



Jejuno-jejunal Intussusception in a Child with Feeding Jejunostomy Tube

Deen Dayal Sharma, Pramila Sharma, Gurudatt Raipuria, Ramendra Shukla, Arvind K Shukla
Department of Pediatric Surgery; SPMCHI, SMS Medical College, Jaipur, Rajasthan, India.

Abstract:

We report a case of jejuno-jejunal intussusception having feeding jejunostomy for post-corrosive pyloric stricture causing gastric outlet obstruction in a four year old male child. The child was admitted to our hospital with complaints of sudden onset of abdominal pain and distension over epigastrium and left hypochondrium. The pain was intermittent and spasmodic in nature. Intussusception as target sign was seen with jejunostomy tube on abdominal ultrasonography. Intra-operative finding was antegrade jejuno-jejunal intussusception upon feeding jejunostomy tube, acting as a lead point. As bowel had necrotic patches and dense adhesions, resection and anastomosis was done in single layer using non-absorbable polypropylene suture. The feeding jejunostomy tube was not removed and kept in place. Post-operative outcome was uneventful.

Key words: Abdominal Pain, Child, Gastric Outlet Obstruction, Intussusception, Jejunostomy.

Introduction

Jejuno-jejunal intussusception is a rare complication of feeding jejunostomy tube placement. It is characterised by transient small bowel obstruction due to small bowel segment intussusceptions and usually resolves spontaneously [1]. Most of the time, enteral feeding can be continued without difficulty. But in few cases reported in literature, operative intervention is required to relieve bowel obstruction. Here, we present our experience with jejuno-jejunal intussusception following Witzel's feeding jejunostomy in a child, made one month back for post-corrosive pyloric stricture causing gastric outlet obstruction due to unintentionally ingestion of battery acid.

Case Report

A four-year-old boy with thin built, having 10 kg of body weight, had ingested car battery acid (diluted

sulphuric acid) two months back unintentionally and was admitted with complaints of frequent blood stained vomiting. Prompt management to resuscitate the child was done and patient was discharged after stabilizing the vitals.

After two weeks, his barium swallow and meal study was suggestive of severe pyloric stricture causing gastric outlet obstruction with normal oesophagus. Endoscopy after another one week showed superficial ulcer in pylorus with narrowed pyloric opening and scope was not negotiable. Witzel's feeding jejunostomy tube was placed for feeding. The patient was re-admitted in hospital on 25th day of post-feeding jejunostomy tube placement with complaints of sudden onset of pain abdomen which was spasmodic and intermittent in

Corresponding Author: Dr. Deen Dayal Sharma

Email: drddsharma@rediffmail.com

Received: April 5, 2016 | **Accepted:** June 22, 2016 | **Published Online:** August 15, 2016

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (creativecommons.org/licenses/by/3.0)

Conflict of interest: None declared | **Source of funding:** Nil | **DOI:** <http://dx.doi.org/10.17659/01.2016.0093>

nature along with excessive cry, since two days. The clinical symptoms and findings on plain abdominal radiographs were not much different from other causes of small bowel obstruction. Therefore, the diagnosis of intussusception was delayed until next day when ultrasonography of abdomen was carried out, showing a long segment jejuno-jejunal intussusception.

The intraoperative finding was antegrade long segment jejuno-jejunal intussusception starting at a distance of around 8 cm from fixed part of the tube proximally, to a length of around 15 cm of involved segment of jejunum distally, with dense adhesions and normally placed jejunostomy tube [Fig.1]. The two sites of fixation on the jejunostomy tube were still in position and attached well to the peritoneum. Per-operative reduction was attempted but because of serosal tear of the bowel due to dense adhesions and necrotic patches at proximal end of involved bowel segment, resection and anastomosis was done in single layer using 4/0 polypropylene thread, keeping the jejunostomy tube in place as such. Post-operatively, recovery was uneventful and feeding started from 6th post-operative day onwards, through the feeding jejunostomy tube.

Discussion

Corrosive injury to stomach without involvement of oesophagus is rare entity in children which is seen with acid ingestion. Barium swallow and meal study in our case had shown pyloric stricture causing gastric outlet obstruction while sparing oesophagus. Vomiting, rapid loss of body weight, and decreased oral intake remain the most notable features after acid burns in children [2] necessitating a temporary access to gastrointestinal tract by a gastrostomy, gastro-jejunostomy, jejunostomy and naso-jejunal tube placement for feeding prior to definitive surgery [3].



Fig.1: Intra-operative finding of antegrade jejuno-jejunal intussusception.

