

Original Article

Spectrum of Etiology among Adult Intussusception Patients: Study of 11 Cases at a Tertiary Care Hospital in Bangladesh

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Abstract

Background: Intussusception in adult patients is occurred in different reasons. **Objectives:** The purpose of the present study was to see the spectrum of etiology among adult intussusception patients. **Methodology:** This case series was performed in the Department of Surgery at Shaheed Suhrawardy Medical College, Dhaka from July 2014 to June 2015 for a period of 1(one) year. All the patients presented with intussusceptions were selected as study population. A detailed history was obtained from each patient. Patients with the age of ≥ 18 years, regardless the symptoms like onset, duration, intensity, progression were included for this study. Per-operative diagnosis was further confirmed by histopathology of the resected specimen. **Result:** A total number of 11 cases were recruited after fulfilling the inclusion and exclusion criteria. Gastro intestinal stromal tumour (GIST) was the most common etiology of intussusceptions which was 5(45.5%) cases followed by adenocarcinoma which was 2(18.2%) cases. Meckel's diverticulum, Intestinal TB, Lipoma and Leiomyomatous polyp were also found in 1 case each. **Conclusion:** Adult intussusception is most commonly occurred due to gastro intestinal stromal tumour followed by adenocarcinoma. [*Journal of Science Foundation, January 2016;14(1):3-7*]

Keywords: Intussusception; bowel obstructions; etiology

Introduction

Intussusception is defined as the “telescoping” or invagination of the proximal bowel wall into the adjacent distal segment, often causing bowel obstruction (Ishii et al., 2007). It was first reported by Barbette of Amsterdam in 1674 and a detailed report was further presented by John Hunter in 1789; however, Sir Jonathan Hutchinson was the first to operate on a child with intussusception in 1871 (Martin-Lorenzo et al., 2004). Intussusception is a very common disease of children, with a peak incidence between 5 months to 1 year of age, 90.0% of all cases being idiopathic. However, in adults it is an extremely rare condition, representing about 5.0% of all cases of intussusception and about 1 to 5.0% cases of intestinal obstruction in adults (Marinis et al., 2009).

Almost 90.0% cases of intussusception are secondary to a pathologic condition that serves as a “lead point”, such as carcinoma, polyps, Meckel's diverticulum, strictures or benign neoplasms; however, most often

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these pathologic conditions are identified intra-operatively (Takeuchi et al., 2007). There may be a risk of malignancy in almost 65% of the cases of intussusceptions (Ishii et al., 2007), so definitive surgical treatment by surgical resection is usually the treatment of choice in almost 70 to 90.0% of the cases (Ishii et al., 2007). The purpose of this present study was to present a prospective study of a total of 11 patients aged ≥ 18 years who were diagnosed with intussusception and was treated in the department of Surgery of Shaheed Suhrawardy Medical College and Hospital, Dhaka to highlight the variation in the pathological 'lead points', which led to the development of intussusception.

Methodology

This case series was performed in the Department of Surgery at Shaheed Suhrawardy Medical College, Dhaka, Bangladesh from July 2014 to June 2015 for a period of 1(one) year. All the patients presented with intussusceptions were selected as study population. A detailed history was obtained from each patient, aged ≥ 18 years, regarding his/her symptoms like onset, duration, intensity, progression, etc, and a complete and thorough physical examination was done, in order to assess the condition of the patient and come to a clinical diagnosis. Further evaluation was done through diagnostic investigations, which include, ultrasonogram of the whole abdomen, plain X-ray of the abdomen in erect posture, colonoscopy and, in selected cases, CT-scan of the whole abdomen. Per-operative diagnosis was further confirmed by histopathology of the resected specimen.

Result

A total of 11 patients were finally diagnosed with adult intussusception. The relation of the age, sex and pathological lead points are shown in the diagrams. The pie diagram shows that of the affected patients 37.0% were female and 63.0% were male (Figure I).

