East African Medical Journal Vol. 78 No. 1 January 2001
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ABSTRACT

Objectives: **To determine prevalence, clinical presentation, evaluate management methods and outcome of paediatric intussusception in Calabar.**
Design: **A retrospective study.**
Setting: **University of Calabar Teaching Hospital, Calabar, Nigeria.**
Participants: **All cases of intussusception in children that presented at the children emergency Room and Surgical Outpatient Department of the University of Calabar Teaching Hospital between 1989 and December 1998.**
Results: **The mean age was 7.5 months with a male: female ratio of 1.8:1. The main presenting symptoms were vomiting in 76 (85.3%) patients, general irritability in 69 (77.5%) patients, bleeding per rectum in 47 (52.8%) patients and palpable abdominal mass in 38 cases (42.6%). Majority of the patients presented late to hospital beyond 36 hours since onset of illness and had had enema administration before presentation, a popular phenomenon in the region. Diagnosis of this condition was confirmed clinically in fifty nine patients (66%). Eighty one patients (91%) had laparotomy, the only method of treatment available with simple manual reduction while in eight patients (9%) laparotomy was accompanied with resection and anastomosis for bowel with doubtful viability.**
Conclusion: **Time lapse from onset to presentation is not a criterion for choosing between operative and non-operative reduction. The clinical status and abdominal evaluation of the patients are the important features to consider. Operative reduction in most instances involve manual reduction hence should be preceded by conservative methods of reduction.**

INTRODUCTION

Intussusception in infants and childhood is a common acute abdominal condition and in this region is one of the major causes of intestinal obstruction(1). Recent medical advances(2) have necessitated a review of the management strategy of this condition in a developing country, with a view to emphasising the optimum modality of treatment. The aim of this study therefore was to appraise the present management strategy adopted by our centre as most centres in the region adopted similar method. Embracing modern methods of treatment will reduce mortality, morbidity and shortens hospital stay.

MATERIALS AND METHODS

This was a retrospective study of all cases of intussusception that presented at the University of Calabar Teaching Hospital, Calabar (UCTH) between January 1989 and December 1998. This hospital is the only tertiary hospital in the region and accepts referrals from within the whole of south eastern region of Nigeria, with a population of about two million people. Case notes of all paediatric patients admitted and treated for intussusception within the period were reviewed. Data extracted included age and sex of the patients, time of presentation, duration of symptoms before presentation at the surgical clinic, method of diagnosis and the presenting symptoms and signs. Other information extracted included medications administered before presentation and operation findings. The University of Calabar Teaching Hospital has no facility for ultrasonography though a radiological unit is functional.

RESULTS

During the period under review, a total of 89 children with intussusception were operated upon and this was the sole method of treatment adopted by most hospitals within the country. There were 57 males and 32 females aged between three months and 12 months, giving a male female ratio of 1:8:1. (Table 1). The main presenting symptoms were vomiting, general irritability and bleeding per rectum (Table 2).

In thirty eight per cent of patients the mass was palpable per abdomen, diarhoea was present in 23% of patients, constipation in eleven per cent and palpable mass per rectum in nine per cent of patients. Majority of the patients reported to the surgical clinic after 36 hours from the onset of the illness mostly between 36 and 48 hours from the onset of the illness (Table 3).

Table 1

Age and sex distribution of eighty nine patients with intussuception

Age (in months)	Sex M	F	Total
0-3	8	5	13
4-6	35	17	52
7-9	9	7	16
10-12	3	2	5
Above 12	2	1	3
Total (%)	57(64%)	32(36%)	89(100%)

Table 2

Presenting complain in eighty nine patients with intussuception

Symptom/sign	No. of patients	%
Vomiting	76	85.3
General irritability	69	77.5
Bleeding per rectum	47	52.8
Mass palpable per abdomen	38	42.6
Diarrhoea	23	24.8
Constipation	11	12.4
Prolapsing mass per rectum	9	10.1

Table 3

Time of presentation of eighty nine patients with intusuception

Time of presentation in hospital for surgical assessment	No. of patients	%
Within 1 hour	Nil	0.0
1-12 hours	3	3.4
13-24 hours	11	12.4
25-36 hours	20	22.5
37-48 hours	43	48.3
Above 48 hours	12	13.5
Total	89	100

Table 4

Method of diagnosis in eighty nine patients with intusuception

Method of diagnosis	No. of patients
Clinically (symptom complex)	59
Radiologically (plain abdominal x-ray)	18
Clinically + radiologically	12
Total	89

Enema administration a popular phenomenon in the region was administered to 85% of the patients before presentation in hospital. Diagnosis of the condition was confirmed clinically in 59 cases. However where the opportunity permitted plain abdominal radiographs was suggestive in 18 patients and the combination of both was useful in twelve patients (Table 4).

