

Childhood Intussusception

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In a retrospective study, 38 patients with intussusception presenting to paediatric surgical emergency were studied. The objective was to review the management of childhood intussusception and identify factors that require attention for improved outcome. Out of 38 children 26 were males and 12 were females. Age ranged from 2 months to 10 years. Presenting features were mainly vomiting, abdominal pain/excessive crying, abdominal distension, passage of blood and mucus in the stool and a palpable abdominal mass. Duration of symptoms i.e., time period lapsing between the onset of symptoms and seeking the treatment was < 24 hours in 21.3% cases, 24-72 hours in 31.5% , > 72 hours in 39.4% and > 1 week in 7.8% cases. Ileo-colic intussusception was found in 76% cases, colo-colic in 16% and ileo-ileal in 8% cases. Manual reduction was successful in 34% cases and resection of the gut had to be done in 66% cases. Delay in diagnosis was associated with increased morbidity and mortality. The authors recommend that prompt treatment is the key to reduce the morbidity and mortality.

Key words: Intussusception, sepsis, intestinal obstruction

Intussusception is a common paediatric surgical problem. It is one of the leading causes of bowel obstruction in early infancy and childhood¹. It classically presents with abdominal pain, vomiting, currant jelly stools and a sausage shaped abdominal mass². High morbidity and mortality appears to be related to the long interval between onset of symptoms and commencement of definitive treatment³. This study highlights our experience of intussusception with special emphasis to its incidence, mode of presentation, time period lapsing between the appearance of symptoms and reaching the diagnosis, management and its outcome. Satisfactory management of intussusception requires early diagnosis and timely intervention⁴.

Patients and methods:

In a retrospective study, all patients with intussusception presenting to paediatric surgery emergency from January 2000 to December 2001 were reviewed. Demographic factors evaluated include age, sex, months of presentation to assess the seasonal variation, clinical features, time taken to diagnose, methods of diagnosis, management and outcome. A total of 38 cases of intussusception were diagnosed on clinical grounds. All underwent basic investigations like routine blood, urine examination, serum electrolytes estimation and plain radiographic examination of abdomen in standing posture. All were resuscitated before surgery. Combinations of different antibiotics were started. Laparotomy was performed mainly through right transverse incision. Operative procedures performed were manual reduction of intussusception, resection and end to end anastomosis, closure of perforations and excision of lead points etc. Facilities for barium enema reduction were not available.

Results

The total number of cases during study period was 38. Out of these 26(68.42%) were males and 12(31.58%) were females with a ratio of 2:1(Fig-1). Twenty five (65.7%) cases presented within first year of age. Thirteen (34.21%) were >1 year of age, with age ranging from 2 months to 10 years. The major modes of presentation were passage of blood and mucus per rectum in 24 (63.15%), abdominal pain / excessive crying in 20(52.63%), vomiting in 17 (44.73%) and abdominal distension in 25(65.78%) cases. Abdominal mass was palpable in 15 cases (39.4%). History of preceding diarrhoea was present in 5 (13%) cases. As far as duration of symptoms is concerned, 8 (21%) patients presented within 24 hours, 12 (31.5%) between 24-72 hours, 15 (39.47%) >72 hours to 1 week and 3(7.89%) patients presented with more than one week's duration of symptoms (Fig-2). Seventeen (44.7%) patients presented during the months of extreme heat i.e., May to August, whereas 15 (39.4%) came in the months of winter i.e., November to February. Only 15.7% cases were distributed in the rest of the period of the year. Twenty five (65.7%) of these patients were referred to from paediatric medical units of different hospitals. In all cases diagnosis was made clinically and confirmed at operation. According to operative findings, most common type of intussusception was ileocolic (76%) followed by colocolic (16%) and ileoileal (8%) respectively(Fig-3). Gangrenous gut was found in 15(44.12%) patients and perforation of gut occurred in 4(10.5%) cases while trying to reduce the intussusception. These perforations were closed separately from the area of resection as they occurred distal to the area of resection and anastomosis. Meckel's diverticulum as lead point was found in 2 (5.2%), and intestinal polyp in 1 (2.6%) case. In 13(34%) patients intussusception was reduced manually, while in 25 (66%) patients repair, resection and anastomosis was to be performed.

