

# INTUSSUSCEPTION IN KUMASI - GHANA: ANALYSIS OF 84 CASES

**F.A. Abantanga**, MD, PhD-paed. surg.,  
**D. Nii Amon-Kotei**, Dipl. med, Dr. med., FACH, FACH - paed. surg.,  
FWACS, Department of Surgery, School of Medical Sciences, U.S.T.  
**Y. Ayesu-Offei**, BSc, MB, ChB.  
Komfo Anokye Teaching Hospital, Kumasi.

## SUMMARY

*In a retrospective study, eighty-four patients treated for intussusception at the Komfo Anokye Teaching Hospital in Kumasi-Ghana within a period of ten years were analysed and discussed with respect to age and sex distribution, preoperative differential diagnosis, anatomical typing, intraoperative findings, postoperative morbidity and mortality, as well as complications after surgery.*

*Approximately 8.4 cases of intussusception were recorded in the hospital each year, with an overall mortality rate of 9.5%. Fifty-nine (70.2%) patients were males and twenty-five (29.8%) were females. The majority (85.7%) were children; the rest (14.3%) were adults. In forty-four cases, the intussusception was associated with a mobile caecum. Other intraoperative findings included enlarged mesenteric lymph nodes, adhesions, malrotation, lymphoma of the bowel, large bowel polyp and a blind loop of a side-to-side intestinal anastomosis. These and also the possible association of intussusception with herbal enemas are considered in this study as moments favouring the occurrence of intussusception.*

**KEYWORDS:** Intussusception, mobile caecum, herbal enema.

## INTRODUCTION

A review of the world literature shows that intussusception ranks high as a surgical emergency in infancy and early childhood [1,2]. The predisposing factors are variously mentioned as: intra-abdominal adhesive bands [3]; appendiceal stump [4,5]; haemangioma [6]; etc. As is obvious, each author mentions only one or two factors which, in their opinion, can lead to intussusception. In this study, a retrospective analysis of cases seen and managed in a regional teaching hospital is presented.

## MATERIALS AND METHODS

In the 10-year period of 1981 to 1990, eighty-four patients (84) were admitted to the Komfo Anokye Teaching Hospital in Kumasi with intussusception. Of these, 72 (85.7%) were children, the rest - 12 (14.3%) were adults. Their ages ranged from 3 months to 60 years. Among the children, 50 were boys and 22 - girls; and among the adults, 9 were males and 3 - females.

The clinical diagnosis of intussusception was confirmed at laparotomy, during which the various predisposing factors were elicited and recorded in the operation notes. On the average, the duration of symptoms before hospitalization was four days. From this, it is obvious that all the patients had to be appropriately resuscitated before surgery. About 23.8% (20) of our patients had bowel resection done; the rest had laparotomy and manual reduction of the intussusception carried out.

## RESULTS

A total of 84 cases were seen in our hospital during a 10-year period. There were 72 children below the age of 14 years and 12 adults, with an age range of 30 to 60 years. Of the children, there were 50 boys and 22 girls, with a sex ratio of 2.3:1. Children up to the age of one year constituted the most affected group - 62(86.1%) - Table 1. The overall male to female ratio, adults inclusive, was 2.4:1.

**Table 1: Intussusception in Kumasi - Age distribution.**

Age	No. of cases (%)
3 - 6 months	29 (34.5)
7 - 9 months	19 (22.6)
10 - 12 months	14 (16.7)
1 - 5 years	6 (7.1)
6 - 10 years	2 (2.4)
11 - 14 years	2 (2.4)
15 - 60 years	12 (14.3)
Total	84 (100.0)



F.A. Abantanga



D. Nii Amon-Kotei



Y. Ayesu-Offei

The duration of symptoms before presentation to hospital ranged from 2 to 7 days. None of our patients reported to hospital within 24 hours after the appearance of the clinical features of intussusception.

Although various combinations of the cardinal clinical features of abdominal pain, vomiting, rectal bleeding and abdominal distension appeared in about 58.3% (49) of our patients, the preoperative diagnosis were different and varied (Table 2). This, obviously, led to delay in surgery at times.

**Table 2: Intussusception in Kumasi - Preoperative diagnosis.**

Disease entity	No. of cases (%)
1. Intestinal obstruction	26 (30.9)
2. Enema colitis	21 (25.0)
3. Intussusception	16 (19.0)
4. Dysentery	7 (8.3)
5. Peritonitis	5 (6.0)
6. Acute abdomen	5 (6.0)
7. Gastroenteritis	2 (2.4)
8. Tumour of the colon	2 (2.4)
Total	84 (100.0)

Each patient was adequately rehydrated with intravenous fluids for variable periods of time (from 3 to 24 hours) before surgery was performed. Whenever necessary blood transfusions were also carried out to correct any anaemia, before, during or after surgery.

