Original Article

Childhood Intussusception in Ilorin: A Revisit

Abdur-Rahman L. O.; Yusuf A. S.; Adeniran J. O.; Taiwo J. O.

Paediatric Surgery Unit, Department of Surgery,
University of Ilorin Teaching Hospital, Ilorin - Nigeria

Abstract

Background: Intussusception is the commonest cause of intestinal obstruction in infants worldwide. Whereas the outcome has tremendously improved in the developed countries, the same cannot be said in developing countries, especially Africa. This study aims to review the pattern of presentation and the treatment outcome in patients managed for intussusception at University of Ilorin Teaching Hospital, Ilorin.

Patients and Methods: This was a six-year retrospective study of 44 consecutive children aged 15 years old and below, who were managed for intussusception between January 1999 and December 2004, at the University of Ilorin Teaching Hospital, Ilorin. The biodata, clinical presentation, operative findings and outcome were collected from the paediatric surgical unit record book, the operating theatre records and case notes. The data were analyzed using Microsoft Excel and SPSS software.

Results: There were 44 patients, 23 males and 21 females (M:F=1.1:1). Their age ranged from 2.5months to 9 years, with a median age of 5 months. The peak age group was 3-6months (30, 68.2%). Thirty-seven (84.1%) patients were within one year of age.

The duration of symptoms ranged between 6 hours and four weeks (median = 3.4 days). Majority (72.7%) of patients presented after 48 hours of onset of symptoms, while only 11.4% presented within 24 hours.

Vomiting occurred in 97.6%, and abdominal mass in 72.1%. Pain, irritability and excessive cry occurred in 81.4%, while blood in stool was present in 88.4%. Diarrhoea, constipation, pyrexia and abdominal distention were other features in less than half of the patients.

Thirty nine patients (88.6%) had emergency laparotomy, at which 51.3% had manual reduction of intussusception, while 48.9% had bowel resection. Ileo-colic intussusception was the most common variety seen.

Three of 4 patients with pathologic lead points were above 3 years of age. Eleven patients died, with a post operative mortality of 20.5%.

Conclusion: Infants with intussusception still presented late to the hospital in our environ-ment with attendant high complication rate and poor outcome.

Keywords: Intussusception, children, late presentation.

Introduction

Intussusception is the most common surgical emergencies seen in children worldwide[1]. Intussusception is associated with high morbidity and mortality in developing countries. In this sub-region operative reduction is still practised due to lack of fluoroscopic machine and late presentation of patients. In the developed countries attention has shifted from use of barium enema as a gold standard for non-operative treatment to the use of pneumatic enema or ultrasound guided saline reduction, and where surgical intervention is required, minimally invasive surgical technique is being employed[2].

The aim of this study is to review the current pattern of presentation of patients at our institution and compare it with previous works done in this centre and other places, and to review the treatment outcome and outcome predictors in these patients.

Correspondence to:
Dr. L. O. Abdur-Rahman, P. O. Box 5291, Ilorin 240001, NIGERIA. E-mail: bolarjide@yahoo.com

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Patients and Methods

This was a six-year retrospective study of children aged 15 years old and below who were managed for intussusception between January 1999 and December 2004, in the University of Ilorin Teaching Hospital, Ilorin in Nigeria. The biodata, clinical presentation and operative findings were reviewed. The data were collected from the paediatric surgical unit record book, the operating theatre records and case notes, and analyzed using Microsoft Excel and SPSS software.