Table 5

Results of operative treatment in eighty-nine patients

	No. of patients	(%)
Simple manual reduction	72	80.9
Prolapsing mass with intra-anal pushing and manual reduction	9	(10.1)
Resection of gangrenous bowel segment and anastomosis	8	9.0
Total	89	100.0

The operative procedures adopted are highlighted in Table 5. Simple manual reduction was effective in 72 patients. In nine patients, the mass had prolapsed through the anal verge, pushing it back into the rectum and sigmoid colon preceded manual reduction. However, in eight patients, resection and primary anastomosis were carried out because of doubtful viability of bowel segments and gangrenous bowel loop. All patients were administered intravenous fluids and antibiotics. Two patients died in this survey, after resection and anastomosis, from overwhelming infection and colitis. No recurrence was noted in this series, as none was reported.

DISCUSSION

This study was carried out to access the efficacy of our present mode of treatment in line with the present emphasis on conservative management advances. The sex and age incidence are in concert with what is known in the literature(2). The symptom complex seen in this survey shows that vomiting, abdominal pain and bleeding per rectum were the dominant features. It may thus be concluded that in patients with this symptom complex a high index of suspicion should be on intussusception. This contrasts sharply with the findings by Winstanly *et al*(3) where this complex was seen in only 20% of cases. It may therefore by argued that complex diagnostic and technological advanced tools are not necessary as these signs are sufficient to alert the physician. The striking features in this report are late presentation of patients at the surgical clinics and the administration of herbal enema prior to this enema administration(4) a culture deeply inherent in the people of this region, is considered a prerequisite before attendance at hospital, especially if abdominal discomfort of any sort is suspected. Mothers frequently practice this and in babies the enema solution is pumped into the rectum(5) the gluteal muscles are

squeezed together to force the solution inwards and upwards. May be in some cases the obstruction can reduce spontaneously if the pressure exerted by the infected enema solution is high enough to push the mass back. However, if the pressure is not high enough, the intussusception may reduce a bit, hence the obstruction may not be so dangerous even if presentation at hospital is done much later. The other feature in this study is that the patients presented rather late. On the average, 84 of the patients presented after 24 hours since the onset of the illness and contrasted sharply with the findings by Winstanly *et al*(3) where 60% of children presented within the first 24 hours. Perhaps the routine administration of enema ameliorates the patients' condition during delay in presentation.

In the 89 patients that were all operated, as this was the only mode of treatment, only eight patients(9%) had resection of the bowel for reasons ranging from gangrenous bowel to bowel of doubtful viability. The procedure adopted was the simple manual reduction, and for the viability of the gut to be retained after such delays in presentation calls for serious re-thinking of our approach. It behoves the clinician in this region to seriously consider usage of non-operative procedures as a treatment modality in paediatric intussusception. The lack of qualified personnel in the radiological unit coupled with lack of enthusiasm in radiological reduction has shifted much work to the surgeon. This may explain why most of the diagnoses were confirmed clinically. Lack of equipment is also a major handicap as most general hospitals do not have functional radiology units.

This study emphasises the need for non-operative technique in the management of paediatric intussusception. Recent advances in endoscopic surgery(6,7) tend to buttress this fact, for the earlier doctrine of time lapse from onset to time of presentation seem to be unjustified. In this study, patients presented beyond 24 hours from onset of the illness, yet the bowel loops were viable seem to corroborate this fact. It may perhaps be said that the cardinal point in assessing acute abdominal catastrophe is not the question of time lapse but the clinical presence of such abdominal signs, suggestive of acute abdominal catastrophe

Hydrostatic reduction first advocated by Hirschsprung but practicalised by Ravitch *et al*(8), is a convenient diagnostic/therapeutic manoeuvre not requiring too much of a skill. However, the co-operation of the radiologist and the surgeon interplays to make this procedure a useful diagnostic therapeutic tool. Availability of water soluble contrast media may replace barium in cases of suspected perforation. Reports from China(9,10) show the affinity of the radiologist/surgeon to pneumatic reduction, and in a wide population of patients the usefulness of pneumatic reduction was demonstrated. Both hydrostatic and pneumatic reduction being non-operative, reduce morbidity and mortality, shorten hospital stay and the early discharge of the child, in cases with no contraindications to above methods of treatment.

In conclusion, the emphasis of this survey is that time lapse from onset to presentation may not necessarily be used as a criterion for choosing between operative and non-operative reduction. The clinical status and evaluation of the abdominal signs in the child are the important features to consider. Furthermore, since operative reduction involves only manual reduction of the mass, it is then logical that non-operative reduction, should precede this and it may be hydrostatic or pneumatic. Surgeons and radiologists in the developing countries have to put this procedure into practice and educate the policy makers on the need for the provision of equipment for the procedure. This ultimately reduces hospital stay and saves cost.

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