Preoperatively, patients were usually put on a combination of antibiotics, which included ampicillin, gentamycin and metronidazole, which was continued during surgery and postoperatively for a minimum of 7 days. As soon as adequate rehydration was established, prompt surgery was carried out.

Intra-operatively, the anatomical type of intussusception in each case was noted and recorded in the operation notes (Table 3), as well as various other findings, considered to be predisposing factors (Table 4).

**Table 3: Intussusception in Kumasi - Apex of Intussusception.**

Anatomic type	No. of Cases		Total (%)
	Children	Adults	
1. Enteric			
a) Ileoileal	8	2	10 (11.9)
b) Ileocolic	20	2	22 (26.2)
c) Ileocaecal	31	4	35 (41.7)
2. Colonic			
a) Caeco-colic	3	2	5 (5.9)
b) Colo-colonic	10	2	12 (14.3)
Total	72	12	84 (100.0)

**Table 4: Intussusception in Kumasi - Intraoperative Findings**

Intraoperative finding	No. of Cases (%)
1. Mobile caecum	44 (52.4)
2. Enlarged mesenteric lymph nodes and Peyer's patches	5 (5.9)
3. Adhesions	3 (3.5)
4. Malrotation of the intestine	2 (2.4)
5. Lymphoma of the bowel	2 (2.4)
6. Polyp of the bowel	1 (1.2)
7. Blind loop syndrome	1 (1.2)
8. Herbal enemas of various concentrations	13 (15.5)
9. No factor found	13 (15.5)
Total	84 (100.0)

The incidence of small bowel intussusception in this series was 79.8% (67), compared with 29.9% (17) for large bowel intussusception.

Operative manual reduction without resection was successful in 64 (79.2%) patients, with 4 intussusceptions reducing spontaneously when brought out into the operative wound. Bowel was resected in 20 (23.8%) patients as a result of non-viability of bowel (9 cases), its irreducibility (6), perforation of intestine (3) and a tumor being the lead point (2) - Table 5.

**Table 5: Intussusception in Kumasi - Results of Surgical Treatment**

Type of treatment	No. of cases (%)	Deaths
1. Operative reduction only	60 (71.4)	5
2. Spontaneous reduction	4 (4.8)	
3. Resection and anastomosis for:		
a) Non-Viable bowel	9 (10.7)	2
b) Irreducibility of bowel	6 (7.1)	1
c) Perforation of bowel	3 (3.6)	
d) Tumour	2 (2.4)	
Total	84 (100.0)	8 (9.5%)

## DISCUSSION

Our patients with intussusception have always presented late to hospital for treatment. The reasons for this late presentation (more than 48 hours) we presume to be: ignorance on the part of mothers, self-medication, inadequate knowledge of the clinical features of intussusception on the part of district medical workers (who usually refer the cases to us) and

inadequate communication and transportation [7].

Among the children with intussusception below the age of one year, the typical patient was a 5.8-month old healthy boy, comparable to the age group noted by S.T. Dawod et al. [8] in their series. Intussusception in adults in our hospital is uncommon, an average yearly occurrence of 1.2 cases.

About 10% [8] of our patients gave a history of diarrhoea indistinguishable from gastroenteritis and eventually found their way into the surgical unit through the paediatric wards. It requires a high degree of suspicion on the part of doctors to be able to diagnose this problem accurately to prevent delays in treatment.

As stated above, all our patients underwent surgical treatment and the lesions supposed to have been the cause of the intussusception recorded (Table 4). The most frequent predisposing factors were mobile caecum - 44 (52.4%) cases, enlarged mesenteric lymph nodes and Peyer's patches (5 cases), which was also noted to be the cause of intussusception in 17 patients of P.T. Nmadu's series (9). Other factors included adhesions (3 patients), malrotation and lymphoma of bowel (2 patients each), a polyp of the large bowel and a blind loop syndrome - a case each. Of our patients, 13 developed typical clinical features of intestinal obstruction, after performing enemas at home using various strong herbal preparations. Most of such patients were diagnosed as having enema colitis but intra-operatively were found to have intussusception. In the remaining 13 patients, no predisposing factors were found.

The causes of intussusception in the 12 adults were: lymphoma of the bowel (2), polyp of the large bowel (1), blind loop syndrome (1), adhesions (1) and post-herbal enema (5). The rest (2) were idiopathic, i.e. no pathology was found.

In our patients, where there was a mobile caecum which was not resected for one reason or the other (necrosis or perforation of intestine or inability to manually reduce the intussusception) we fixed it with sutures to the parietal peritoneum of the right parabolic gutter. We, therefore, advise caecopexy in patients with mobile caeca to prevent recurrence of intussusception in the postoperative period.

