

PATTERN AND OUTCOME OF CHILDHOOD INTESTINAL OBSTRUCTION DUE TO INTUSSUSCEPTION AT OMDURMAN MILITARY HOSPITAL

Omdurman Askeri Hastanesinde karşılaşılan çocukluk çağı barsak tıkanıklıklarının klinik formları ve seyri

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ABSTRACT

Intestinal obstruction due to intussusception is a common cause of paediatric surgical emergency. A prospective study of consequence cases with intussusception who managed from January 2009 to May 2011 at Omdurman Military Hospital in Khartoum, Sudan was done to examine the pattern of intussusceptions in children and the management outcome.

Twenty eight cases were seen over the study period with an age range of 3 months to 13 years with mean \pm SD of 1.97 ± 2.74 years. Majority (64.3%) were less than one year of age. 71.4% of presented late. The classic triad of symptoms was seen in 28.6% cases. Ileocecal and colocolic intussusceptions were observed in 19 patients (67.9%), and 4 patients (14.3%) respectively. A leading point was found in 8 cases only. 21.4% of patients were treated by other physician as a case of gastroenteritis before been diagnosed as intussusceptions.

A high index of suspicion leading to an early detection and facilitating an appropriate management.

Key words: Childhood, intussusception, pattern, management.

ÖZET

İntussusepsiyonlara bağlı barsak tıkanıklıkları çocukluk çağı acil cerrahi hastalıklarının önemli bir sebebidir. Ocak 2009 ile Mayıs 2011 tarihleri arasında Sudan / Hartum'daki Omdurman Askeri Hastanesine gelen intussusepsiyonlu çocuk hastalardaki sebepler ve hastaların klinik seyirleri prospektif olarak değerlendirildi.

Yaşları 3 ay ile 13 yıl arasında değişen toplam 28 hastada (Ortalama \pm SD, 1.97 ± 2.74 yıl), bu süre içerisinde izlendi. Hastaların çoğunluğu (%64.3) bir yaşından küçüktü. Vakaların %71.4'ü gecikmiş olarak gelmişlerdi. Olguların %28.62'sinde klasik semptom triadı mevcuttu. Olguların 19'unda (%67.9) ileoçekal ve 4'ünde (%14.3) kolokolik intussusepsiyon vardı. Olguların 8'inin (%21.4) hastaneye gelmeden önce başka hekimler tarafından gastroenterit öntanısı ile takip edilmiş olduğu saptandı.

Hastalığın uygun ve başarılı tedavi için öncelikle tanısının akılda tutulması ve şüphelenilmesi önemli rol oynamaktadır.

Anahtar kelimeler: Çocukluk çağı, intussusepsiyon, form, yaklaşım.

INTRODUCTION

Intussusception, the invagination of a portion of the intestine into an adjoining part is an important condition in paediatric surgery. It is the common cause of intestinal obstruction in infants. It has been recognized for over 300 years. It is usually

idiopathic in nature with a physical lead point being found rarely (1). Intussusception is the most common cause of intestinal obstruction among children 3 months to 5 years of age (2). In most cases the etiology cause is unknown.

The association with mesenteric lymphadenopathy has raised the possibility of an infectious cause (3). Accurate estimates of the incidence of intussusception are not available for most developing countries and for many developed countries. Intussusception rates reported from various parts of the world ranged from 24 to 230 cases per 100,000 children annually (4,5). Reduction in intussusception rates were reported in some geographical regions but not in others (5).

Intussusception in children is a common problem, and in some cases the diagnosis can be accomplished clinically on the basis of the classical presentation of crampy abdominal pain, blood in the stools, and, on physical examination, a palpable mass or empty right lower quadrant. However, these findings are not always present (6), and indeed the clinical presentation of intussusception is variable and protean.

Most studies reporting the incidence of intussusception are hospital-based. In general, these are retrospective chart reviews of patients with intussusception presenting to a single hospital for a specific period (5).

The aim of this study was to examine the pattern of the intussusception in children and the management outcome.

PATIENTS AND METHODS

This study was a 2-year prospective study included all children aged 13 years and below, who attended the pediatric surgical emergency department and managed for intestinal obstruction due to intussusception between June 2009 and May 2011 at the Paediatric Surgical Department of Omdurman Military Hospital, Khartoum, Sudan. The consent was taken from parents prior to enroll into study. Data was collected using a predesigned questionnaire and analyzed included the patient's age, sex, symptoms and signs, type of intussusception management outcome and postoperative complications. Other causes of intestinal obstruction were excluded from this study.

Data were recorded using the Excel Microsoft office software. Statistical analysis was performed using the SPSS 15.0 software.

RESULTS

A total of 28 children were managed in our centre for intestinal obstruction due to intussusception. The ages of these patients ranged from 3 months to 13 years with a mean \pm SD of 1.97 ± 2.74 years. Eighteen (64.3%) were under the age of one year. Seven (25 %) of the patients were between one and five years. There were 17 boys (60.7%) and 11 girls (39.3%); M: F ratio = 1.5:1.

Most of our patients presented late. 71.4% presented after more than 36 hours from the initial symptoms. Their presentation ranged from 1 to 52 days with mean \pm SEM of 9.05 ± 2.26 days. Clinical

features were varying. Table 1 shows the clinical presentation of children with intestinal obstruction due to intussusception. The classical presentation of vomiting, abdominal pain (excessive cry), constipation and abdominal distension were observed.

