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Intussusception in Childhood at Ilorin

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SUMMARY

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Forty-three children who were diagnosed as having intussusception between January 1982 and December 1986 at the University of Ilorin Teaching Hospital, were studied. This represents 0.1% of all paediatric admissions. There were 29 males and 14 females, a male:female ratio of 2.1:1. Thirty three (77%) cases were below the age of 1 year. Ileocaecal (56%) and ileocolic (42%) were the commonest types seen in all age groups. Mortality was 49%. Early presentation and good management will reduce the morbidity and mortality from childhood intussusception.

Introduction

DATA from the United States and Britain, show that the majority of patients with intussusception are under 2 years of age.[1] Studies carried out in southern and northern parts of Nigeria showed that the disease is not confined to infancy and early childhood, but occurs frequently in older children and adults.[2–4] Published data from South Africa,[5] Korea[6] and India[7] also show a similar pattern to the Nigerian Studies.

As far as we know, there have been no published data regarding the features of this disease from the middle belt of Nigeria. This review is therefore, intended to bridge the gap in our knowledge of intussusception in children and highlight the differences in incidence, clinical presentation, surgical types, morbidity and mortality which may exist.

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Materials and Methods

The records of all paediatric patients admitted to the University of Ilorin Teaching Hospital (UITH) with the diagnosis of intestinal obstruction, between January 1982 and December 1986 were reviewed. All the cases which were confirmed at operation as intussusception were identified and their records analysed. The data obtained from each case note included age, sex, month of presentation, operative findings, complications, duration of illness before presentation and outcome.

Results

In the 5 years under review, there were 41,179 paediatric admissions. Of these, there were 43 proven cases of childhood in-

tussusception, which represented 0.1 of the total admissions. There were 29 males and 14 females, giving a male: female ratio of 2:1. The children were aged 1 month to 7 years, with 33(77%) below the age of 1 year and a peak between 0-6 months (Table I). Majority of cases were self referral, only 4 were referred from private hospitals where they were previously managed as cases of gastroenteritis and malaria. There was a cluster of cases (44%) during the dry harmattan season (December – March) and a low incidence (7%) during the rainy season. Only nine cases had a previous history of illness — 5 with upper respiratory tract infection, two with otitis media and one with enteritis.

TABLE I
Clinical Presentation in 43 cases of Intussusception

Clinical Feature	No of Cases	% of Total
Symptoms		
Vomiting	40	93
Bloody diarrhoea	33	77
Constipation	4	9
Intermittent screaming attack	2	5
Signs		
Abdominal distension	28	65
Fairly well nourished	28	65
Palpable mass	25	58
Fever	24	56
Dehydration	23	53
Typical red current jelly stools	8	19

Clinical presentation and diagnosis

Only 5 (12%) patients presented within 24 hours of illness. Twenty-four (56%) presented between 48-72 hours whilst 9 (21%) presented after one week.

The commonest presenting features were vomiting (93%) tachycardia (96%), bloody diarrhoea (77%), abdominal distension (65%) and absent bowel sounds (72.7%). Twenty-eight (65%) of the children were fairly well nourished. Other features were a palpable sausage-shaped mass, fever, dehydration, passage of typical red-currant jelly stools and constipation (Table II). Of the 25 patients with a palpable mass, 13 (52%) were located in the left iliac fossa, 6 (24%) each in the right iliac fossa and midline, while the location was not specific in 6 (24%) cases. The apex of the intussusception was palpable on rectal examination, in only 8 (19%) patients.

Pre-operative diagnosis of intussusception based on clinical and radiological (plain abdominal x-rays) features was made in 34 (79%) cases. Plain abdominal x-ray features suggestive of intestinal obstruction were found in 9 (21%) cases. The specific diagnosis of intussusception was then confirmed at surgery. Barium enema reduction was carried out in only one case. The other patients did not meet the criteria for such a procedure to be carried out. These criteria were a history of less than 24 hours and absence of complications in the child as a result of the disease.