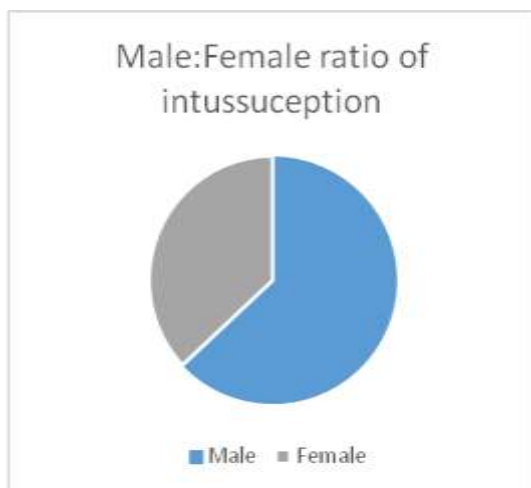


Figure I: Gender Difference of Study Population

In this study maximum patients (4) affected by adult intussusception suffered from gastrointestinal stromal tumours of which 3 were female and 1 male. The second most leading cause was adenocarcinoma, which mainly affected the males. Other causes included Meckel's diverticulum, intestinal tuberculosis and lipoma (Table 1).

Table 1: Number of patients affected by each underlying pathological lead point

Pathological point	Male	Female	Total
GIST	2	3	5 (4%)
Adenocarcinoma	2	0	2(18%)
Meckel's diverticulum	1	0	1(9%)
Intestinal TB	1	0	1(9%)
Lipoma	0	1	1(9%)
Leiomyomatous polyp	1	0	1(9%)
Total	7	4	11(100.0%)

The most common form of intussusception found was the Ileo-ileal variety, affecting a total of 4(44%) patients, seen with almost every form of pathological lead points. Ileo-caecal variety was seen in only 3 patients, all of whom were diagnosed with GIST. The colo-colic variety was found in adenocarcinoma and lipoma (Table 2).

Table 2: Types of intussusception and their underlying pathology

Pathological Lead Point	II	IC	CC	Total
GIST	2	3		5
Adenocarcinoma	1		1	2
Meckel's Diverticulum	1			1
Lipoma			1	1
Intestinal TB	1			
Leiomyomatous polyp	1			
Total	6	3	2	11

II = ileo-ileal, IC = Ileo-colic, CC = colo-colic

Malignant lesions were detected in almost 44.0% of the cases whereas 56.0% of the cases were of benign origin (Table 3).

Table 3: Relation of the Number of Intussusceptions with the Nature of the Lesion

Diseases	Benign	Malignant
GIST (CD 117+)	0	2
GIST (CD 117-)	3	0
Adenocarcinoma	0	2
Meckel's diverticulum	1	0
Intestinal TB	1	0
Lipoma	1	0
Leiomyomatous polyp	1	0
Total	7	4

In this study male patients presented with predominantly ileo-ileal variety while female patients presented with predominantly ileo-colic variety. Colo-colic variety although rare affects both males and females equally (Figure II).

Discussion

Adult intussusception is very rare. Intussusception is idiopathic in only about 8 to 20% of the adult cases and is more likely to occur in the small intestine (Azar and Berger 1997). The remaining 90% is usually seen to initiate secondary to any pathologic lesion of the bowel wall or irritant within the lumen that alters normal peristaltic activity and serves as a lead point, which is able to initiate an invagination of one segment of bowel into the other (Erkan et al., 2005). This usually leads to obstruction of the free passage of the intestinal contents and, when severe, compromise of the vascular flow of the intussusceptant, thereby, causing inflammatory changes, ranging from thickening to ischemia of the bowel wall (Akçay et al., 1994).

In the small intestine, an intussusception can be secondary to the presence of intra- or extra-luminal lesions like inflammatory, Meckel's diverticulum, post-operative adhesions, lipoma, adenomatous polyp, lymphoma and metastases as well as the iatrogenic presence of intestinal tubes (Eisen et al., 1999). Malignancy is found in up to 30.0% of the cases (Haas et al., 2003). In the Large intestine up to 66.0% of the cases are of malignant origin (Martin-Lorenzo et al., 2004). An intussusception usually has 3 parts like intussusceptum which is the inner tube (proximal bowel); 2nd is the returning or the middle tube and the last one is the intussusciptans which is the outer tube (Nagorney et al., 1981).

