



Intussusception at the Site of Feeding Jejunostomy: A Rare Complication

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Intussusceptions accounts for 1% of all bowel obstructions in adults. Feeding jejunostomy (FJ) is a common procedure done for enteral feeding as an adjunct. Intussusception is a rare complication after FJ. We have encountered a case of 18 yr old female patient with FJ done for enteral feeding post corrosive acid ingestion. He presented with upper abdominal symptoms of vomiting and pain two months after the FJ. Ultrasound abdomen at the time of presentation was normal. A CT scan was done as the symptoms did not regress on conservative management, which showed sausage shaped mass with bowel in bowel configuration s/o intussusception with small bowel obstruction pattern. Emergency exploratory laparotomy was done which confirmed jejuno-jejunal intussusception with FJ as lead point. Surgical reduction of intussusceptions and revision FJ was done. Postoperative period was uneventful. Even though Jejunostomy tube-induced intussusception is rare with an incidence of 1%, it should be considered in an FJ patient with upper abdominal symptoms.

Keywords: *Intussusception; feeding jejunostomy; intestinal obstruction; bowel obstructions; small bowel obstruction; corrosive ingestion.*

1. INTRODUCTION

Feeding jejunostomy is commonly done surgical procedure for enteral nutrition [1]. Intussusception is a common cause of intestinal obstruction in infancy and early childhood [2]. In adults it accounts for 1% of all bowel obstructions and only 5% of all cases of intussusception. Intussusception is a rare complications after feeding jejunostomy amounting for 1% of all complications of FJ. They are of diagnostic challenge and present with nonspecific symptoms, have a chronic indolent course until bowel ischemia occurs [3]. Computed tomography (CT) or ultrasonography (USG) can help to confirm the diagnosis. It can be relieved spontaneously or sometimes requires laparotomy [4]. Having a high index of suspicion is necessary for their diagnosis at the earliest.

Aims: To present and highlight a rare and less considered complication of Feeding Jejunostomy.

2. CASE PRESENTATION

An 18yr old female was brought to the hospital with complaints of pain abdomen and vomiting since 3 days with FJ in situ with electrolyte imbalance. 2 months back at some other hospital; she had undergone an operative intervention for FJ creation following corrosive ingestion. Patient has no other comorbidities. On admission an USG abdomen was apparently normal and initially was managed conservatively with intravenous fluids, antiemetic and prokinetics. Even after 48hrs of conservative management the patients symptoms did not improve, and a CECT abdomen was planned. It revealed a sausage shaped mass with bowel in bowel configuration with feeding tube in situ (Figs 1,2) suggestive of intussusception.

An emergency laparotomy was done as there was no symptomatic improvement after 48 hrs and CT diagnosis of bowel obstruction caused by intussusception. Intraoperatively a 10 cm long fleshy sausage-like tubular intestinal mass formed by retrograde telescoping of the proximal jejunum was found forming an intussusceptions around the tip of feeding tube approximately 20 cm distal to the entry of the jejunostomy tube (Fig. 3).

The jejunostomy tube was normal without any coiling or adhesion. The jejunum was inflamed but healthy with maintained vascularity. Through gentle milking the intussusceptient was reduced (Fig. 4).

Rest of the bowel was normal. Postoperative period was uneventful. Patients tolerated feeding started from the 3rd day. Patient was discharged at 7th day. Follow up was done at 4 weeks; patient had adequate weight gain and improved general condition with no other complaints.

3. DISCUSSION

FJ is a simple and generally safe procedure. Complications are commonly reported with incidences upto 44% include dislodgement of tube, blockage of tube, leakage [5]. Intussusceptions as complication of FJ are uncommon but potentially fatal [6]. Most patients present with bilious emesis or abdominal pain but some may be asymptomatic and are discovered incidentally [7]. Intussusceptions may be transient or intermittent. Sometimes transient mass per abdomen can be felt. It can have accompanied electrolyte imbalance. It is seen more commonly in men, young infants and with the presence of distal pigtail on the tube .In our case the patient had persistent and worsening symptoms of abdominal pain and bilious vomiting. The diagnosis is difficult in cases of FJ because tube feeding may or may not be disturbed and typical. USG may point to the diagnosis but CT scan is the investigation of choice for the diagnostic evaluation of adult intussusceptions. The sensitivity ranges from 58 to 100% and specificity ranges from 57 to 71% in diagnosing intussusceptions [8-9]. They have a diagnostic finding of complex soft tissue sausage shaped mass with target sign. However, radiography has its diagnostic limitations as Kareem et al. reported a case of adult jejunojejunal intussusception secondary to GJ placement with no distinguishable findings on CT [10-11].