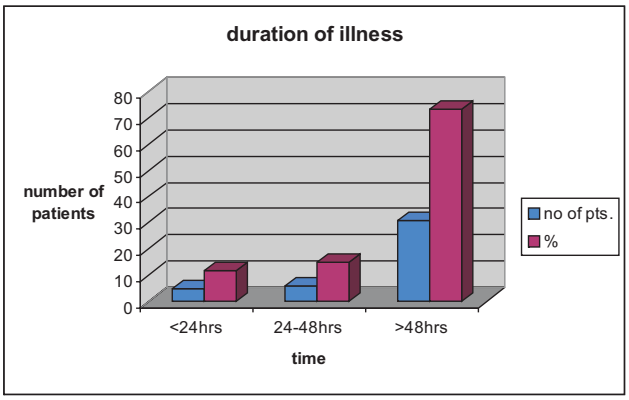
Results

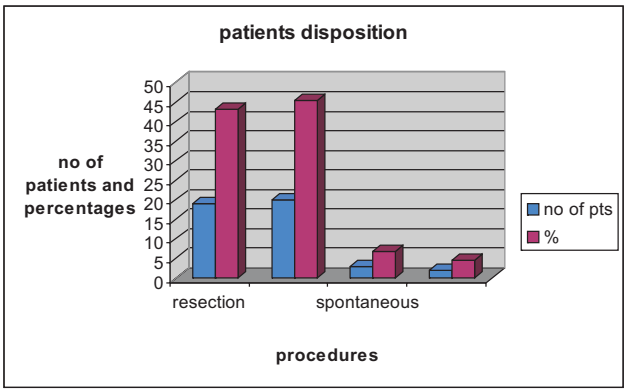
There were 44 patients, 23 males and 21 females (M: F ratio of 1.1:1). Their ages ranged between 2.5months and 9 years, with a median age of 5 months. The peak age group was 3-6months (30, 68.2%). (Figure 1). Thirty-seven (84.1%) patients were aged one year and below.

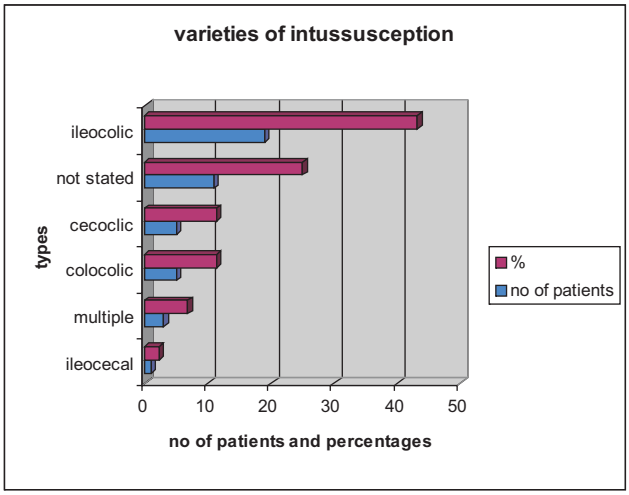
The duration of symptoms ranged between 6 hours and four weeks (median = 3.4 days). Thrity-two (72.7%) patients presented after 48 hours of onset of symptoms while 5 patients (11.4%) presented within 24hours, (mean duration was 3.8-days. figure 2).

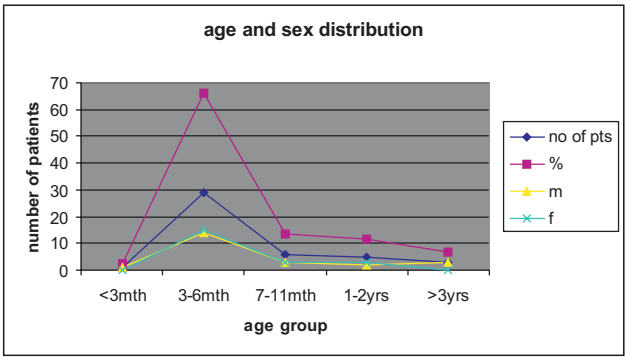
Vomiting was the most predominant symptom seen in 97.6%, abdominal mass in 72.1%. Pain, irritability and excessive cry occurred in 81.4%, while blood in stool was present in 88.4%. Diarrhoea, constipation, pyrexia and abdominal distention were other symptoms in less than half of the patients.

Diagnosis was based on clinical features in all patients but supplemented by abdominal ultrasound in 18 patients. The ultrasound findings of the presence of 'doughnut' or “pseudokidney' sign with increase peristalsis. There were 2(11%) false positive ultrasound findings (at laparotomy these









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were retro-peritoneal cyst and fecal impaction, respectively). There were also 4(22%) false negative reports; intussusception was confirmed at surgery, but could not be seen at ultrasonography.

