



SURGICAL INDICATION IN TRANSIENT OR RECURRENT INTUSSUSCEPTION IN PAEDIATRIC PATIENTS – A DILEMMA FOR MANAGEMENT

Surgery

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ABSTRACT

Background – Intussusception is one of the most common abdominal emergencies dealt in early childhood by Paediatric Surgeons. We paediatric surgeon dealt various abdominal emergency in early childhood, Intussusception is the one of them. The decision to operate on patients of intussusception may sometimes be difficult, such as when the patients have transient intussusception without features of intestinal obstruction, like abdominal distension. Decision for surgery in patients of intussusception is very difficult in some circumstances like patient have complaint of abdominal pain only or transient intussusception. No other sign and symptoms of intestinal obstruction, abdominal distention. So, we did this study in such circumstances. **Aims and objectives** - to study the patients of recurrent intussusception, transient intussusception or newly diagnosed intussusception without intestinal obstruction, who had abdominal pain either off and on or continuous for long time. **Methods** – this is a retrospective study. It was conducted between January 2020 to December 2020 at Department of Paediatric surgery, Sir Padampat Mother and Child health institute, S.M.S. Medical College, Jaipur. **Conclusion** - Patient of persistent abdominal pain due to recurrent transient intussusception with or without classical triad is the matter of surgical intervention in paediatric patients.

KEYWORDS

INTRODUCTION –

intussusception is an emergency condition which is commonly dealt by paediatric surgeons. It is defined as telescoping of proximal bowel in distal bowel [1]. After reading multiple English literatures we found that Paul Barrette of Amsterdam described the intestinal intussusception first in 1674 [2]. Sir Jonathan Hutchinson did the first successful surgery of intussusception in paediatric patient in 1871 [3]. Samuel Mitchell in 1836 reported first case of paediatric intussusception reduction by air enema which was published in 1838. Per operative reduction of intussusception first in paediatric patient reported in 1871 by Sir Jonathan Hutchinson but in adult patient reported earlier in 1831 by Wilson [1,3]. Paediatric patients can presents with classical complaints of pain abdomen, vomiting, and red currant jelly stool [4]. Early diagnosis of patients with intussusception can reduce the morbidity [5]. But, decision of surgery is challenging for paediatric surgeon in cases of transient intussusception, recurrent intussusception without any sign and symptom of intestinal obstruction. In these circumstances dilemma is always present about conservative management or surgical intervention.

MATERIAL AND METHODS –

This is a retrospective single institutional study conducted between January 2020 and December 2020 at Department of Paediatric surgery, Sir Padampat Mother and Child health institute, S.M.S. Medical

College, Jaipur. Six patients were found suitable according to inclusion criteria. All patients presenting with complaints of colicky abdominal pain with some having complaints of bleeding per rectum and some having complaints of vomiting, but none of them having complaints of abdominal distention, between January 2020 to January 2021, were reviewed retrospectively.

Following data were collected sincerely for this study (a) age of Patient at presentation of sign and symptoms, (b) complete medical history including sign and symptoms, physical appearance and finding at presentation, whole abdomen examination findings, (c) radiological investigations like x-ray abdomen, USG abdomen and computed tomography.

INCLUSION CRITERIA –

1. Patients of recurrent intussusception manage conservatively at initial management. But finally taken for surgery. Patients of recurrent intussusception with lead points on ultrasound of the abdomen, initially managed conservatively.
2. Patients of transient intussusception with persistent abdominal pain.

EXCLUSION CRITERIA –

1. Cases of intussusception with features of intestinal obstruction.
2. Coeliac disease patients having transient intussusception.