Intussusception has been classified into four categories, based on their location in the gastrointestinal tract (Erkan et al., 2005)

1. Entero-enteric [II], confined to the small bowel
2. Colo-colic [CC], involving the large bowel only
3. Ileo-colic [IC], defined as the prolapse of the terminal ileum within the ascending colon
4. Ileo-caecal, where the ileo-caecalvalve is the leading point of the intussusceptions

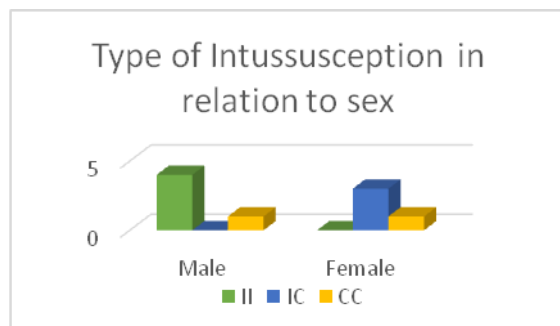


Figure II: Relation of sex of the patient with variant of intussusception

The classic (pediatric) presentation of a triad of cramping abdominal pain, bloody diarrhoea and palpable tender mass, is extremely rare in adults. Often the presenting symptoms are non-specific, such as, nausea, vomiting, gastrointestinal bleeding, alteration of bowel habits, constipation or abdominal distension, and the majority of the cases in adults usually present with sub-acute or chronic, often repeated episodes of intestinal obstruction (Takeuchi et al., 2007). A thorough physical examination usually, but not invariably, reveals a tender sausage shaped mass with concavity towards the umbilicus.

Investigations aimed at diagnosing adult intussusception include imaging studies, such as X-ray abdomen: plain X-rays help to establish intestinal obstruction with the absence of caecal gas shadow in ileo-colic cases; Barium enemas usually reveal the claw-sign in the ileo-colic variety, but not useful in ileo-ileal variety. Ultrasonogram is more sensitive in children, revealing the donut appearance of the concentric rings in transverse section. The most accurate (58-100%) imaging technique is the computerised tomography (CT) scan of the abdomen, which usually reveals a ‘target’ or ‘sausage’ shaped soft tissue mass (Ishii et al., 2007). However, most cases are often missed and usually diagnosed intra-operatively (Eisen et al., 1999).

Treatment modalities often include a ‘conservative’ or non-surgical approach with IV fluids, broad spectrum antibiotics and non-operative reduction using double contrast ‘air and barium’ enema (Williams et al., 2005). The surgical approach usually involves manual reduction when it was possible. If the affected area is necrotic or reduction is not possible, resection and anastomosis may be attempted (Marinis et al., 2009). Adult intussusception is an extremely rare condition and usually presents with vague non-specific, sub-acute symptoms or intestinal obstruction. Despite the advancement and cost-effectiveness of imaging techniques, it is often missed in the clinical setting and most often diagnosed per-operatively. According to the data presented above, it is evident that, although rare, intussusception affects males (63%) more than females (37%). Although the presenting symptoms were non-specific the clinical findings ranged from malignant lesions, such as adenocarcinomas and CD 117(+) gastrointestinal stromal tumours, to benign lesions, such as intestinal tuberculosis, Meckel’s diverticulitis, and even Lipoma or Leiomyomatous polyp.

Conclusion

In conclusion the present study permit to conclude that adult intussusception is most commonly occurred due to gastro intestinal stromal tumour followed by adenocarcinoma. Even though most cases had a benign pathological “lead point”, however, the high malignant prevalence is a strong contraindication for non-surgical approach of treatment. Therefore, the spectrum of adult intussusception need to be born in mind while examining patients, who present with sub-acute or repeated attacks of intestinal obstruction, for choosing the diagnostic and treatment modalities, that will procure a better outcome for both the patient and the health care providers.

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