Feeding jejunostomy is a surgical procedure for enteral feeding. It can be a bridging procedure until a major surgery can be carried on to improve nutrition or adjunctive procedure. There are many methods Stamms, longitudinal Witzel, transverse Witzel, needle catheter technique, percutaneous endoscopy, and laparoscopy. The complications of feeding jejunostomy may be mechanical, infectious, gastrointestinal symptoms and metabolic abnormalities. Life threatening complications include small-bowel obstruction, non obstructive small-bowel narrowing, extra luminal tracks or collections, jejunal hematomas, and intussusceptions [12-13].

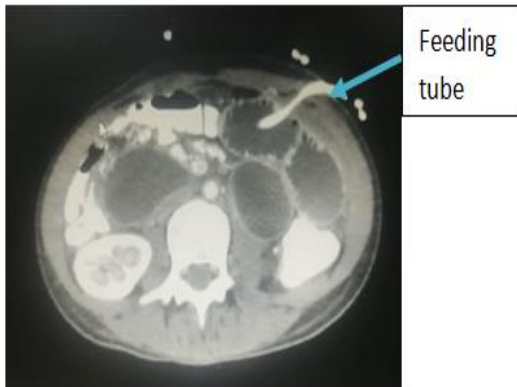


Fig. 1. CT image showing Feeding Jejunostomy site with dilated small bowel loops

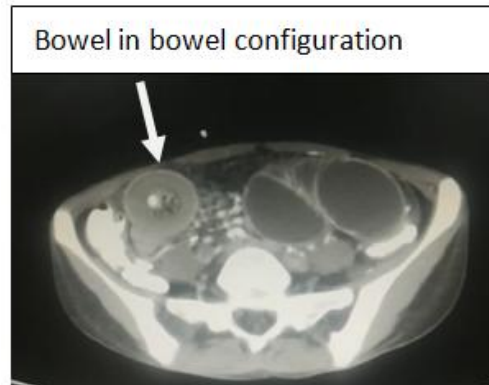


Fig. 2. CT image showing dilated bowel loops with bowel in bowel configuration suggestive of intussusception

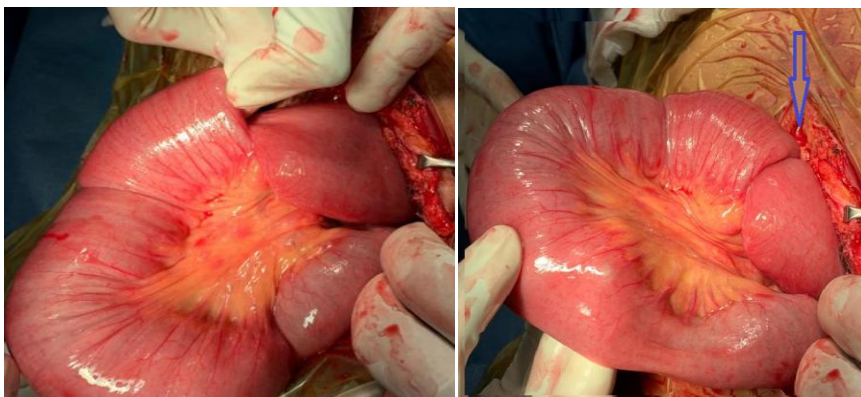


Fig. 3. Intraoperative Photographs showing the jejunojunal intussusceptions site



Fig. 4. Intraoperative photographs after reduction of intussusception and healthy bowel loop. The tip of feeding tube in situ is marked

The exact mechanism of intussusception in our patients is assumed to be the tip of the feeding tube placed. The assumption is the tip would

have acted as the initial lead point and, later, migrated proximally due to peristalsis. There are a few case reports on Jejunojunal

Intussusceptions after FJ .with and without tube in situ. Multiple theories have been proposed include [2,8-10,14-16].

- Free movements of the intestine due to reduced fatty tissue i.e mesentery and omentum in a nutritionally deprived patient
- Retrograde peristalsis due to forced feeding and vomiting.
- Hyperplasia of mucosa due to tube induced inflammatory reaction.
- dragging force of the tip acts as a lead point.
- The most accepted theory is the feeding tube acting as a lead point and subsequently dragging the bowel loop inside the lumen of adjacent bowel leading to obstructive symptoms .Larger the tube more is the risk [15]. Theoretically, a tube tip that tents the bowel or otherwise impinges on the mucosa could cause mucosal irritation or create a fold that could act as a lead point for intussusceptions [9].

It resolves spontaneously, but may require surgical reduction in few cases. Resection is advised if associated with complications like gangrenous changes, ischemia, perforation or stenosis [10]. Feeding tube can be used postoperatively for feeding even in such cases of resection and anastomosis. Fixing a 4-5 cm segment of jejunum to abdominal wall instead of a single point fixation and keeping the distance from duodenojejunal (DJ) flexure to FJ site minimum (15 cm) to avoid antegrade intussusception of proximal redundant loop are few techniques which may help in preventing this complication [13-14].