Table 1: Summary of the patients in this study

S. No.	Age	Gender	Clinical Presentation	Radiological findings	Surgical procedure	Histopathological report
1	12 yr.	M	Recurrent abdominal pain and vomiting, bleeding per rectum	Colo-colic intussusception, 4x4.5cm. with bowel thickening as the lead point.	manually reduction of colo-colic intussusception, resection of lump in the upper part of the descending colon with 3.5 centimeters margin and end to end anastomosis	Non-Hodgkin's lymphoma
2	3 yr.	F	Recurrent abdominal pain and vomiting	colo-colic intussusception with enlarged lymph node ?Lymphoma	Reduction of ileo-caecal intussusception with ileo-cecal resection with ileo-ascending anastomosis	high grade Non-Hodgkin lymphoma

3	2.5 yr.	F	colicky abdominal pain for five to six days with no complaints of abdominal distention	Intussusception of size 2.2x2.4 cm. ileocecal cyst. On CT, well defined hypodense cystic lesion with thick walls and few foci of calcification at the site of intussusception. walls - irregular, few hyperdense foci within the lesion measuring 3.2x3.1x3.8 cm.	Ileocaecal intussusception with ileo-caecal duplication cyst. Ileo-caecal resection followed by ileo-ascending colon anastomosis	Ileo-caecal duplication cyst.
4	3 yr.	F	colicky abdominal pain for five to six days with no complaints of abdominal distention	Ileo-caecal intussusception of size 2.5x2.7 cm. with cystic lesion in the bowel.	Ileo-caecal intussusception - reduced manually. Mesenteric cyst in the terminal ileum 3 cm. from the ileo-caecal junction, for which ileo-caecal resection and ileo-ascending anastomosis was done	Mesenteric cyst
5	7 yr.	M	colicky abdominal pain for five to six days with no complaints of abdominal distention	Ileo-colic intussusception with mesenteric cyst	Manual reduction of ileo-colic intussusception. Mesenteric cyst in the terminal ileum was noted for which ileo-caecal resection anastomosis was done	Mesenteric cyst
6	12 yr.	M	Recurrent abnormal pain since two years with episodes of bleeding, followed by severe colicky abdominal pain. oral mucosal and lip pigmentation noted post-operatively	Initially, transient intussusception was noted but few necrotic areas were visualized in the jejunum. Following re-admission, long segment of jejuno-jejunal intussusception with 20 x 10 mm lead point, likely lymph node. CT scan - long jejuno-jejunal intussusception with 19 x 18 x 21 mm necrotic region in the intussusception.	Ileo-colic intussusception - manually reduced easily. Two regions of thickening. One in the mid-jejunum, and the other 5 cm proximal to the ileo-caecal junction. For the mid-jejunal region thickening, resection, followed by end to end anastomosis. For the lesion 5 cm proximal to the ileo-caecal junction, wedge resection of intestine involving the lesion was done	Hyperplastic polyp - Peutz-Jegher polyp with mild atypia.

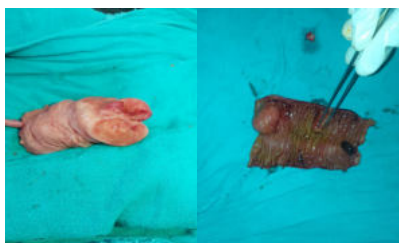


Figure 1- Resected Ileo-caecal intussusception containing duplication cyst.

Figure 2 – Specimen of resected jejunum containing polyps.

RESULTS-

Non-Hodgkin's lymphomas were found in two cases. There was colonic intussusception with enlarged multiple mesenteric lymph node found intraoperatively. These patients were had complaint of recurrent pain abdomen. Old ultrasound reports showed transient intussusception. They were managed conservatively and improved. But, they were readmitted with same complaints.

Mesenteric cyst found in two cases. Both these patients were presented with colicky abdominal pain on and off. There was no history of red currant jelly stool. Abdominal features were not related to obstruction. No clinical history was there which suggest intestinal obstruction.

Duplication cyst was found in 2 and ½ year old female child. Transient ileo-cecal intussusception was present of 2.2x2.4 cm. CT report showed calcification foci.

A twelve year old male child admitted with complaint of recurrent pain abdomen and blood in stool on and off pattern since two years. Ultrasound showed transient jejunal intussusception. He had history of multiple admissions for same complaint. Intraoperative we found intussusception and palpable polyp like swelling intra luminal in jejunum. Segment of jejunum containing polyp was resected and jejuno-jejunal anastomosis was done. Histopathology report showed hamartomatous polyp indicating Peutz-Jegher syndrome.

