ORIGINAL RESEARCH PAPER

General Surgery

A CASE SERIES ON ADULT INTUSSUSCEPTIONS IN A TERTIARY CARE HOSPITAL AND LITERATURE REVIEW

KEY WORDS:
Intussusception, Computed tomography, Surgical resection

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ABSTRACT

The invagination of one part of the bowel into a neighboring part is known as intussusception. In both the pediatric and adult populations, there are differences in the etiology, symptoms, diagnoses, and treatments. The majority of idiopathic cases in the pediatric population lead to the typical scenario of ileocolic intussusception. Anatomical characteristics of the developing gastrointestinal tract and viral effects are factors that contribute to causality. The intussusceptum in adults often develops as a result of a focal location of traction acting as a mucosal, intramural, or extrinsic lead point, drawing the proximal portion of the intestine into the peristalsing distal segment. Intussusception in the adult population poses a diagnostic problem prior to surgery; although surgical intervention is required, intraoperative care is still debatable.

INTRODUCTION

Intussusception is a process of telescoping of one segment of the intestine into the adjacent segment, leading to bowel obstruction. Usually the etiology is idiopathic, without any obvious lead point. Intussusception accounts for only 1% of the adult cases of intestinal obstruction whereas they are the most common cause of intestinal obstruction in the pediatric population. [1,2]. Intussusception in children usually follows an episode of viral gastroenteritis or following administration of rotavirus vaccination. This implies that the lead point is probably a lymphoid swelling. In adults however the lead point is most commonly a non-lymphoid solid lesion that causes the telescoping. Most commonly this lesion is a neoplasm [3]. Depending on which part of the bowel has the lead point and telescopes, intussusception can be classified into Enteric, Ileocolic and Colonic.

METHODS

All the diagnosed cases of adult intussusception in 2022 in a tertiary referral center were collected in a retrospective manner. The findings of ten patients between the ages of 20 and 70 years old were analyzed. In this series, four patients were females and six were males. Presenting symptoms, type of intussusception, course of management and the histopathology report of the resected segment of all cases were reviewed. Diagnosis was corroborated by CT scan in all cases.

RESULTS

Abdominal pain was a common symptom, present in all ten cases. Seven of the ten patients also complained of nausea. Three cases presented with constipation. One patient had diarrhea as the chief complaint. Six cases were Intussusception of the small bowel. One was ileocecal and three was colocolonic intussusception. One of the ten cases had no pathological lesion as the lead point and hence considered idiopathic. Of the six small bowel intussusceptions, two had malignant lead points. One was an adenocarcinoma of the jejunum and the other was metastatic deposits in the jejunum from a primary adenocarcinoma of the lungs. Of the three colocolonic intussusceptions, two were due to malignancies and one was benign. The adenocarcinoma in the ascending colon and the descending colon needed a right hemicolectomy and a left hemicolectomy respectively. Reduction wasn't attempted in any cases preoperatively. Eight of the ten cases were anastomosed after resection to restore the continuity of the bowel in the same setting. The other two cases had a stoma made because the patients were hemodynamically unstable. All the patients had an uneventful postoperative period and were discharged.

DISCUSSION

Intussusception is an event in which a portion of the bowel folds into the adjacent bowel along with its mesentery thereby narrowing the lumen of adjacent bowel. It is essentially a consequence of impaired peristalsis. If the lumen is narrowed enough, it results in obstruction. If the intussusception is severe enough, it compresses the mesenteric fold leading to ischemia and eventually bowel necrosis [2,6]. Small bowel was the most common site of intussusception in our series with six of the ten cases being enteric (sixty percentage) [3]. Intussusception is more common in the pediatric population wherein there is no identifiable lead point usually. It is most commonly due to lymphoid swelling secondary to a viral etiology or rotavirus vaccination. Making a diagnosis of intussusception in an adult patient requires a high degree of clinical suspicion since abdominal pain is the most common presenting complaint. it is most commonly secondary to a pathological lead point in 90% of the adult cases. Clinically, the patient presents with vague signs and symptoms. The presentation of intussusception can be ambiguous and makes the diagnosis difficult. The usual presenting complaints are abdominal pain, nausea, vomiting, abdominal distension, obstipation and bleeding per rectum. Abdominal pain was the most common of these and was observed in all the cases in our series [2]. A patient presenting with de novo obstruction with concomitant nausea and abdomen pain should suggest a high likelihood of intussusception. Rarely an abdominal mass may be palpable but when present and tender, it is highly significant [7]. Abdominal computed tomography (CT) appears to be the most sensitive diagnostic method in making a preoperative diagnosis of adult intussusception, especially in patients presenting with non-specific abdominal pain [8]. In rare cases, it can even indicate if the intussusception has resolved on its own. It is also helpful in discovering the pathological lesions that could potentially act as lead points [1]. In addition, the abdominal ultrasonography is less sensitive than the abdominal CT in identifying adult intussusception. In patients who have a palpable abdominal mass, it can still occasionally spot the telltale target sign with high sensitivity. In transverse and longitudinal views, the specific ultrasonography features are the target sign and the pseudo-kidney sign. The main limitations of abdominal ultrasonography are operator dependence and the Gas filled bowel obscuring the view. In

