

# RETROSPECTIVE ANALYSIS OF CLINICAL PRESENTATION OF CHILDREN WITH DIAGNOSED INTUSSUSCEPTION

Muhammad Jehangir Khan, Kifayat Khan, Musa Kaleem, Muhammad Younas Khan,  
Muhammad Ayub Khan, Syed Asad Maroof, Muhammad Tariq Khan,  
Muhammad Uzair, Muhammad Ghani

Department of Paediatric Surgery,  
Postgraduate Medical Institute, Lady Reading Hospital, Peshawar – Pakistan

## ABSTRACT

**Objective:** To know the presenting clinical features of intussusception in children up-to the age of twelve years.

**Material and Methods:** The study was conducted at the Department of Paediatric Surgery, Post-Graduate Medical Institute, Lady Reading Hospital, Peshawar, over a period of 18 months. A total of 71 patients with diagnosed intussusception were included. The relevant data, both pre-operative and post-operative, of children who were operated for intestinal obstruction and finally turned out to be suffering from intussusception, was fed into a pre-designed proforma and the information so obtained was analyzed according to objectives of the study.

**Results:** The common presenting features were colicky abdominal pain in 70 (98.59%) cases, vomiting in 67 (94.36%) cases, abdominal distension in 67 (94.36%) cases, constipation in 63 (88.73%) cases, bleeding per rectum in 61 (85.91%) cases, palpable mass per abdomen in 56 (78.87%) cases and fever in 18 (25.35%) cases. In 11 (15.49%) cases there was a mass palpable per digital rectal examination and 05 (07.04%) patients had diarrhoea on presentation.

**Conclusions:** Colicky abdominal pain, vomiting, abdominal distention, constipation, bleeding per rectum, palpable mass per abdomen are the commonest presenting clinical features of intussusception in children.

**Key Words:** Intussusception, Children, Presenting Features.

## INTRODUCTION

Intussusception is defined, as the telescoping of a part of gut into its adjacent segment. In intussusception the upper part of the bowel, the intussusceptum, invaginates into the lower part, the intussusceptum, dragging its mesentery along with it into the enveloping intestinal loop. Constriction of the mesentery obstructs venous return, followed by engorgement of the intussusceptum, with oedema and bleeding from its mucosa, leading to a bloody stool, some times containing mucus, called the “currant jelly” stool<sup>1</sup>. It is the commonest cause of small bowel obstruction in children between the ages of 2 months and 5 years. 92% of children are below the age of 1 year at the time of the intussusception episode, 51% are 6-11 months old and peak incidence occurs at 6 months of age, with a male to female ratio of 1.3:1<sup>2</sup>. Some researchers have reported 50% of cases occurring in the second year

of life<sup>3</sup>. No clear seasonal variations have been observed<sup>2</sup> though a slight peak during the cool season has been reported<sup>4</sup>. All children present with vomiting, bloody diarrhoea and colicky abdominal pain.<sup>5</sup> The vast majority of intussusception, termed “idiopathic”, arise in the ileum because of lymphoid hyperplasia of Peyer's patches, suggestive of response to infection. An infective etiology is further suggested by the presence, in about 50% of children with intussusception, of viral shedding in the stools, together with demonstration of virus particles in pathologic specimens<sup>6</sup>. A recent study has reported ileo-colic to be the commonest variety of intussusception followed by colo-colic and ileo-ileal varieties in descending order<sup>7</sup>. Ultrasound-guided hydrostatic reduction is a safe, simple and effective method for treatment of intussusception in children<sup>8</sup> in properly selected cases, with surgical management remaining the mainstay in

## PRESENTING FEATURE IN CHILDREN WITH DIAGNOSED INTUSSUSCEPTION

Presenting feature	Frequency (n=71)	%age
Colicky abdominal pain	70	98.59
Vomiting	67	94.36
Abdominal distension	67	94.36
Constipation	63	88.73
Bleeding per rectum	61	85.91
Palpable mass per abdomen	56	78.87
Fever	18	25.35
Mass palpable per digital rectal examination	11	15.49
Diarrhoea	05	07.04

Table 1

underdeveloped countries where the above-mentioned facilities are not available.

## MATERIAL AND METHODS

The study was conducted at the Department of Paediatric Surgery, Post-Graduate Medical Institute, Lady Reading Hospital, Peshawar, over a period of 18 months. With pre-determined objectives and parameters of the study a standard proforma containing full relevant medical information of the patient was designed. The proforma was kept up-to-date till the patient left the hospital. The signs and symptoms were recorded in the prescribed proforma from the time the patient was admitted till the diagnosis of intussusception was made. A total of 71 children were studied. Similar signs and symptoms were grouped together as an entity. The signs and symptoms observed or reported by the child and his parents were recorded in chronological order.