Regarding complications in the series, wound infection was found in 6(15.7%) cases, pneumonia occurred in 3 (7.8%) and sepsis in 2 (5.2%) patients. One (2.6%) patient of advanced septicemia died (Fig-4).

Fig. 1 Male female ratio

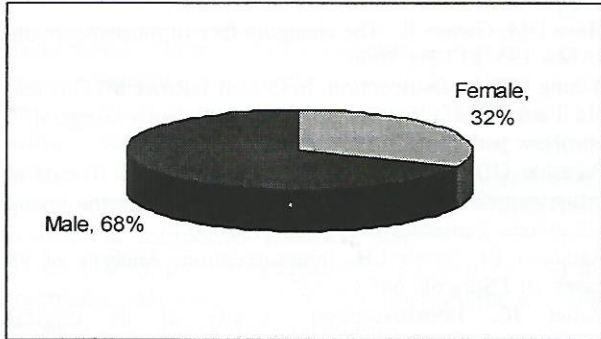


Fig. 2: Duration of symptoms

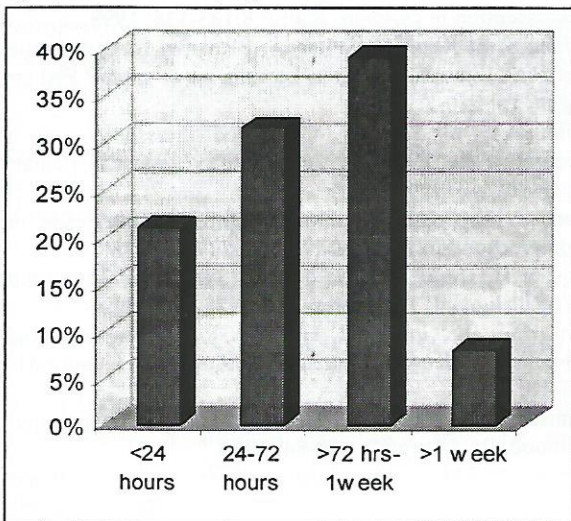


Fig. 3: Type of intussusception

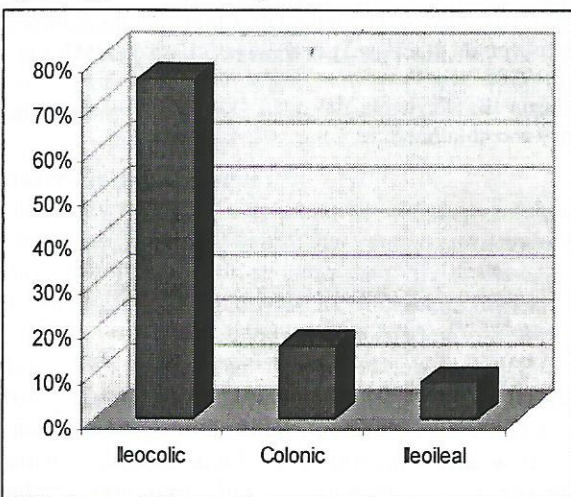
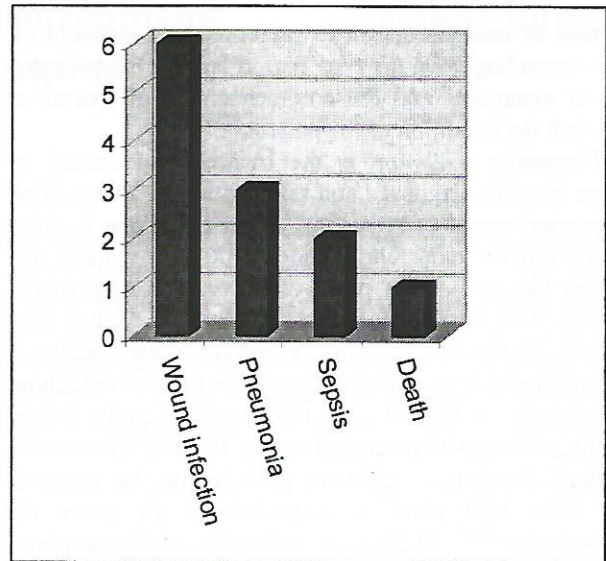


