Laparoscopic assisted reduction of jejuno-jejunal intussusception with resection of jejunal polyp in children: A case series

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ABSTRACT

Jejunojejunal intussusceptions secondary to polyp as a lead point are extremely rare. Only a few cases have been reported in the English literature. Here, we report the case series of two such cases who presented to us as irreducible intussusceptions and were managed successfully by laparoscopic-assisted transumbilical reduction and resection. Thus laparoscopic-assisted management of this rare presentation is feasible even in smaller children.

Keywords: *Intussusception, Laparoscopic, Polyp.*

Intussusception is the invagination of one part of the intestine into another. Most common being ileocolic in 85% cases. Small bowel intussusception accounts for only 2.5% of cases. Most are transient and only 5% have a pathological lead point [1]. Though polyp isthe second most common lead point forintussusception [2], they are morefrequently found within the colon and rectum but mayrarely occur in the stomach, duodenum, and smallintestine as being reported in indexed cases [3]. Rarity of the jejunojejunal intussusceptions, and its association with a polyp in children being even rarer, accounts for the difficulty in diagnosis pre-operatively [4].

Since only a few case reports are there for such an association in children, it is important to report even two such cases, who presented to us within less than a year and were successfully managed by laparoscopic-assisted reduction and resection of the polyp.

CASE SERIES

Case 1

A nine-year-old boy presented with complaints of abdominal pain and non-bilious vomiting for one day. On clinical examination, the patient was anemic and vitally stable. Local examination revealed a lump extending from epigastrium to the left iliac fossa. AnX-ray abdomen was found normal. Ultrasound abdomen showed 13 cm long segment of small bowel intussusception. But it being a rare possibility and suspecting an ileocolic intussusception, an ultrasound-guided hydrostatic reduction was attempted twice but failed. So,to confirm the presence of small bowel intussusception and to know any pathological lead point, a computed tomography (CT) abdomen was done which showed 17 cm long small bowel intussusception with mesenteric lymphadenopathy (Fig. 1).

Infra-umbilical, a 5mm camera port was inserted and the presence of jejunojejunal intussusception was confirmed which was reduced successfully with the help of atraumatic graspers after inserting direct instruments through 5mm incision in left iliac fossa and hypogastrium. At the end of reduction,the last loop of jejunum popped out and on sounding the loopwith grasper raised the suspicion of some intraluminal pathology being present.The loop of bowel was brought out through lateral extension of infra-umbilical incision towardsthe left side. On enterotomy at the suspicious site where some indentation (Fig. 2) was also present externally, a pedunculated polyp measuring 1.5 x 1 x 1 cm was found at the mesenteric border. Limited jejunojejunal resection and single layer hand sewn extra-mucosal anastomosis was done and specimen sent for histopathology which was suggestive of hamartomatous polyp (Fig. 3).

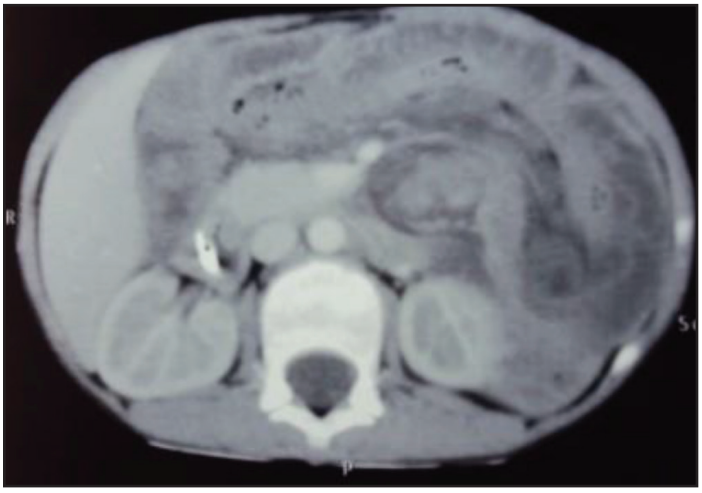

Figure 1: CT Abdomen showing jejunojejunal intussusception (case 1).

