

POST OPERATIVE INTUSSUSCEPTION IN CHILDREN

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Abstract- Intussusception is a common pediatric surgical emergency, but rarely seen postoperatively as a cause of obstruction. This complication occurs after abdominal, thoracic, orthopaedic and urologic operations. Ileus and obstruction due to adhesion band are the common causes of postoperative obstruction, however, although intussusception is less frequent but can be serious. We have to consider this diagnosis in pediatric age group. This study was done between 1983-2000 among 10 patients with postoperative intussusception. Primary operation in most cases was diaphragmatic operation (40%), and abdominal esophageal operation (20%), most being performed under the age 3 years. The interval between primary operation and initiation of symptoms and signs was less than 5 days in 60% of cases and the most common type of intussusception was ileoileal in 80% of cases. Since classic signs and symptoms of intussusception are frequently absent and diagnostic tools are less helpful, high degree of suspicious is required for early diagnosis. Timely operation can give excellent results.

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Key Words: Intussusception, postoperative, children, obstruction

INTRODUCTION

Intussusception is a common pediatric surgical emergencies and commonly occurs by 4-12 months of age. Below 2 years it usually occurs as a primary disease (1) and is secondary after 2 years of age due to leading point. Intussusception has 1.5-6% incidence as a postoperative complication and 0.5-8% incidence after laparotomy (2). This complication has been reported after cardiac, thoracic or orthopedic operations (3). In postoperative period after the restoration of normal peristalsis, intussusception can present as early intestinal obstruction and may be missed because the other causes of obstruction such as paralytic ileus and, adhesion bands are more common (1). In postoperative intussusception, abdominal distention and increased bilious drainage from nasogastric tube are most common signs. Abdominal pain is less common. It presents within 8-11 days after operation while obstruction due to adhesion band occurs usually after 2 weeks (2). Correct diagnosis is based on barium enema and contrast study of small intestine. Small intestine is the most common site of involvement and the most common form is ileoileal,

which can usually be reduced without resection (1). This form of intussusception also is reported in upper jejunum of infant after herniorrhaphy without opening the hernia sac and in middle portion of ileum after pullthrough operation for Hirschsprung's disease (4), after colostomy in premature neonate (5) and after laparotomy for peritonitis due to appendicitis (5). Cecocolic intussusception after appendectomy also was reported and polypoid dimpling of colon and mobility of ileocolic mesentrium and appendiceal stump reported as possible causes (6). Factors that may be related to postoperative intussusception are altered peristalsis and vigorous intestinal manipulation, intestinal injury, foreign body, or neurogenic factors (2). However this form of intussusception may occur after many forms of operations such as urologic procedures (7,8) and operations for abdominal mass including Wilm's tumor (9) and neuroblastoma (10); thus due to the similarity of symptoms and signs to common complications after cancer surgery and chemotherapy (11) and the absence of classic triad of intussusception (abdominal pain, palpable mass and bloody feces) in most cases (12), high degree of suspicion is needed for diagnosis. Although the radiologic studies and sonography are useful for diagnosis, correct diagnosis is usually made during laparotomy and reduction is possible only with surgery; and thus barium enema is not recommended. With early diagnosis and proper management of this complication complete recovery is achieved.

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MATERIALS AND METHODS

The study was done retrospectively on patients admitted for intussusception in pediatric surgery wards of Amirkabir, Bahramy, and Children Medical Center hospitals and had secondary operation due to intestinal obstruction in postoperative period during 1983–2000.

A total of 600 pediatric operations due to intussusception were performed during 17 years period. Ten patients were diagnosed as secondary postoperative intussusception. These patients were evaluated for indices such as incidence of age and sex, type of primary operation, time between primary operation and beginning of symptoms, type of intussusception and type of operative management. These patients had 2 years follow-up.

RESULTS

In this study, in the evaluation of 600 patients operated for intussusception, the incidence of postoperative intussusception was 1.6%. All of them had symptoms and signs of intestinal obstruction. 8 patients (80%) were male and 2(20%) were female. 4 patients (40%) were <1 year of age, 2(20%) between 1-2 years, 2(20%) between 2-3 years, and 2(20%)>3 years. In all patients laparotomy was done (table. 1). The interval between first and second operation was <5 days in six patients and 5-10 days in four patients. Plain abdominal x-ray in all patients revealed signs

for intestinal obstruction. Contrast study was done in 2 patients that revealed partial intestinal obstruction. 2 patients had sonography and diagnosis of intussusception was made common in one case. The most symptoms and signs of obstruction were bilious vomiting or bilious drainage from gastric tube (100%). Hematochesia was seen in 2 patients. The time between beginning of signs of obstruction and second operation was 1-2 days in 3(30%), 3-4 days in 4(40%), and more than 4 days in 3(30%) patients.

The most common forms of postoperative intussusception was ileoileal which occurred in 8 patients (80%). Jejunojejunal occurred in one (10%), and combined jejunojejunal and ileocolic was seen in another patient (10%). Reduction without resection was done in 9(90%) patients and one case (10%) required resection.

DISCUSSION

Postoperative intussusception usually occurs between age 4 month to 12 years (13), but may occur in up to 18 years old (14). In this study 60% of patients were below 2 years of age which meant, suggestion of intussusceptions together with adhesion band as causes of obstruction in this age group. In review of literature one of the most common complications after operation for traumatic diaphragmatic injury was intussusceptions (15) and rate of intussusceptions after lads operation for malrotation was about 3.1% (16).

Table 1. Diagnosis and type of operation

	Sex	Age	Diagnosis	Type of operation
1	Male	2.5 yr	GER*, Esoph. Stricture	Thoracoabdominal,colon patch
2	Female	2 yr	Abdominal mass, lipoma	Laparotomy, resection
3	Male	5 yr	Adhesion band after hiatal hernia operation	Laparotomy, adhesiolysis
4	Male	20 mo	UDT**, bowel laceration	Laparotomy,orchiopexy, bowel repair
5	Male	1 yr	Diaphragmatic hernia	Laparotomy, repair
6	Male	7mo	Diaphragmatic hernia	Laparotomy, repair
7	Male	45 day	Diaphragmatic eventration	Thoracotomy, repair
8	Male	8mo	Esoph. Atresia, Meckel’s Diverticula	Thoracotomy,Laparotomy, colon by pass
9	Male	6mo	GER	Laparotomy, fundoplication
10	Female	9 yr	Abdominal trauma	Laparotomy, splenectomy

*GER: Gastroesophageal reflux, **UDT: Undescended testis

In this study diaphragmatic operations were most common (40%) and operation for abdominal esophagus and gastroesophageal reflux were second and third most frequent operations. The time between first operation and obstruction was less than 10 days in all cases and in most patients occurred in < 5 day. In one study, 16 years of postoperative intussusceptions were reviewed and the time between first operation and obstruction was reported 5 days (17) and in another study reported to be 3-8 days (18). However, if in 2 weeks after operation, symptoms and signs of intestinal obstruction develop, intussusception must be suspected and diagnosis confirmed with paraclinical studies (19). Plain radiography usually reveal only signs of intestinal obstruction but sonography may help. CT scan may be used and some others use small bowel series, but this method can not confirm jejunojejunal intussusception(20). However definite diagnosis may be difficult and can only be made on laparotomy (21). In this study operative diagnosis in most cases were ileoileal (80%), and jejunojejunal and ileocolic occurred with decreased incidence. All patients recovered except one case that died due to sepsis, and we conclude that early diagnosis of this complication and prompt surgical correction gives excellent results.

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