

Tube enterostomy in the management of intestinal atresia

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ABSTRACT

A simple technique was used successfully for retraining maximum bowel length in a premature baby born with type 3A jejunal atresia. Primary end-to-end anastomosis of the tip of the dilated proximal segment to the remaining viable distal 5 cm of ileum was performed. A tube passed via the cecum proximally into the small bowel acted as a stent for the anastomosis and decompression of the bowel contents in the proximal dilated segment. This simple method may be a viable option to avoid resection of the dilated segment when the bowel length is marginal.

Keywords: Intestinal atresia, tube enterostomy.

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The standard operative treatment of intestinal atresia is liberal resection of the proximal bulbous segment, which usually lacks a coordinated peristalsis, followed by end to-oblique or end to-back anastomosis.¹⁻³ Unfortunately, some shortening of the total intestinal length is noted in about 20% of cases particularly in infants with type 3 and 4 jejuno-ileal atresia.⁴ In cases of extreme shortening of intestinal length, preservation of the proximal dilated bowel is mandatory to avoid the sequelae of short bowel syndrome. Various techniques have been described to preserve the dilated bulbous proximal segment in these cases, such as: tapering jejunodudenoplasty;⁵ antimesenteric intestinal plication⁶ and Bianchi procedure.⁷ Each of these techniques has its potential complications as well as variable success rates.

Case Report. A 3-day old, 1.8 kg, preterm male infant presented with intestinal obstruction. Vigorous resuscitation was needed to treat the coexisted shock, hypothermia and acidosis. Abdominal exploration revealed jejunal atresia (type 3A) at 25 cm from the duodenojejunal junction. The

proximal segment was markedly dilated until the duodenojejunal junction. The distal small bowel was matted together. The non-viable small bowel, which extended until the distal 5 cm of ileum, was resected. The posterior half of an end-to-end anastomosis was performed between the tip of the proximal dilated segment and the distal ileum. A number 12 French tube with multiple holes was placed via the appendectomy stump and passed through the ileocecal valve to the proximal segment. The anastomosis was then completed around the tube. The tube was brought out through a separate stab in the right iliac fossa. Entral feeding (pregestimil) was started on the 5th postoperative day. The full amount was tolerated on the 15th postoperative day. Intermittent clamping of the enterostomy tube was started at day number 10 and the tube was removed 3 weeks later.

Postoperative abdominal plain x-ray, as well as contrast study, demonstrated efficient decompression of the dilated proximal segment and regaining of its contractile ability as shown by passage of the contrast material to the colon (Figures 1a & 1b). The patient developed a few episodes of diarrhea and

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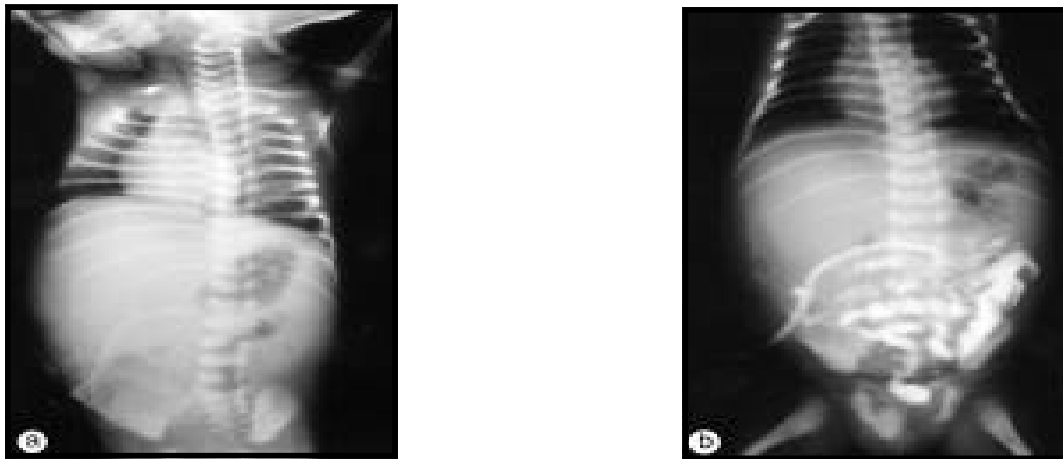


Figure 1: (a) Plain abdominal radiograph demonstrates absent gaseous dilatation denoting efficient decompression of the proximal jejunal segment. (b) Gastrointestinal contrast study 3 weeks postoperatively shows regaining of the intestinal contractility as demonstrated by passage of the contrast material (gastrographin) to the colon.

dehydration during the first 6 months necessitating hospital admissions on 4 occasions for fluid therapy and antibiotics, however, his growth rate remained within the 20th percentile.

Discussion. Intestinal atresia is characterized with marked dilatation of the segment proximal to the obstruction, with collapse of the tiny segment beyond. To avoid long standing functional obstruction at the anastomosis and the development of blind loop syndrome, resection of the dilated bulbous tip, which means sacrificing as much as 10 to 15 cm of the intestine, and performing an end-to-oblique or end-to-back anastomosis has been recommended.¹⁻³ In the present case, the proximal dilated segment was almost the only remaining viable part of small intestine and thus its preservation was mandatory. The poor general preoperative condition of our patient dictated a simple fast method for decompression of the proximal bowel, which was accomplished successfully by the use of tube enterostomy. The success of the present technique is unusual in that the proximal bowel regained prograde function relatively early. This unusual scenario may be accounted for by vascular accident occurring shortly before birth.

Prematurity is recognized as a real risk factor in the early preoperative period. However, the length of remaining bowel may be doubled in length in these infants.⁸ This may explain why pre-term infants with an extensive atresia, as in the present case, may exhibit intestinal adaptation earlier than full-term infants with an identical length of residual small intestine.⁴ Several authors reported success with use of tube enterostomy in the management of patients with meconium ileus.⁹ Other authors used stamm gastrostomy or a transnasal Replogle tube for gastric decompression in neonates with high jejunal or

duodenal atresia.² However, the use of this simple procedure in management of patients with intestinal atresia has not been reported previously (to the best of my knowledge). Tube enterostomy is a simple technique, which possesses several advantages. 1. it allows efficient decompression of the proximal dilated segment until it regains its contractile ability; 2. the anastomosis is completed more rapidly with the tube serving as a stent and; 3. the postoperative intestinal contents discharged through the tube are easily collected and can be accurately replaced. However, more case studies as well as longer follow up periods are needed before the technique can be recommended as an alternative procedure when bowel length is of critical importance.

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