Fig. 4: Postoperative complications



Discussion:

Intussusception in children largely occurs in the first year of life most commonly between 5 and 10 months of age. Two thirds of all children with intussusception are younger than one year⁵. Male preponderance and age incidence as reported in most series is close to that of present study. Two peaks of seasonal incidence in the present study are probably due to the time of maximal gastroenteritis in summer and respiratory tract infections in winter. A few studies show no consistent seasonal association⁶.

Cardinal features of intussusception are vomiting, abdominal pain/ excessive crying, abdominal distension passage of blood and mucus in the stool and palpation of an abdominal mass. All of them were present in majority of the patients in the present series. Classical triad of vomiting, pain and bleeding per rectum was present in only 20% cases reported by Raudkivi and Smith⁷ whereas distension was found in only 17% cases of series reported by Pollet⁸. Excessive distension in our series is due to late presentation of the patients. Inability to feel a mass in a few cases is also due to marked abdominal distension. Excessive distension is the single most important sign that forces the parents to bring their child to the hospital³. Ultrasound scan is the most useful diagnostic investigation for intussusception². However this facility is not available during most of the time in the present emergency set up of our unit. Majority of the cases were therefore diagnosed on clinical grounds.

Delay in reaching the diagnosis was the major factor responsible for late commencement of definitive treatment. This delay was either due to late presentation of the patients or inability to recognize the condition by the attending physician. Delay in the commencement of the treatment adversely affects the mode of treatment and its outcome. Shock, septicemia, gangrene are the main sequel

of delay. Treatment varies from simple non operative reduction of intussusception to resection of a segment of bowel depending upon the time period lapsing between the onset of symptoms and the commencement of treatment along with the condition of the patient.

Pneumatic reduction is the treatment of choice in patients who are diagnosed and referred within 24 hours of the commencement of symptoms⁹. This technique is safer when performed under ultra sound guide as it reduces the radiation hazards¹⁰. It is more effective than hydrostatic reduction with barium or saline¹¹ which are other non operative therapeutic options. However these facilities were not available in our unit. Operative manual reduction was successful in 34% of cases in the present study. These were the patients who presented within 48 hours of onset of symptoms. Operative treatment also has to be adopted when some lead point is suspected as the cause of intussusception^{12,13}. More over colo-colic intussusception is relatively easily amenable to non operative reduction than ileo-colic intussusception¹⁴. Intestinal resection rate of 75% and mortality of 17% was reported by Mirza and Hameed in patients presenting after more than 72 hours of onset of symptoms. Similar results of resection of 44% have been shown by Thomas and mortality of 17.2% by Dennison and Shaker in patients with symptoms of more than 3 days duration^{15,16}. Resection was performed in 66% cases in the present study. Majority of them presented after 72 hours of onset of symptoms. There are many reasons for delay in seeking the definite treatment. It may be lack of ambulatory facilities, poor socioeconomic conditions, initial malteartment given by the quacks, superstitions or inability to recognize the condition by the physician. Improved results of treatment have followed recent technological developments like ultrasonological imaging and pneumatic reduction¹⁷. Although mortality from intussusception has recently declined, there is still ample opportunity for improved management^{18,19}.

Early establishment of the diagnosis and prompt treatment is the key to improve the outcome. Delay is the single most important cause of morbidity and mortality in cases of intussusception that can be prevented by improving referring health facilities and socioeconomic conditions.

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