Intussusception in Qatar: five years experience

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ABSTRACT
Objectives: Intussusception is a common pediatric surgical emergency. The aim of the study is to present our experience in the only institute where pediatric surgery is carried out in the State of Qatar. Methods: All cases of intussusception admitted to Hamad Medical Centre, Qatar between 1988-1993 were evaluated. Results: Barium enema was used for diagnosis and primary management and reduction was achieved in 51% of cases. We had no mortality among our patients. Conclusions: Our results, on the whole, were comparable to the results reported from other centers.

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Intussusception is one of the common pediatric surgical emergencies. It occurs most frequently in the first year of life, especially between the age of six and twelve months.1 During the five years between 1988 and 1993, 54 patients with intussusception were managed at the Hamad Medical Centre (HMC). This institution is the only hospital in Qatar with a pediatric surgical service, therefore the figures in this article reflect the total experience of this ailment in the State of Qatar, during this period.

Materials and methods. Fifty four patients with intussusception were admitted to HMC between 1988 and 1993, an incidence of 11 patients per year. Forty five patients (83%) were aged between 6 and 12 months, the eldest being 30 months old, (Fig.1). There were 39 males and 15 females, a ratio of 2.6:1. The seasonal incidence is shown in (Fig. 2). Among the 54 patients only 2 presented after an attack of upper respiratory infection, while the remainder had gastroenteritis prior to presentation. The presenting symptoms and signs are shown in Table 1. The duration of symptoms varied between 3 hours and 4 days. All patients suspected of having intussusception had complete blood count, blood urea and electrolytes and plain abdominal radiograph. The patients were then resuscitated and then transferred for barium enema diagnosis and reduction. Air fluid levels were present in 8 patients on plain abdominal radiograph. Barium enema reduction was attempted in 47 patients, regardless of the duration of intussusception, as long as there was no signs of peritonitis. If barium enema failed, patients underwent an operative reduction. In the remaining 7 patients there were sign of peritonitis and it was decided to operate on them straight away after resuscitation. Operative reduction was required in 28 patients (52%). Gangrenous bowel was found in only one patient, who underwent resection of the terminal ileum, cecum and proximal colon and an ileocolic anastomosis. Five patients had intussusception secondary to organic lesions. Four had lymphoma (aged 2 years). Resection and primary anastomosis was carried out on these patients. Incidental appendectomy was carried out in 6 patients.

Results. Barium enema was successful in 24 of 47 patients (51%). In 2 patients reduction was incomplete, but when the patients were operated upon, intussusception was found to be reduced. Of 29 patients who presented before 12 hours, 15 were reduced (52%). Of 18 patients who presented after 12 hours, 8 were reduced (44%). Among the 8 patients who had air fluid levels on plain abdominal radiograph, barium enema reduction was successful in 3 (37%). We had no mortality among our patients. One patient developed adhesive intestinal obstruction 6 months after operation, released by operation. This patient had incidental appendectomy carried out during the operative reduction of intussusception.

Discussion. The etiology of intussusception in childhood is uncertain, though enlargement of lymphoid tissue of the gut as part of a generalized virus infection is thought to contribute to it.2,3 In our series all patients 2 had gastroenteritis prior to presentation. This is different from other reports.4 In Qatar, where the expatriate work force constitutes a big proportion of the population, a large number leave for holidays outside the country during the summer months. This might explain the low incidence during the months of July, August and September. The

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number of patients in each nationality is shown in Table 2. As it was difficult to obtain the different expatriate's population numbers, the incidence in each nationality was not possible to calculate. In this series, 5 patients (9%) had secondary intussusception. Four out of these were due to Meckel's diverticulum and 1 due to lymphoma. Secondary intussusception is suspected in any child above the age of two years, with a typical presentation. Operative reduction is recommended in these patients. It is also recommended in recurrent intussusception, as this might be due to a secondary cause. Operative reduction was the standard method of treatment in many centers, until it was shown that the hydrostatic method was successful. Recently there was a revival of the gas enema for intussusception reduction in tertiary pediatric centers. In this series barium enema reduction was used as the primary mode of diagnosis and treatment in the first two years of life. It was carried out regardless of the duration of symptoms or the presence of signs of obstruction on plain abdominal radiograph, as long as there were no signs of peritonitis. We took reflux of barium into the terminal ileum as a sign of complete reduction. If the barium failed to reflux into the terminal ileum or the intussusception was reduced to the cecum, we observed these patients for a couple of hours and then repeated the barium enema, assuming that the general condition of the patient was good. This was to avoid negative exploration, as was experienced in two of our patients. Our experience indicated the earlier the presentation the higher the chance of barium enema reduction. Air fluid levels on plain abdominal radiographs was not a contraindication for barium enema reduction, although the chances of achieving this reduction was reduced. We have stopped doing incidental appendectomy, realizing the possible importance of the appendix in immunity and the possibility of increasing the change of post operative adhesions.

**Conclusion.** Intussusception is one of the most common pediatric surgery emergencies, barium enema being the main diagnostic and therapeutic tool. It is safe when carefully carried out by a trained radiologist. There is no limitation in the trial of barium enema reduction as long as the patient shows no signs of peritonitis. Our results on the whole are comparable to results of other series.

**References**