EARLY RECURRENT ACUTE INTUSSUSCEPTION IN CHILDREN

BY

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Acute intussusception in children is not a common condition. Spence and Court (1950) traced every child with this condition in the City of Newcastle-upon-Tyne during a six-year period and found the incidence was 3.8 per 1,000 births, or one case per family practitioner during that time. Recurrence of acute intussusception in children can be expected even less often. Thorndike (1932) reported five cases but found only 75 others in the literature. Since then Killins and Clagett (1941) and Mastin (1942) have described one case each, but the number even with the four cases reported here remains small. The following cases show that a recurrence can occur in the immediate post-operative period, a fact which does not seem to have been emphasized before.

Case 1

A female child aged 7 months was admitted to Bridgend General Hospital on January 22, 1950. She was an only child, was breast-fed until weaning one month previously, and had been quite well until the previous evening, when she began to have attacks of severe abdominal pain which, the mother stated, made the child draw up her knees. There had been some vomiting of food shortly after its ingestion. The bowels had been regular, but no action had occurred since the previous day. There were no urinary symptoms. On examination the child was seen to be in good general condition, and well nourished, and showed no signs of dehydration. Examination of the abdomen was difficult, as the child had repeated attacks of colic. No tumour was felt on abdominal or rectal examination, but whilst the latter was being performed the child had a bowel action with streaks of bright blood and mucus. A presumptive diagnosis of intussusception was made and operation undertaken immediately.

First Operation.—Under general anaesthesia a lower right paramedian incision was made and an ileo-colic intussusception was found, the apex of which had reached the splenic flexure. This was easily reduced. Enlarged mesenteric glands were noted but no cause was found for the intussusception.

The post-operative course was uneventful until January 30, when the child became restless and was obviously in some pain. There was mild infection of the wound but no physical signs were elicited on abdominal examination. Rectal examination revealed a small quantity of foul-smelling soft faeces but no blood. There was some dehydration which warranted an intravenous transfusion of half-strength Hartmann's solution. Examination of the urine showed a moderate growth of coliform organisms. On the following day the abdomen was obviously distended and the bowel sounds were greatly increased and high pitched. A diagnosis of acute small-bowel obstruction was made and laparotomy undertaken.

Second Operation.—Under general anaesthesia a lower left paramedian incision was made and an ileo-ileal intussusception was found with distension of the proximal small intestine. The origin of this intussusception was proximal to the previous one, the distal bowel now appearing normal, and, except for the enlarged mesenteric glands previously

noted, no other abnormality was found. There was some superficial wound infection following the second operation which delayed convalescence, but the child was discharged in a month and was still well three years later.

Case 2

A female child aged 7 months was admitted to Bridgend General Hospital on May 11, 1950, with a history of repeated attacks of abdominal pain and vomiting for two days. She had also been passing blood and mucus per rectum for two days. Previously she had been a healthy child who was breast-fed until the age of 5 months, and had since then been fed on a proprietary milk food. On examination her general condition was good, she was having repeated attacks of abdominal colic, and a tumour was palpable in the left iliac fossa. On rectal examination a mass could be felt at the tip of the finger; it was continuous with the abdominal mass; there was blood on the examining finger; and a diagnosis of acute intussusception was made.

First Operation.—Under general anaesthesia a right paramedian incision was made. Two intussusceptions were found; an ileo-colic one originating just proximal to the caecum, and a colo-colic one in the left iliac fossa. The latter was antiperistaltic in the descending colon. The caecum, the ascending colon, and descending colon each had a long mesentery. The intussusceptions were reduced without difficulty.

The post-operative course was normal until May 15, when the child again had spasms of abdominal pain and vomited copiously. The abdomen was not distended, but the bowel sounds were high pitched and increased, and rectal examination revealed some blood and mucus. Recurrent acute intussusception was diagnosed and laparotomy undertaken immediately.

Second Operation.—A lower left paramedian incision was made and some free fluid found in the peritoneal cavity. An ileo-ileal intussusception 8 to 9 in. (20 to 22.5 cm.) in length was situated 2 ft. (60 cm.) from the ileo-caecal valve, the proximal small intestine being greatly dilated. The intussusception was reduced. No apparent cause for the recurrence was found. The bowel at the sites of the previous intussusceptions was normal. The convalescence was uneventful, the child being discharged in three weeks. There had been no further recurrence on follow-up (1953).

Case 3

A previously healthy male child aged 2½ years was admitted to St. James's Hospital, Balham, on January 21, 1951, with a history of recurrent attacks of abdominal colic and vomiting for the past 36 hours. The bowels had not been open for 24 hours and there were no urinary symptoms. On examination the child was pale and looked ill, but there was no gross dehydration. Some tenderness was present in the right iliac fossa but no tumour was palpable in the abdomen. On rectal examination there was some bloody discharge on the examining finger. A presumptive diagnosis of intussusception was made, and operation performed immediately.

First Operation.—A lower right paramedian incision was made under general anaesthesia and an ileo-ileal intussusception was found about 5 ft. (150 cm.) from the ligament of Treitz; it was reduced. No other abnormality or cause of the intussusception was found.

On January 24 vomiting of most feeds occurred, but no abdominal physical signs were found. Vomiting persisted, and on January 26 some signs of dehydration were apparent and a radiograph of the abdomen showed dilated loops of bowel in the upper abdomen with fluid levels. Laparotomy was immediately undertaken.

