileoileal type, 46% of cases had gangrene. Hence, a formal resection without reduction is needed and surgery should be done following oncological principles.

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Conflicts of interest

There are no conflicts of interest.

References

1. Felix EL, Cohen MH, Bernstein AD, Schwartz JH. Adult intussusception; Case report of recurrent intussusception and review of the literature. Am J Surg 1976;131:758-61.
2. Weilbaecher D, Bolin JA, Hearn D, Ogden W 2nd. Intussusception in adults. Review of 160 cases. Am J Surg 1971;121:531-5.
3. Reijnen HA, Joosten HJ, de Boer HH. Diagnosis and treatment of adult intussusception. Am J Surg 1989;158:25-8.
4. Marinis A, Yiallourou A, Samanides L, Dafnios N, Anastasopoulos G, Vassiliou I, *et al*. Intussusception of the bowel in adults: A review. World J Gastroenterol 2009;15:407-11.
5. Williams NS, Bulstrode CJ, O'Connell PR. Intestinal obstruction. Bailey and Love's Short Practice of Surgery. 26th ed. CRC press; 2013. p. 1184-9.
6. Yalamarthi S, Smith RC. Adult intussusception: Case reports and review of literature. Postgrad Med J 2005;81:174-7.
7. Nagorney DM, Sarr MG, McIlrath DC. Surgical management of intussusception in the adult. Ann Surg 1981;193:230-6.
8. Begos DG, Sandor A, Modlin IM. The diagnosis and management of adult intussusception. Am J Surg 1997;173:88-94.
9. Azar T, Berger DL. Adult intussusception. Ann Surg 1997;226:134-8.