Jejunostomy can be done by many techniques like longitudinal Witzel, transverse Witzel, open gastrojejunostomy, needle catheter technique, percutaneous endoscopy, and laparoscopy [4]. Various complications of tube jejunostomy are described in literature [4] including mechanical complications (tube dislocation, obstruction or migration), infections (cutaneous or intra-abdominal abscesses, aspiration pneumonia, peritonitis), gastrointestinal problems (nausea, vomiting, diarrhea, constipation, abdominal distension) and metabolic abnormalities (hyperglycemia, hypokalemia, water and electrolyte imbalance, hypophosphatemia, hypomagnesemia). These complications may be major ones which may require significant medical or surgical interventions.

Although jejunostomy tube induced jejuno-jejunal intussusception is a rare complication, cases are reported in literature. Actual incidence of this problem is unknown. Most of the instances of this complications reported in literature are related to the adult population. Carucci, *et al.* [5] reported 4 cases (1%) of small bowel intussusception at the site of jejunostomy tube but none of them needed operative intervention and resolved spontaneously.

30% cases of intussusceptions occurred within 30 days of tube insertion. Connolly *et al.* [6] observed 7 intussusceptions in 5 children with gastro-jejunostomy tubes. The intussusceptions were often transient or intermittent. Predisposing factors seem to include male gender, young infants, and the presence of distal pigtail on the tube [7].

The diagnosis of intussusceptions around tube is not easy as it may not interfere with the tube feeding. Connolly *et al.* [6] reported the use of sonography as well as fluoroscopy in the diagnosis of the intussusceptions in these cases. The clinical symptoms and findings on plain abdominal radiographs and in upper gastrointestinal contrast study may not be much different from other causes of small bowel obstruction. Therefore, the diagnosis of intussusception will be delayed [8]. The exact etiology and mechanism of intussusceptions induced by jejunostomy tube is unclear. Connolly *et al.* [6] hypothesized that the loop of the pigtail acts as a lead point, dragging the bowel with it. Thin built of patient also favours intussusception because of small amount of fatty tissue (omentum, mesentery) which allows small bowel to move more freely in the abdominal cavity [3]. Our patient was also very thin by his built.

Although most of the times, jejunostomy tube induced intussusceptions resolves spontaneously, sometimes they need operative intervention as seen in our case. As radiologic reduction by hydrostatic/contrast or air enemas are less successful with uncertain results [8]. Laparoscopy reduction or resection anastomosis can be tried in experienced hands. Although the jejunostomy tube is the cause of intussusception, it was not removed during the operation; as done by Wu TH *et al.* [3]. We could not find any literature/study comparing this complication in such type of cases especially in children in different types of jejunostomies.

Conclusions

This case emphasizes the need of high degree of suspicion to diagnose small bowel intussusception in patients with jejunostomy tube, having gastro-intestinal symptoms. Laparotomy is strongly indicated in patients with persistent signs and symptoms. Operative reduction is sufficient and resection is not advised but may be required in case of gangrenous bowel or its perforation, as seen in our case.

References

1. Kumar B, Lal R, Upadhyaya VD, Poddar B. Small bowel intussusception in a child following feeding jejunostomy: A rare case with review of literature. *Open Journal of Pediatrics*. 2012;2:278-290.
2. Shukla RM, Mukhopadhyay M, Tripathi BB, Mandal KC, Mukhopadhyay B. Pyloric and antral strictures following corrosive acid ingestion: A report of four cases. *J Indian Assoc Pediatr Surg*. 2010;15(3):108-109.
3. Wu TH, Lin CW, Yin WY. Jejunojejunal intussusceptions following jejunostomy. *Journal of the Formosan Medical Association*. 2006;105:355-358.
4. Tapia J, Murguia R, Garcia G, de los Monteros PE, Onate E. Jejunostomy: techniques, indications, and complications. *World J Surg*. 1999;23:596-602.
5. Carucci LR, Levine MS, Rubesin SE, Laufer I, Assad S, Herlinger H. Evaluation of patients with jejunostomy tubes: Imaging findings. *Radiology*. 2002;223:241-247.
6. Connolly BL, Chait PG, Siva-Nandan R, Duncan D, Peer M. Recognition of intussusceptions around gastrojejunostomy tubes in children. *American Journal of Roentgenology*. 1998;170:467-470.
7. Hughes UM, Connolly BL, Chait PG, Muraca S. Further report of small bowel intussusceptions related to gastrojejunostomy tubes. *Pediatric Radiology*. 2000;30:614-617.
8. Parikh M, Samujh R, Kanojia R, Sodhi KS. Does all small bowel intussusception need exploration. *African Journal of Paediatric Surgery*. 2010;7:30-32.