Though we are not sure yet of the role strong herbal enema preparations play in the development of intussusception, we presume that, the herbal enemata, which are usually hypertonic, chemically irritate the bowel, producing hyperperistalsis. And, in the presence of factors such as tumours, adhesions, mobile caeca and so on, can lead to intussusception. It is a known fact that among Ghanaians, the practice of giving enemas is widespread. Some people do regularly purge themselves or their children with strong herbal enemas for no obvious medical reason, but just for the sake of cleaning the bowels; others take to enemas for any ailment, including fever, constipation, etc. In the light of the foregoing, we strongly advise against the indiscriminate use of such enema preparations for purging children or anyone, for that matter.

In the presence of a lead point, such as a lymphoma of the bowel, the bowel should be resected together with the tumour and an end-to-end anastomosis done. Patients with intussusception secondary to a side-to-side anastomosis (forming a blind loop syndrome) should also be treated by bowel resection with an end-to-end anastomosis carried out.

Mortality in our series was 9.5%. Out of the 8 deaths, 5 were children, the rest were adults. Death usually occurred within 7 days in the postoperative period, mainly due to bronchopneumonia and septicæmia. In order to cut down on the resection rate as well as the overall mortality rate, we believe that a good knowledge of the major clinical features of intussusception by medical workers in the district health centres will go a long way to reducing the length of the average duration of symptoms before referral to the major treatment centres.

A high postoperative morbidity rate and a prolonged hospital stay of an average of 12 days (from 7 to 27 days) were mainly a result of the late presentation to hospital and also, due to various complications as shown in Table 6. The commonest complications were wound infection and pneumonia. This resulted in long hospital stays for such patients and high morbidity.

**Table 6: Intussusception in Kumasi - Complications of Surgical Treatment**

Complications	No. of cases (%)	Deaths
1. Wound infection	18	
2. Bronchopneumonia	13	6
3. Aneamia	8	
4. Scepticaemia	3	2
Total	42	8

## CONCLUSION

The predisposing factors that may cause intussusception in our environment are many and varied. They include: mobile caecum, enlarged mesenteric lymph nodes and Peyer's patches, lymphoma of the bowel, malrotation of the intestine, polyp of the large bowel, and blind loop syndrome. Attempts should, therefore, be made during surgery to elicit these factors and eliminate them, where possible, so as to prevent recurrence of intussusception.

We strongly believe that concentrated herbal enemata can lead to intussusception by causing chemical irritation of the bowel and hence hyperperistalsis of it. We would, therefore, advise against their indiscriminate use to prevent any complications, intussusception inclusive.

The recurrence rate in our series was zero.

### **Acknowledgement:**

We are grateful to Prof. A.P. Asafo-Agyei of the Komfo Anokye Teaching Hospital for reading through the script and offering good suggestions. We also express our appreciation to the records officers of the same hospital for helping with the sorting out of the cases.

### **REFERENCES**

1. **Raudkivi, P.J., Smith, H.L.M.:** Intussusception: Analysis of 98 cases. *Brit. J. Surg.*, Vol.68, pp. 645-648, 1980
2. **Adjuyigbe, O., Fashakin, E.O.:** Acute intestinal obstruction in Nigerian children. *Trop. Gastroenterol.* Vol.10(1), pp.34-40, 1989.
3. **McGovern, J.B., Gross, R.E.:** Intussusception as a postoperative complication. *Surg.* Vol.63(3), pp.507-513, 1968.
4. **LaSalle, A.J., Andrassy, R.J., Page C.P. et al.:** Intussusception of the appendiceal stump. *Clin. Pediat.* Vol.19(6), pp.432-435, 1980.
5. **O'Brien, S.E.:** Intussusception complicating appendectomy: A case report. *Canadian J. Surg.* Vol.9(3), pp.278-279, 1966.
6. **Bower, R.J., Kiesewetter, W.B.:** Colo-colic intussusception due to a haemangioma. *J. Pediat. Surg.* Vol.12(5), pp.777. 1977.
7. **Udezue, N.O.:** The surgical treatment of intussusception in Kaduna, Nigeria. *East African Med. J.* Vol.65(11), pp.764-770. 1988.
8. **Dawod, S.T., Osundwa, V.M.:** Intussusception in children under 2 years of age in the State of Qatar: analysis of 67 cases. *Ann. Tropical Paediat.* Vol.12, pp.121-126, 1992.
9. **Nmadu, P.T.:** The changing pattern of infantile intussusception in Northern Nigeria: a report of 47 cases. *Ann. Tropical Paediat.* Vol.12, pp.347-350, 1992.