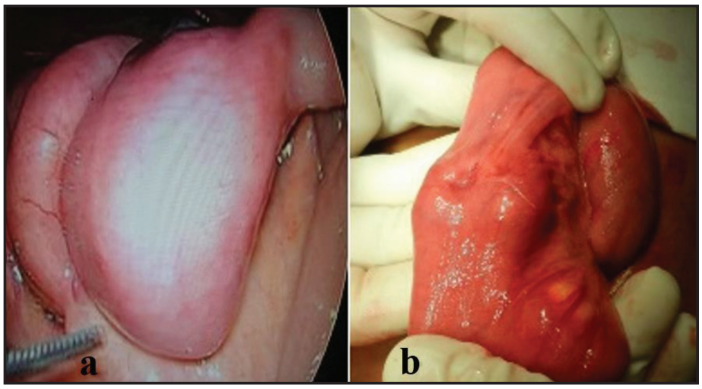

Figure 2: (a) Laparoscopic view of intussusception and (b) lead point externally(case 1).

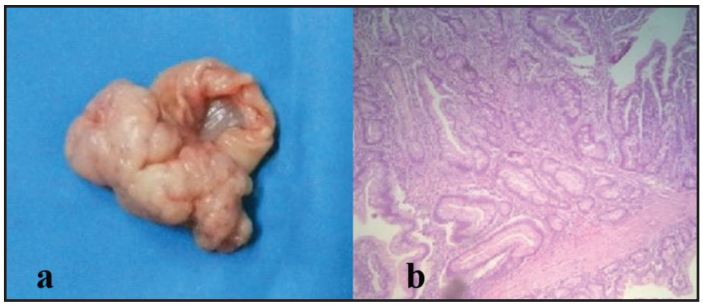

Figure 3: (a) Polyp in resected jejunum; (b) Hamartomatous polyp on histology (case 1).

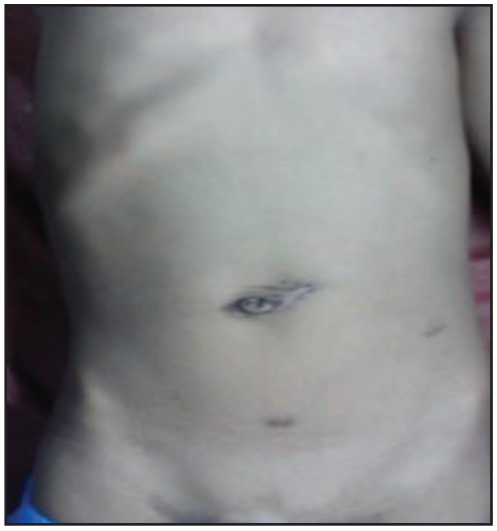

Figure 4: Postoperative cosmetic result(case 1).

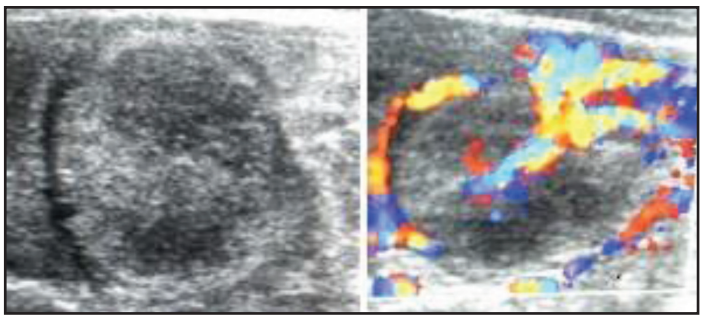

Figure 5: USG images showing intussusception with lead point (case 2).

In the postoperative period, the boy had an uneventful recovery (Fig. 4). On follow-up, colonoscopy ruled out the presence of any other polyp and the child did not have any hyperpigmentation.

Case 2

A thirteen-month-old girl child presented with complaints of recurrent episodes of abdominal pain and vomiting requiring multiple admissions. General and systemic examination of the child was unremarkable. Ultrasound abdomen was suggestive of small bowel short segment intussusceptions; however, it was transient. The patient had undergone CT abdomen and Barium meal follow through, which were inconclusive and failed to show a lead point for this chronic recurrent intussusception. Repeat ultrasound was able to pick up a polyp as lead point (Fig. 5).

Diagnostic laparoscopy was done using 5 mm camera port through infra-umbilical incision which confirmed a jejunojejunal intussusception. An intussuscepted loop was then brought out through extension of infra-umbilical incision laterally towardsthe right side. Intussusception was reduced easily with intraluminal mass felt as a lead point. Enterotomy was done at the suspicious site on antimesenteric border and a pedunculated polyp of size 1.5 x 1 x 0.5 cm was present at the mesenteric border. Limited jejunojejunal resection was done with single layered extra-mucosal end to end anastomosis. Postoperative period was uneventful.Histopathology was suggestive of hamartomatous polyp (Fig. 6).

