CASE REPORT

Intussusception as a Complication of Gastrostomy Tube: A Case Report

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Summary

A neurologically impaired child who had fundoplication and gastrostomy done for gastroesophageal reflux at the age of three, presented two years later with intestinal obstruction. She underwent laparotomy and was found to have antegrade jejuno-jejunal intussusception. Intussusception is an unusual but recognised complication of gastrostomy tube placement.

Key Words: Intussusception, Gastrostomy tube complications

Introduction

Intussusception is an uncommon complication resulting from the use of intestinal tubes, as in tube-jejunostomy[1]. Case reports of this complication have appeared sporadically and a literature review revealed that the first case of intussusception secondary to a gastrostomy tube was reported in a two- year old child by Haws *et al* in 1966[2]. The intussusception in that case involved the entire duodenum, jejunum and most of the ileum[2]. The rarity of this complication and the lack of awareness have often resulted in delayed diagnosis.

Case Report

A five year-old Chinese girl with neurological impairment secondary to birth asphyxia had undergone fundoplication and gastrostomy for gastro-oesophageal reflux at the age of three years. She presented with a history of slow - flow of feeds and reduced intake through the gastrostomy tube for two days prior to admission. The mother noted that there was seepage of bile stained fluid around the gastrostomy tube. There was history of recurrent episodes of tube migration into the stomach and also infection at the gastrostomy site since the fundoplication.

On examination, the child was drowsy but responsive to pain. There was evidence of moderate dehydration with tachycardia, tachypnoea, dry lips and reduced skin turgor. The abdomen was scaphoid and the Foley catheter, which had been used for gastrostomy, had migrated into the abdomen for more than two-thirds of its length. Bile stained fluid was seen seeping around the tube through the gastrostomy stoma. Examination of the lungs revealed bilateral crepitations. With a clinical diagnosis of gastric outlet obstruction secondary to tube migration and aspiration pneumonia, active fluid resuscitation and intravenous antibiotics were commenced. The Foley catheter was deflated and replaced with a new catheter easily. Subsequent chest x-ray did not show any evidence of pneumonia. The blood electrolytes were within normal limits and the urea was 7.7m.mol/L.

The patient's condition improved over the next few hours and she became more alert. The bile stained drainage from the gastrostomy tube was about 20cc in the first six hours; however over the next eight hours the drainage increased to 200cc. The abdomen was still scaphoid and abdominal x-ray revealed two prominent gas shadows with paucity of gas in the distal bowel. Upper gastrointestinal barium study showed

obstruction in the proximal jejunum. There was no evidence of intraluminal filling defect or the 'coil-spring' appearance suggestive of intussusception. Soon after the contrast study, the patient passed a large amount of malena but was haemodynamically stable. With a diagnosis of strangulated bowel with obstruction, the patient underwent a laparotomy. At operation, an antegrade intussusception of the jejunum, starting at about 20cm from duodeno-jejunal junction and extending for a length of about 50cm was found. The neck of the intussusception was tight and the intussusception could not be reduced manually. The affected jejunum was resected and jejuno-jejunal anastamosis performed. The resected specimen revealed patchy, extensive gangrene of the intussusceptum. Post-operative recovery was uneventful.

Discussion

Gastrostomy tube placement, for the purpose of feeding or decompression, is often indicated in both paediatric and adult patients. The recognised complications of this procedure in children can be grouped into two categories, namely complications related to the surgical procedure itself and complications related to the gastric appliance. The complications related to the procedure include wound infection, wound dehiscence and haemorrhage[2]. The most frequent complication related to the gastric appliance in the paediatric age group is gastric outlet obstruction secondary to migration of the tube into the duodenum. This complication occurs more frequently with Foley catheter than Mallecot or de Pezzer catheters. Less common but more serious complications related to the appliance include perforation of the stomach, gastric ulceration and bleeding, gastric pneumatosis, gastric torsion, small bowel volvulus, esophageal perforation, obstructive jaundice, intestinal perforation and intussusception[2].

Intussusception of the jejunum resulting from gastrostomy tubes may be either antegrade or retrograde and tubes with bulbs like the Foley catheter are especially prone to initiate the intussusception[3]. The following mechanisms have been proposed to explain the antegrade intussusception: Firstly, the inflated bulb of the indwelling tube acts as the lead-point for the intussusception; initially the tube is pushed down by peristalsis and ultimately the tube can not migrate any further down either due to its broader outer- end as in the Foley catheter or due to external fixation of the tube to the abdominal wall. Further peristalsis then telescopes the proximal bowel into the distal bowel, thus setting the stage for an antegrade intussusception. Alternately, the tip of the tube may cause local inflammation of the bowel wall resulting in a pseudopolyp which in-turn may act as a lead- point[1,3]. The polyp may persist even after removal of the tube. Mechanical withdrawal of the tube that has migrated distally may initiate a retrograde intussusception by drawing the distal bowel into the proximal[1]. In our case with antegrade intussusception, one of the two mechanisms described above might have initiated the intussusception; however as there was extensive gangrene of the intussusceptum, histological changes of a pseudopolyp or chronic irritation of the bowel wall could not be documented.

Better awareness of this clinical problem among paediatricians and surgeons would result in its earlier recognition and prompt surgical treatment. Preventive measures that may help to reduce the complication include use of tubes without bulbs for gastrostomy, securely anchoring the tube to the abdominal wall while avoiding too long a tube intraluminally within the stomach and periodic verification by care-takers for early detection of tube migration distally due to gastrointestinal peristalsis[3]. Currently for long-term gastrostomy, as in neurologically impaired children, use of gastrostomy-buttons is recommended. This self-retaining device has a one-way valve and a very short intraluminal portion within the stomach, which would prevent some of the complications related to the conventional gastrostomy tubes.

References

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