



Original Article

Intussusception in Children : A Study of 50 Cases

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Abstract

This is a prospective study carried out at the department of surgery, Dhaka Shishu Hospital during the period from 1st February 1997 to 28th February, 1999. Fifty paediatric patients aged less than 12 yrs with provisional diagnosis of intussusception were included in this study. Highest number of patients were within 1 year of age (70%), male female ratio was 2.57:1, the exact aetiology of intussusception could not be identified in majority of the cases (90%). Abdominal pain (82%), vomiting (78%) and per rectal bleeding (62%) was common presentations. All patients were managed surgically. Ileocolic type was commonest type of intussusception (66%). Postoperative complications was noted in 14% cases. With limited resources, this study tried to collect many information about various aspect of intussusception in Bangladeshi children. It is hoped that organization and compilation of these information will stimulate further studies, leading to a greater comprehension of the problems of intussusception of paediatric age groups in our country.

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Introduction

The term “intussusception” is defined when one portion of the gut becomes invaginated with another immediately adjacent; almost always it is the proximal into the distal, very rarely indeed is an intussusception retrograde.

Intussusception is usually an acute emergency and in advanced cases, serious pathophysiological changes occur if not treated timely. The nature and seriousness of these changes depend on the degree and duration of obstruction and type of intussusception. If intussusception is unrelieved, the blood supply at the obstructive point of intestine is impaired, and ultimately necrosis, gangrene, perforation and general peritonitis develop.¹

Though a number of cases are found in different hospitals of our country each year, there are no exact statistical record on the incidence of intussusception.

Recent advances in medical technology, such as ultrasound, radiology (plain X-ray abdomen and barium-enema) have dramatically altered the diagnosis and evaluation of patient with intussusception with early recognition and proper treatment either by surgical correction or hydrostatic reduction, and thus majority of the patients can be saved from this fatal condition.

Many parents do not bring their children to hospital for early management, rather they are taken to the quacks where inappropriate treatment is provided. As many of these patients do not present with typical features of intestinal

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obstruction, their diagnosis is delayed; in the meantime, a good number of cases become complicated and may be fatal.

In the developed countries, there are many studies and statistical data for intussusception, but in our country, where the children constitute almost half of the total population we do not have sufficient information about the different aspects of this common paediatric surgical problem.

In Bangladesh, we failed to make Majority of people health conscious, medical facilities are sparse, transport system is not well-developed, people are illiterate, moreover, majority of them come from poor socioeconomic background and they are unwilling to be admitted in hospital for surgery. Therefore, morbidity and mortality is cases of intussusception is higher than the developed countries.

Keeping these facts in mind, the present study was undertaken to gather information about intussusception in paediatric patients to find out the incidence, to diagnose the case early, mode of presentation, to improve the management with our limited available resources and to form a basis for future study. We hope, ultimately this will improve our total care for the paediatric patients with intussusception.

Materials and Methods

This is a prospective study carried out at the department of surgery, Dhaka Shishu Hospital during the period from 1st February, 1997 to 28th February, 1999. Patients were randomly selected from among those attending Dhaka Shishu Hospital. Fifty paediatric patients aged less than 12 years with provisional diagnosis of intussusception were included in this study. In each case, information about patient was obtained in a predesigned data collection sheet. Detailed history was taken from the mother of the patient, with a few exception, where the patient's father or grandmother or patient himself/herself helped. All presenting features, physical examination findings are noted. All patients investigated by appropriate investigations like, serum electrolytes, plain X-ray abdomen, ultrasonogram of whole abdomen and

contrast enema X-ray in necessary cases. All patients managed surgically because most of the patients presented late. Though a few cases presented before 24 hours, fluoroscopic facilities was not available at that time, so barium enema or air reduction was not possible. At the time of discharge, all the patients were advised to report to the out patient for follow-up after one month of discharge.

Results

All 50 patients were diagnosed as intussusception and that was 1.18% of total 4225 admission in the surgery department of Dhaka Shishu Hospital during study period. The age of the patients in the overall groups ranged from 3 months to 12 yrs. Highest number of patients were within 1 year of age (70%) (Table-I). Below 1 yr, highest incidence was in the 6-9 months group (57.20%) (Table-II).

Table I: Distribution of patients by age (n=50)

Age group (years)	Number of patients	Percentage
0-1	35	70.0
1.2	7	14.0
2-3	4	8.0
3-4	2	4.0
4-12	2	4.0

Table II: Distribution of patients less than 1 year (n=50)

Age group (years)	Number of patients	Percentage
0-3	1	2.86
3-6	10	28.60
6-9	20	37.20
9-12	4	11.34

Out of 50 patients, 36 were male and 14 female. Male female ratio was 2.75:1.