DISCUSSION

The term “intussusception” was first used by John Hunter in 1789 to define a portion of the intestine that had invaginated into another bowel loop. On detailed review of English literature, we could find only three reported cases of juvenile polyp causing jejunojejunal intussusception in children [5,6,7]. Juvenile polyps are usually solitary, non-familial, hamartomatous epithelial lesions that are believed to occur inapproximately 1% of preschool-aged children, with a peakincidence between 4 and 5 years of age [3]. They are usually located in the large intestine, especially at the rectosigmoid area [5,6]. The jejunum is an unusual site for the juvenile polyp to occur thus having its technical difficulties in diagnosis and management.

Ultrasound can detect the pathological lead point in only 66% of cases. Rest of the irreducible or small bowel intussusceptions need further evaluation for identifying a pathological lead point in the form of CT enteroclysis, Meckel scan, Barium meal follow through, etc. even then, a definitive diagnosis is on diagnostic laparoscopy or laparotomy [8]. Currently, virtually all hemodynamically stable infants andchildren with the absence of peritoneal signs of perforation or acute obstruction receive an attempt at non-operative reduction with water-solublecontrast or pneumatic reduction with air, regardlessof the length of the history [9].

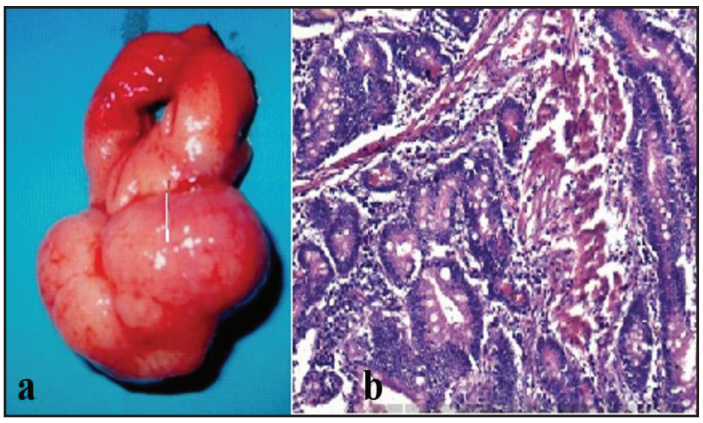

Figure 6: (a) Polyp in resected jejunum; (b) hamartomatous poly on histology (case 2).

Laparoscopy was previously used only for diagnostic purpose but nowadays there is an increasing trend towards laparoscopic-assisted management of intussusceptions and resection of lead point through the minimal extension of an umbilical incision. Tan and Bianchi [10] first advocated the trans-umbilical approach for exposure of the pyloric olive in infants with hypertrophic pyloric stenosis. This approach has become very popular among pediatric surgeons, who have usedthis surgical access for the treatment of a variety of abdominal conditions in children. The advent oflaparoscopy has rendered this approach even more suitable because of the magnificent visualization of the entireabdominal cavity, thus obviating the risks related to a blind trans-umbilical exposure [6].

Both the cases reported by us did not havea history of bleeding per rectum or chronic anemia, as polyps usually have. Both these cases showed ends of a wide spectrum including one presenting at 13 months and other at 9 years. One without lump and other with lump although not a classical, one presenting with recurrent episodes and other not. Thus, the presenting features cannot be generalized for this disease and pathological diagnosis remains obscure.

Sah SP *et al* reported the first case report of a 10-year-old child with jejunojejunal intussusception managed by laparotomy [5]. A first case report describing the successful laparoscopic-assisted resection of jejunal polyp was reported by S. Ceccati *et al* for a child who was just three years old, using this technique for excision of a gastrointestinal polyp [6]. Our institute has reported a neonate with antenatal jejunojejunal intussusception due to polyp leading to atresia [7].

We report 13-month-old child, the youngest child of this rare pathology to be reported in the literature and to be managed by laparoscopic-assisted resection. Both are 4thand 5thcase reports ever reported for the disease and 2nd and 3rd for laparoscopic-assisted management in English literature.

CONCLUSION

Isolated juvenile polyp of jejunum causing jejunojejunal intussusception is extremely rare. We report two such cases managed successfully by laparoscopic-assisted resection. Thus laparoscopic-assisted management of this rare presentation is feasible even in smaller children.

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