our series computed tomography of the abdomen revealed the Classic bowel in bowel appearance in all the cases and was one hundred percent sensitive in diagnosing intussusception. In the operating theater, laparoscopic or direct gross vision is frequently the only way to confirm intussusception. Due to the higher prevalence of malignancies in the adult intussusception, surgical intervention is most often mandatory [9]. therefore formal resections using suitable oncologic procedures are advised in patients with ileocolic, ileocecal, and colo-colic intussusception [8]. Risks associated with tumor manipulation include the spread of malignant cells. The type of surgery to be performed depends on the site, extent, and underlying cause of the intussusception as well as the viability of the intestine. There is some debate about whether resection should take place with or without reduction of the intussusception because improper reduction of a malignant lesion could result in seeding of malignant cells into the blood stream or the adjacent bowel segment [10]. All intussusceptions should be treated by direct resection, according to Weilbaecher et al. This advice was echoed by Eisen et al., who said that because colonic lesions are almost always primary adenocarcinomas, they shouldn't be reduced before resection [11]. Some writers recommend reducing small bowel intussusception before resection when certain conditions are met. Such treatment should be taken into consideration for young patients with confirmed benign lesions, especially those who are at risk for short bowel syndrome [11]. In Gastroduodenal and Coloanal intussusception, reduction of the intussusception can be performed safely. While performing the reduction of intussusception it is important to keep in mind that intussusceptum should be milked out of the intussuscipiens with gentle manual pressure. pulling on the intussusceptum can lead to iatrogenic perforation.

CONCLUSION

Surgeons should approach any case of abdominal pain with a broad differential and remain careful when assessing the acute abdomen. Adult intussusception should be taken into account in patients who arrive with concurrent abdominal pain and emesis, especially when there is a palpable abdominal mass with signs of intestinal obstruction without any risk factors like previous history of surgeries. The pathognomonic target sign, which distinguishes intussusception from other types of intestinal blockage, provides a strong positive predictive value on CT scan. It should be chosen on a case-by-case basis whether to reduce intussusception prior to resection.

A TABLE OF THE CASES OF INTUSSUSCEPTION AND THEIR PRESENTATION, HISTOPATHOLOGY AND MANAGEMENT

	Age	Sex	Presentation	type	Histopathology	surgery
case 1	44	M	Abdominal pain, nausea, constipation, abdominal distension	Colocolonic intussusception	Hamartomatous polyp of the transverse colon	segmental resection and anastomosis of transverse colon
case 2	65	F	Abdominal pain, nausea	Enteric Intussusception	jejunal adenocarcinoma	segmental resection and anastomosis of jejunum
case 3	77	F	Abdominal pain, nausea, abdominal distension	Enteric intussusception	metastatic deposits from adenocarcinoma lungs	segmental resection and double barrel jejunostomy
case 4	46	M	Abdominal pain, abdominal distension	Ileoceca	diffuse large B cell lymphoma of the caecum	right hemicolectomy
case 5	32	M	Abdominal pain, nausea and vomiting	Colocolonic intussusception	adenocarcinoma of the ascending colon	right hemicolectomy
case 6	44	F	Abdominal pain, abdominal distension	Enteric Intussusception	Hamartomatous polyp of the ileum	segmental resection and double barrel ileostomy
case 7	28	M	Abdominal pain, nausea	Enteric intussusception	Idiopathic	segmental resection and anastomosis of ileum
case 8	49	M	Abdominal pain, nausea and vomiting, constipation	Enteric intussusception	Jejunal lipoma	segmental resection and anastomosis of jejunum
case 9	36	M	Abdominal pain, Diarrhea	Enteric intussusception	ileal fibroma	segmental resection and anastomosis of ileum
cas	70	F	Abdominal pain, nausea and vomiting, constipation, abdominal distension	Colocolonic intussusception	Adenocarcinoma of the descending colon	left hemicolectomy

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