4. CONCLUSION

Feeding Jejunostomy tube induced intussusception is a rare but potentially fatal complication. A high degree of clinical suspicion is required for making the diagnosis timely to prevent development of life threatening complications. Awareness is needed regarding its typical and atypical symptomatic presentation in FJ patients. A low threshold for CT scan is necessary for confirming small bowel intussusceptions in a feeding jejunostomy patient. Timely diagnosis helps to preserve the bowel from undergoing irreparable changes such as gangrene, stricture and thus decreasing the morbidity of the patient. Once diagnosed, an early operative intervention gives the best

outcome. There is no need to remove the jejunostomy tube and feeding can be continued post-operatively without recurrence.

CONSENT AND ETHICAL APPROVAL

As per university standard guideline, participant consent and ethical approval have been collected and preserved by the authors.

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To the patient who help us learn to become better doctors and humans.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Tapia J, Murguia R, Garcia G, Espinoza De Los, Monteros P, Oñate E. Jejunostomy: Techniques, indications, and complications. *World J Surg.* 1999;23(6): 596–602.
2. Connolly B, Chait P, Siva-Nandan R, Duncan D, Peer M. Recognition of intussusceptions around gastrojejunostomy tubes in children. *AJR Am J Roentgenol.* 1998; 170:467–70.
3. Tarchouli M, Ait Ali A: Adult Intussusception: An Uncommon Condition and Challenging Management. *Visc Med* 2021;37:120-127. DOI: 10.1159/000507380
4. Parikh M, et al. Does all small bowel intussusception need exploration? *Afr J Paediatr Surg.* 2010;7(1):30–32. DOI: 10.4103/0189-6725.59358
5. Kohli P, Barathi D, Penumadu P. Jejuno-jejunal intussusception: A surgical quandary arising from feeding jejunostomy. *Trop Doct.* 2021 Apr;51(2):253-254. DOI: 10.1177/0049475520982684. Epub 2021 Jan 6. PMID: 33407013
6. Redmond P, Ambos M, Berliner L, Pachter HL, Megibow A. Iatrogenic intussusception: A complication of long intestinal tubes. *Am J Gastroenterol.* 1982; 77(1):39-42. PMID: 7064963
7. Hughes UM, Connolly BL, Chait PG, et al. Further report of small-bowel intussusceptions related to gastrojejunostomy tubes. *Pediatr Radiol.* 2000;30:614–17

8. Amr MA, Polites SF, Alzghari M, Onkendi EO, Grotz TE, Zielinski MD. Intussusception in adults and the role of evolving computed tomography technology. *Am J Surg.* 2015;209(3):580–3.
9. AlZubeidi D, Bishop WP, Rahhal RM. Identifying small bowel intussusceptions related to a gastro enteric feeding tube. *Frontline Gastroenterology.* 2011;2(1):63–4.
10. Kareem, Tayeb, Abdi, Mahmoud. Jejunojejunal intussusception following jejunostomy closure: A case report. *International Journal of Surgery Case Reports.* 2020;76:446-449. DOI: 10.1016/j.ijscr.2020.10.024
11. Forasté-Enríquez CF, Mata-Hernández R, Hernández-Villaseñor A, Alderete-Vázquez G, Grube-Pagola P. Intestinal obstruction in adults due to ileal intussusception secondary to inflammatory fibroid polyp: A Case Report. *Rev Gastroenterol Mex.* 2017;82:263–265
12. Mahalingam S, Seshadri RA, Jayanand SB. Jejunojejunal intussusception: An unusual complication after feeding jejunostomy. *Indian J Surg Oncol.* 2013; 4(4):383–4.
13. Choi AH, O’Leary MP, Merchant SJ, Sun V, Chao J, Raz DJ et al. Complications of feeding jejunostomy tubes in patients with gastroesophageal cancer. *J Gastrointestinal Surg.* 2017;21(2):259–65.
14. Sakthivel H, Sahoo AK, Amaranathan A, Raj Kumar N, Maraju NK. A surgical conundrum in feeding jejunostomy–jejunojejunal intussusception: A case series. *Cureus.* 2018;10(2)
15. Redmond P, Ambos M, Berliner L, Pachter HL, Megibow A. Iatrogenic intussusception: A complication of long intestinal tubes. *Am J Gastroenterol.* 1982;77(1):39-42.
16. Wu TH, Lin CW, Yin WY. Jejunojejunal intussusceptions following jejunostomy. *J Formos Med Assoc.* 2006;4:355–358.

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