Operative findings

Pre-operative resuscitative measures undertaken included treatment for shock and dehydration; nasogastric suction, anti-biotics and blood transfusion. All the patients were

TABLE II
Mortality and Duration of Illness before Presentation

Duration of Illness	No of Cases	No of Deaths	% of Mortality
< 24 hours	2	1	50
1–2 days	18	5	28
3–4 days	13	8	62
5–7 days	3	2	67
> 7 days	7	5	71
Total	43	21	49

subjected to laparotomy including the case in whom hydrostatic reduction at the time of barium enema was attempted. Manual reduction was possible in 15 (35%) cases. Primary resection with anastomosis was carried out in 28 (65%) cases; in 13 (30%) for gangrene of the gut and in 15 (35%), for failed reduction. No specific associated gross pathology was found on the resected bowel. Enlarged mesenteric lymph nodes were not found in any of the case.

The types of intussusception found were ileocaecal in 24 (56%), ileocolic in 18 (42%) cases and colocolic in one case. Of the 33 infants in the study, 18 (55%) had ileocaecal type, 14 (42%) ileocolic and 1 (3%) aged 9 months had a combined ileocaecal and colocolic type.

Outcome

There were 21 deaths, a mortality of 49%. All had bowel resection and anastomosis done. Majority (76%) of the deaths occurred within 24 hours after surgery. Consent for post mortem examinations was refused on religious grounds in these deaths. All the survivors are being followed up and are developing normally. No case of recurrence has so far been reported.

Discussion

This study has shown that intussusception, although not a major paediatric problem in terms of incidence, can carry a high mortality. As previously reported,[3 4] the highest incidence in our study was in the first year of life with a peak at six months. However, Elebute and Adesola[2] have shown a higher incidence in children older than 1 year in the southwestern parts of Nigeria. Our findings of a greater preponderance of male patients as well as the clinical features are similar to those reported elsewhere.[2–4 8–9] We have observed a significant variation in the seasonal incidence with a definite increase during the dry harmattan months, and a low incidence during the rainy season. Elebute and Adesola[2] also recorded such a difference in their series. Gastroenteritis, upper respiratory tract infections and other oral infections are known predisposing factors to intussusception.[1 6] An increase in the incidence of these diseases during the harmattan period may therefore, be responsible for the seasonal differences observed. However, an increase in the incidence of these associated diseases has not been documented in our area. Caecocolic intussusception which was by far, the commonest type from some studies in Nigeria[2] was conspicuously absent in this series. However, Awojobi[10] and Ajao[8] reported from Ibadan a high incidence of ileocaecal intussusception similar to this study. As in the Ibadan series,[3] we also recorded a low incidence of double intussusception. The absence of a specific initiating pathologic cause in any of the patients compares well with previous reports.[10 12]

The initial diagnosis of intussusception in this study was largely clinical. Timely diagnosis in this condition is usually dependent on the primary physician rather than the surgeon. In many cases such primary physicians are outside of our teaching hospitals. Barium enema either for investigative purpose or hydrostatic reduction was not routinely carried out, as the patients did not satisfy the accepted criterial for such a procedure to be undertaken. This is similar to experiences from Northern Nigeria.[4] Although the successful use of this modality of treatment is well documented, the need for it to be done under flouroscopic control

in the presence of the surgeon, is a factor negating its use in most hospitals in developing countries, Nigeria inclusive. Thus, operative reduction is on the long run, both safer and surer than barium enema reduction which has been known to be associated with failures.[15] Even where hydrostatic reduction has been successful, laparatomy has subsequently been found necessary in about 25% of some series in order to confirm or complete the reduction.[16] As soon as the patient is adequately prepared, we agree with White[15] that surgery is the safest and the preferred form of treatment in our environment.

In this study, 67% of the patients required resection of the involved segment due to gangrenous bowel or irreducibility. The high incidence of gangrene and bowel resection relates to late presentation, which is a reflection of the low level of health awareness in the community.[4–8 10–13] Parents often temporise before seeking medical advice. There were 21 (49%) deaths, mainly in infants, which is considerably higher than in other series.[2–4 8–12]

Major contributory factors to this high mortality were late presentation and consequent bowel resection done in a significant proportion of our patients. Delay in therapy and resection in the presence of gangrenous bowel are known to carry a high morality.[4 12] Since most of our cases were infants, probably the high mortality rate may also be due to the tender age and the difficulties associated with diagnosing the condition early in them.

The only way to reduce overall mortality of intussusception is by prompt surgical intervention, preferably before a reducible lesion becomes an irreducible one. Intensive health education with a view to promoting increased health awareness and encouraging early presentation of patients to hospital will reduce the morbidity and motality from an otherwise treatable though relatively uncommon paediatric problem.

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