Clinical Features	Patients (n)	(%)
Abdominal Pain	24	85.7
Vomiting	23	82.1
Constipation	5	17.9
Diarrhea	10	35.7
Passage of bloody stool	14	50
Red current jelly stool	5	17.9

Colicky abdominal pain, vomiting and passage of bloody mucoid stool were seen in 85.7%, 82.1% and 50% cases respectively. The classic triad of symptoms was seen in 28.6% cases. Constipation was noted in 17.9%. The frequency of the various signs elicited is given in Table 2.

Sign	Patients (n)	(%)
Abdominal distension	6	21.4
Abdominal mass	21	75
Mass protrusion from anus	3	10.7
Visible peristalsis	2	7.1
Dehydration	7	25

Operative findings were consistent with the various types of intussusceptions as shown in figure 1. various types observed were Ileocecal, Colocolic, Ileoileal, Ileoileocolic, Ileocecal & reversed colocolic and Jujenoileal & Ileoileal intussusceptions in 19 patients (67.9%), 4 patients (14.3%), 1 patients (3.6%), 1 patient (3.6%), in 1 patient (3.6%) and 1 patient (3.6%) respectively, the remainder found to be negative as the condition found to be resolved spontaneously in 1 patient (3.6%).

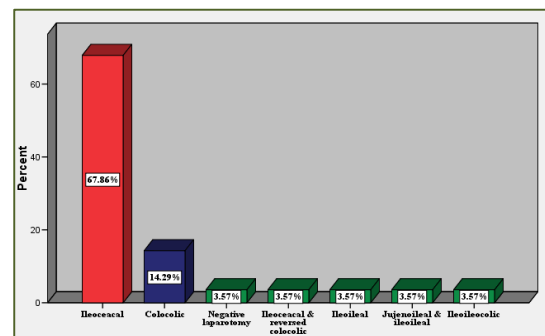


Figure 1: Operative findings.

A lead point was found in 8 cases (28.6%). In four (14.3%) it was caecal tumour, two (7.1%) were Meckel's diverticulum, one (3.6%) was an

appendix and in another one (3.6%) case it was an ileal polyp (Table 3). It considered being idiopathic in origin in the remainder 20 cases (71.4%).

Table 3: Leading points for intussusceptions.		
	Patients (n)	(%)
No leading point	20	71.4
Meckel's diverticulum	2	7.1
Ceecal tumour	4	14.3
Polyps	1	3.6
Appendix	1	3.6
Total	28	100.0

Study showed a seasonality pattern, as a significantly higher number of cases (16/28) (57%) were observed in transitional season between summer and autumn and found to be statistically significant ($p = 0.04$), The second peak was during summer (21.4%).

Six patients (21.4%) were seen by other physician and treated as a case of gastroenteritis before been diagnosed as intussusceptions.

Postoperative pyrexia, abdominal pain and abdominal distension were seen in 2 patients (7.1%) for each. Surgical site and intravenous line sites infection were seen in 1 patient (3.6%) for each. There was re-intussusception seen in one patient (3.6%). There was one patient (3.6%) died post-operatively, see Table 4.

Table 4: Postoperative outcome.		
Complications	Patients (n)	(%)
No complication	25	89.3
Death	1	3.6
Re-intussusception	1	3.6
Wound and intravenous line sites infection	1	3.6
Total	28	100.0

DISCUSSION

Our study did not find any significant difference in the mean age or sex distribution of the patients from other reported regional in Nigeria and international studies (7-12).

Most of our patients presented late. The mean duration of symptoms in our study was 9.05 days with a range from 24 hours to 52 days. This was significantly higher than that reported internationally (7,13,14).

Presence of the symptoms like a passage of blood and mucus in stool usually assumed as an episode of infective diarrhoea (1).

Gandapur et al. from Abbottabad has reported that in 69% cases, the initial diagnosis was

infective diarrhea. These patients were referred to the diarrhea treatment unit (15). Other regional studies in Nigeria have made the similar observation (12,16).

In our study many cases (21.4%) were initially treated as a case of gastroenteritis after an episode of acute diarrhea.

The classical triad of symptoms, pain, vomiting and bloody stool was noted in only 28.6% cases. Sajid et al. noted that, the presence of this triad should raise the suspicion of intussusceptions, and in their series the classical triad was seen in 33% of cases (1).

Most intussusceptions are antegrade, i.e. the proximal small intestine (intussusceptum) is drawn into the distal small intestine (intussuscipiens) by a bowel lesion acting as a "lead point" to which the intussusceptum is attached (17).

Our study revealed that the antegrade ileocecal (ileocolic) intussusceptions are the most common type of intussusceptions followed with colocolic type. This is in agree with others where Ileocolic intussusception was the commonest (12,16,18).

The intussusceptions are more often retrograde and are not associated with a bowel lesion or lead point (19). Study showed a reversed colocolic in transverse colon intussusceptions in 1 patient (3.6%). A lead point observed in 8 cases (10.7%), while in 25 cases (89.3%) it was primary with no obvious cause.

Limitations of the study

This study has some limitations. First, it does not take into account patients who may have been admitted to another hospital.

Second, in the present study, no post-mortem data on intussusceptions were available. Autopsies are rarely performed in our region because of religious and traditional issues and these data are not available. Therefore, our data possibly underestimate intussusceptions rates and the incidence rate of intussusceptions in our population might even be higher than currently thought.

Conclusion

The main emphasis needs to be placed on early diagnosis. This can only be achieved if a high index of suspicion resides in the mind of the first treating physician regarding the possibility of the presence of intussusception. It is essential that with a history of intermittent colicky severe abdominal pain, intussusception must be ruled out before any other diagnosis is considered.

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