The patients with intussusception in this series presented with a number of symptoms (Table-III). Abdominal pain (82%), per rectal bleeding (62%) was common symptoms.

Table III: Mode of presentation of patients (n=50)

Presenting features	Number of patients	Percentage
Abdominal pain	41	82.0
Vomiting	39	78.0
Bleeding per rectum	31	62.0
Abdominal distension	23	46.0
Rise of temperature	19	38.0
Scanty micturition	13	26.0
Constipation	11	22.0
Diarrhoea	2	4.0
Per rectal prolapse of mass	1	2.0

In this study, commonest physical finding was abdominal distension (68%), followed by per rectal red currant-jelly (66%) and palpable abdominal mass (56%) (Table-IV)

Table IV: Mode of presentation of patients (n=50)

Physical findings	Number of patients	Percentage
Abdominal pain	41	82.0
Vomiting	39	78.0
Bleeding per rectum	31	62.0
Abdominal distension	23	46.0
Rise of temperature	19	38.0
Scanty micturition	13	26.0
Constipation	11	22.0
Diarrhoea	2	4.0
Per rectal prolapse of mass	1	2.0

All 50 patients managed surgically. The type of intussusception varied in different patients with predominance of ileocolic type (60%) (Table V). The exact aetiological factor of intussusception could not be identified in majority of the cases (90%) (Table-VI). Among all only one pt expired due to septicemias.

Table V: Types of intussusception (N=50)

Types of intussusception	Number of patients	Percentage
Ileocolic	33	66.0
Ileoileocolic	9	18.0
Ileoileocolic	5	10.0
Ileoileal	2	4.0
Appendicolocolic	1	2.0

Table VI: Causes of intussusception (n=50)

Cause	Number of patients	Percentage
Warm bolus impaction	1	2.0
Lymphoma	1	2.0
Submucosal haematoma	1	2.0
Submucosal lipoma	1	2.0
Meckel's diverticulum	1	2.0
Unknown	45	90.0

Discussion

There was 50 patients with intussusception found during the 25 months of study period, which constituted 1.18% of total paediatric surgical admission on Dhaka Shishu Hospital (DSH), though this does not represent the actual incidence of intussusception in our country, it can be assumed to be representative of prevalence of this disease among children, as DSH is the only established full-fledge hospital for children, where paediatric patients come from different parts of the country.

Among the 50 patients, 35 were under 1 yr of age (70%). Among these 35, 20 were 6-9 months (57-20%) age group. The maximum patients (70%) within 3-12 months age group may be due to change in diet which causes change in intestinal flora and cause intussusception.²

In our study male female ratio was 2.57:1. Out of 1199 cases studied at the Royal Hospital in Glasgow upto 1999, male constitute 65% (2:1 ratio).²

In this study, in 90% cases exact aetiology was not found. This study correlates with other study. According to Huston et al, in 90% episodes, there was no obvious cause.³ According to Sperger, only 5% intussusception cases has pathological lead point.⁴

The patient with intussusception in this series presented with a number of symptoms, mostly abdominal pain (82%), vomiting (78%), bleeding per rectum (62%) and abdominal distension (46%), this study mostly correlates with findings of Glasgow series.²

In this present study all 50 patients were managed surgically because of delayed presentation and unavailability of fluoroscopic facilities, which does not correlate with series of developed countries. Between 55 to 95% intussusception are reducible by hydrostatic or pneumatic methods under fluoroscopic or ultrasonographic control.^{5,6}

In this study, type of intussusception mostly correlate with the findings of Mann et al¹ Appendicolocotic variety were found in the study of Forshall⁷. No case of colocolic variety was found in our series, which is an uncommon type found only in 2% of Mann and 1.2% of Bower.⁸

Among the surgically treated patients, immediate postoperative complications was observed in 7 patients (14%) Superficial round dismption in 3 (6%), burst abdomen in 1 (2%), intestinal obstruction in 1 (2%) pneumonia in 1 (2%) and one 2%) expired due to septicaemia. Incidence of complications are high among the patients with delayed presentation and with gangrenous gut. Gns and ware describing the Boston experience recorded a reduction in the mortality rate from 59% in 1922 to 2.7% in 1947.²

No recurrence was observed in our study. According to Kivi and Smith recurrence rate was 5%⁹ and according to Lim and Rhu rate was 3 percent.¹⁰

As there is no nationwide data on intussusception in Bangladesh about its incidence, diagnosis and management, so we can not represent the actual incidence of intussusception in the general population. This study throws some light on the prevalence of this disease among admitted patients in a surgical ward of a leading children's hospital of the country.

With limited resources, the present study tried to collect many information about various aspect of intussusception in Bangladeshi children. It is hoped that organization and compilation of these information will stimulate further studies, leading to greater comprehension of the problems of intussusception of paediatric age groups in our country.

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