Thirty nine patients (88.6%) had emergency laparotomy. Five patients (11.4%) who had clinical and ultrasound diagnosis were not operated on because 3 patients had spontaneous reduction of intussusception while awaiting surgery and the other 2 died prior to operation because of severe septicaemia and respiratory distress. Twenty patients (51.3%) had manual reduction of intussusception alone at laparotomy, while 19(48.9%) had resection of bowel due to irreducibility, presence of gangrene or lead points (figure 3).

Ileo-colic intussusception was the commonest variety seen accounting for 19(43.2%); ceco-colic 5(11.4%), ileo-cecal 1(2.3%), colo-colic 5(11.4%), multiple 3(7.1%). In 25.0% of cases (Figure 4), the type of intussusception was not stated. Three out of 4 patients with pathologic lead point were above 3 years of age. The histologic reports of the lead points showed one case each of non-Hodgkins lymphoma, adenoma, Meckel's diverticulum, and lymphoid hyperplasia.

Eleven patients died (25%), 2 died before surgery while 9 died (20.5%) post-operatively. Seven of the nine patients (77.8%) had bowel resection. The remaining 2 patients died after operative reduction of their intussusception. These two patients had overwhelming post-operative sepsis. Of the seven that died after resection, 3 needed intensive care unit (ICU) admission, 1 had aspirations pneumonia, 1 had renal failure and 2 had severe electrolyte derangement from enterocutaneous fistula.

Discussion

Intussuseption is a common cause of intestinal obstruction in infants[1,3-15]. The incidence varies from season to season and from environment to environment[6,9].

Majority of the children (72.7%) presented late to the hospital as in previous reports[3-9], and this was further confirmed at a recent workshop in Malawi[10].

Delay in presentation are often caused by wrong diagnosis and delay in referral. Many of these patients are referred only after the initial treatment for malaria or teething dysentery has failed[1,3-5].

In this series male and female ratio were almost equal, unlike the male preponderance of 1.3 to 3 in other reports[3-5]. We attribute this gender equality to the fact that these children live in similar environment, and are exposed to the same risk factors i.e. formula feeds, adenovirus infection of respiratory tract and gastro-intestinal tract. The peak age incidence of 3-6 months noted in this series agrees with the general pattern reported from other parts of the world[3-9], although, an earlier prospective study from this centre showed a peak age of 6-9 month[5].

The classical clinical features of vomiting, abdominal pain and or irritability, abdominal mass and blood in stool in this series agree with other reports[6,7]. The rate of ultrasound scanning is low because majority of the parents either did not have enough funds on them on arrival in the hospital or the sonologist was unavailable during this emergency. The 11% false positive scan and 22% false-negative scan among those that were scanned probably reflected the in-experience of the sonologists who are usually residents in training.

Three patients, whose intussusceptions were clinically and ultra-sonographically confirmed, had spontaneous reduction while waiting for operative intervention. Reduction was also confirmed by repeat ultrasonography. The remaining patients had operative intervention due to late presentation.

The bowel resection rate of 48.7% in this series is high due mainly to presence of perforation, irreducibility and gangrene of the bowel which could have been caused by the delay in presentation. The Malawi workshop showed that in African countries bowel resection rate following intussusception ranges between 30-60%[10].

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Ileo-colic variety was the most common intussusception seen in this series, a finding that it similar to other series[2]. Secondary intussusception (intus-susception with lead points) occurred more among children who were above three years of age. This is in accordance with other series[3-9] and confirms the need for proper scrutiny for lead points in childhood intussusception presenting after 2 years of age.

The post-operative mortality of 20.5% in this series is high although lower than the previous reports from same centre[3,5]. In the northern part of the country, mortality ranges between 8 and 9.4%[11,13]. In East Africa it ranges between 10 and 14%[8-9], and in American and European series, the range is about 1-1.8%6,7. Late presentation with the presence of septicemia, bowel gangrene, respiratory failure and other organ failure may be responsible for poor outcome in these patients.

Improved clinical acumen, high index of suspicion by health care providers, especially among the age group presenting with classical features and early referral is desirable to reduce morbidity and mortality.

Prompt and judicious fluid and electrolyte management and antibiotic therapy would also reduce morbidity and mortality.

In this sub-region, public awareness should be intensified to facilitate early attendance of appropriate health facility.

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