DISCUSSION-

Intussusception is the leading cause of intestinal obstruction in young children [6,7]. Intestinal intussusception of small segment length or transient resolved spontaneously with conservative management.

Venous congestion may occur, if the intussusception is not relieved early. This may lead hampered blood supply to segment of intussusception and followed by bowel ischaemia and perforation. Overall these circumstances without treatment will be lethal for the patients [7].

Sudden onset of intermittent, crampy abdominal pain associated with “red currant Jelly” stools and a palpable mass on physical examination are the classical features of patients (infant or young child) with intestinal intussusception. Although, this triad seen in less than 1/4 of the children [8].

Etiology in 90% (approximately) of the patients was unknown named as idiopathic intussusception. They involves the lack of a demonstrable lead point, usually occurs during infancy [9,10].

Older children, age more than five years, are more likely to have a pathological lead point. The most common lead point is a meckel's diverticulum, followed by polyps and duplication cysts. Other benign lead points include the appendix, haemangiomas, carcinoid tumors, foreign bodies, ectopic pancreas or gastric mucosa, hamartomas from Peutz-Jegher's syndrome, and lipomas [11]. Meticulous examination and family history is important in recurrent intussusception to rule out Peutz-Jegher's syndrome. Prasad R. reported a case of jejuno-jejunal intussusception secondary to Peutz-Jegher's polyp in 7 years old male child. His father expired due to similar complaints like pain abdomen on and off pattern [12].

Rarely intestinal malignancy can causes lead point in intussusception. But, relative incidence increases with age. Small bowel lymphomas and other bowel tumors can cause intussusception [13]. In this study we found non-Hodgkin's lymphoma in two patients as a lead point. Manual reduction of intussusception was done in both. But abnormal thickening of bowel was there. Resection of that segment of bowel was done. Histopathology of resected bowel showed non-Hodgkin's lymphoma.

These children experienced sudden abdominal pain, stiffen themselves, pull the legs up to the abdomen and episode of vomiting. They become comfortable between the episodes of the attacks. Bowel movements become sluggish and stop as the intestinal obstruction progresses. This associated with bilious vomiting and increasing abdominal distention. Patients may pass blood tinged stools, due to impending ischaemia. Ischaemia causes mucosal sloughing and compression of mucous glands, leading to the evacuation of dark, red mucoid clots or “red currant Jelly” stools [14].

USG abdomen can be used for evaluation of intussusception, this was first described in 1977. Since then, USG abdomen was adopted most of the institution as a screening tool because of the lack of radiation exposure. Pathological lead points can also identify by it at lower cost [15,16].

The characteristic findings found in ultrasound are “target sign” which is the transverse view of intussusception and “pseudo-kidney sign” on longitudinal section [17].

Computed tomography (CT) or MRI are not routinely used in the evaluation of a patient with intussusception although either may confirm the diagnosis or pathological cause of the intussusception such as malignancy (lymphoma). Non-operative management (reduction) is the first line of treatment. We practiced pneumatic reduction under guidance of stethoscope and repeat ultrasonography was done to confirm for reduction [18]. Surgery is required for unsuccessful non-operative reduction, having features of peritonitis, presence of the lead point or x-ray abdomen showed pneumoperitoneum.

CONCLUSION -

Patients with colicky abdominal pain of long duration or with recurrent pain, with no signs of abdominal distension and transient intussusceptions should be evaluated carefully. Patients with colicky abdominal pain of long duration, that is more than a week to months to years, with no signs and symptoms of abdominal distention, peritonitis, small intussusceptions, or transient intussusception on ultrasound should be evaluated carefully.

An ultrasound by a good radiologist can detect the pathological lead point. Following this, the surgeon can decide the need for surgical exploration rather than non-surgical treatment to identify the pathological cause that is the lead point of the intussusception. A good radiologist can thus help the surgeons take the decision whether the patient requires surgical or non-surgical management for the intussusception. Older children with intussusception beyond infancy should be evaluated properly by the radiological Department for lead points.

Patient of persistent abdominal pain due to recurrent transient intussusception with or without classical triad is the matter of surgical intervention in paediatric patients.

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