## RESULTS

This study included 71 patients, ranging in age from 3 months to 12 years. Out of 71 patients, 55(77.45%) were male and 16(22.55%) were female children and male to female ratio was 3.4:1. The common presenting features were colicky abdominal pain in 70 (98.59%) cases, vomiting in 67 (94.36%) cases, abdominal distension in 67 (94.36%) cases, constipation in 63 (88.73%) cases, bleeding per rectum in 61 (85.91%) cases, palpable mass per abdomen in 56 (78.87%) cases and fever in 18 (25.35%) cases (table 1). Out of 71 patients, 58 (81.69%) had ileo-colic, 4(5.6%) ileo-ileal, 2 (2.81%) jejuno-jejunal, 2(2.81%) ceco-colic, 2(2.81%) colo-colic, 1(1.40%) ileo-ileo-colic and 2(2.81%) ileo-ceco-colic intussusception. Two patients who had intussusception prolapsing per anum were of ileo-colic variety.

## DISCUSSION

The commonest complaint observed in this study was colicky abdominal pain (98.59%) followed by vomiting and abdominal distension (94.36% each). Abdus SKG<sup>9</sup> in their study involving 130 patients reported the same complaints in the same sequence but with lower rates i.e 88%, 82% & 88% respectively. The results of Abdus SKG show that the same complaints are the commonest in ours as well as their study. The incidence of bleeding per rectum is 85.91% in our study but 54% in their study. The possible explanation for the difference in the results can be that the patients in their study presented earlier than patients included in our study thus preventing engorgement of the intussusceptum and consequent bleeding. Similar order of signs and symptoms was reported by Reinjen JAM et al<sup>10</sup>, whose study also comprised of 108 patients with age ranging from 05 to 15 years. Abdominal mass was felt in 78.08% of our patients and in 50%-85 % patients in studies reported by Julie EB et al<sup>11</sup>, Hutchinson et al<sup>12</sup> and Ein SH et al<sup>13</sup>. Syed HM et al<sup>14</sup> have reported vomiting abdominal pain/excessive crying, abdominal distension, passage of blood and mucus in stool and a palpable abdominal mass to be commonest presenting features. Thus colicky abdominal pain, vomiting and abdominal distension emerge as the most significant signs, in the diagnosis of a suspected case of intussusception especially when coupled with other signs such as palpable mass per digital rectal examination, prolapsing mass per anum and palpable sausage-shaped mass per abdomen. Bleeding per rectum indicates jeopardized blood supply to the intussusceptum and warrants immediate curative intervention. Similarly depending upon the site of the mass felt per abdomen carries significant prognostic value, the more distal is the mass in the colon, the greater is the chance for blood supply to the intussusceptum get strangulated and cause gangrene of the intussusceptum or perforation of the intussusceptum. Presenting clinical features and occurrence of sequence of events in the signs and symptoms of intussusception guide one to early diagnosis and decision for early intervention to salvage the involved gut and the life of the child. In today's era of advanced diagnostic paraphernalia ultrasound<sup>15</sup> and CT Scan<sup>16</sup> have proved more promising in the diagnosis of intussusception, in addition to the already available tools of contrast (including air) enemas.<sup>17</sup> But so far third world countries where these facilities are not available, there is no reliable prediction model based on presenting clinical features that can accurately identify all patients with intussusception. An attempt was made by Klein EJ et al<sup>18</sup> whose

predictors of intussusception in their univariate study analysis included history of vomiting ( $p=0.02$ ), abdominal pain ( $p=0.1$ ), rectal bleeding ( $p=0.003$ ), physical examination findings of abdominal mass ( $p<0.001$ ), abdominal tenderness ( $p=0.02$ ) and guaic positive stool ( $p=0.004$ ) and plain radiograph findings of the absence of stool in the ascending colon ( $p<0.05$ ) but they were unable to develop a prediction model that would reliably identify all patients with the diagnosis of intussusception. Therefore, a prospective study is required to develop a prediction model for diagnosis of intussusception, based on clinical features, that can be workable in third world countries, where even the conventional imaging diagnostic facilities are not available.

## CONCLUSIONS

Colicky abdominal pain, vomiting, abdominal distention, constipation, bleeding per rectum, palpable mass per abdomen are the commonest presenting clinical features and when coupled with other signs and symptoms of intestinal obstruction hint at the diagnosis of intussusception unless proved otherwise. A prospective study is required to develop a prediction model for diagnosis of intussusception, based on clinical features.

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### Address for Correspondence:

**Dr. Muhammad Jehangir Khan**

Vill & P.O. Taru Jabba,  
Teh; & Distt: Nowshera – Pakistan.