Second Operation.—Under general anaesthesia the previous wound was reopened and about 18 in. (45 cm.) from the ileo-caecal valve an ileo-ileal intussusception was found and reduced. A second intussusception about 8 ft. (240 cm.)

from the ileo-caecal valve was also reduced. The cause of the intussusceptions could not be found, and the site of the previous intussusception was normal. The child made an uneventful recovery and was discharged home on February 12.

Case 4

A female child aged 6 months was admitted to Llandough Hospital on October 29, 1952, with a history of vomiting after each feed two weeks earlier; this had become less, and four days before admission the child had had attacks of screaming and drawing up of the legs. She had vomited green fluid and had been constipated for two days, but had passed clots of blood per rectum on the day of admission; only small amounts of urine had been passed. On examination the child showed signs of severe dehydration. A large mass 3 in. (7.5 cm.) in length was palpable in the left iliac fossa, the apex of an intussusception was palpable per rectum, and there was blood on the examining finger. A diagnosis of acute intussusception was made.

First Operation.—The abdomen was opened through a lower right paramedian incision and an ileo-colic intussusception was found, extending to the pelvic colon. It was easily reduced.

On November 2 a loose green stool was passed. On November 4 the child vomited green material, the stool was relaxed and contained mucus. The abdomen was distended and tympanitic; bowel sounds were present. A radiograph of the abdomen showed distension of the small intestine. Treatment by intravenous fluids and gastric suction was begun, but as the condition did not improve laparotomy was undertaken on November 6.

Second Operation.—An ileo-ileal intussusception was found, 10 in. (25 cm.) from the ileo-caecal valve. There was no obvious cause for the intussusception. Convalescence was uneventful, the child being discharged on November 17.

The child was again admitted to the Cardiff Royal Infirmary on February 1, 1953, with a history of sudden onset of screaming and the passage of bright red blood per rectum on one occasion, but no vomiting. On examination the general condition was found to be good, no abnormality was noted in the abdomen, and a hard faecal mass was palpated in the rectum. Plain radiography of the abdomen showed no abnormality. On the following day the bowels opened normally, the child was discharged, and was well on follow-up on March 16, 1953.

Discussion

Killins and Clagett (1941) reported a case of recurrent intussusception at the Mayo Clinic and believed the condition to be rare. They further stated that "the patient, by undergoing two successful operations for intussusception, has become something of a surgical curiosity." Thorndike (1932), in searching the records of the Children's Hospital, Boston, found that 405 cases of acute intussusception in children had been admitted between 1869 and 1932, and of these only five had had post-operative recurrences, which is a ratio of about one in 80. As intussusception itself is not uncommon, this means that a small but nevertheless important number may go on to recurrence. Mastin (1942) reported a case in which three separate intussusceptions took place within twelve months.

The period of time between the initial attack and the recurrence varies considerably. In Thorndike's series the average time was five months and in all his cases the patient had left hospital. Arntzen and Helsted (1929) reported the longest interval between the initial attack and recurrence of eight years, whilst Cohen (1921) reported a case occurring 30 hours after operation. The cases reported above recurred at eight, four, five, and six days respectively after operation, and come into some of the earliest groups recorded.

The cause of acute intussusception when there is no underlying disease such as a tumour or Meckel's diverticu-

lum is still unsettled and theories involving neuromuscular dysfunction and enlarged Peyer's patches still remain unproved. It is therefore not surprising that there is no satisfactory theory for the recurrence of acute intussusception. Mastin (1942) stated that in more than half the cases of acute intussusception the caecum was found to be mobile, and that he anchored the latter in the right iliac fossa. This caecal mobility was present in Case 2, and the long mesentery in both ascending and descending colon may well have been an aetiological factor in the causation of the original intussusception, but it does not explain the recurrence, which was ileo-ileal in origin. In Cases 1, 3, and 4 there was no mobility of the caecum.

Conclusion

Recurrent acute intussusception in children, although rare, is a condition to be borne in mind even in the early post-operative days, and careful observation of these small patients is recommended so that laparotomy may be undertaken early in this condition. The diagnosis is easier to make when there is a longer interval and the patient has been discharged from hospital, but in the post-operative period it may easily be overlooked and an incorrect diagnosis made because the child has already had an intussusception. We wish to draw attention to this possibility of early post-operative recurrence so that treatment may be undertaken. Immediate operation is the form of treatment recommended, and, as imbalance very readily occurs, attention should be paid to the fluid requirements of the child, intravenous infusion being carried out if necessary. If there is a mobile caecum the anchoring of this is suggested as a measure that may prevent further recurrence, but if no such mobility exists no further treatment other than the reduction of the intussusception can be advised until the aetiology of the condition is more fully understood.

Summary

Four cases of early recurrent acute intussusception in children treated successfully are reported.

The rarity and importance of the condition are shown.

The importance of early diagnosis, based on the clinical state and radiological findings, is emphasized.

The treatment is operative, with reduction of the intussusception.

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At Harrow trust funds of about £20,000 of the former district nursing association are to be used to establish a physiotherapy service for residents confined to their homes. Treatment will be restricted to the less well off, who will pay varying charges according to their means or receive it free if in needy circumstances. The diagnosis and prescription of the family doctor will be sufficient for the physiotherapist to proceed with treatment. It is expected that local private physiotherapists will be willing to undertake the service, but if that is not possible a van, or vans, equipped with apparatus and in charge of a driver-physiotherapist will be used.