



Small Bowel Intussusception after Feeding Jejunostomy: A Rare Complication of a Common Procedure

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Authors' contributions

This work was carried out in collaboration among all authors. Author SHF designed the study. The study was written under the supervision of authors SHF and BS. Authors SSC and YG wrote the first draft of the manuscript and collected the data. Author NR managed the analyses of the study and managed the literature searches. All authors read and approved the final manuscript.

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Case Report

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ABSTRACT

Feeding jejunostomy is a surgical procedure in which a tube is inserted inside the lumen of the proximal part of jejunum to provide enteral nutrition to the patient. It is associated with few complications; small bowel intussusception is one of its rarest complications reported in the literature. We report a case of a 45 year old male patient who presented to us with complaints of absolute dysphagia due to carcinoma of esophagus for which we performed feeding jejunostomy for palliation. The procedure was uneventful and he was discharged when he tolerated the feed through the jejunostomy tube. 3 days later he developed features of intestinal obstruction and computed tomography of abdomen revealed the diagnosis of jejunojejunal intussusception. Laparotomy was done and the finding of jejunojejunal intussusception was confirmed at the feeding jejunostomy site with feeding tube acting as the lead point. Surgical reduction of intussusception was done and feeding jejunostomy was revised. Owing to the rare complication of intussusception in a commonly done surgical procedure this case is being reported here.

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1. INTRODUCTION

Feeding Jejunostomy is a commonly done surgical procedure to provide enteral nutrition to the patient. The indications of doing this procedure are some of the major surgeries of the upper gastrointestinal tract or any obstructive lesion proximal to the jejunum which cannot be resected and compromises the enteral nutrition [1], hence used as palliative care in cancer patients. It is a simple procedure but in few cases it may be associated with some complications like dislodgement, clogging, leak at skin site or skin irritation [2].

Small bowel intussusception is one of the rarest complications of this surgical procedure. It occurs when tip of the jejunostomy tube acts as a lead point which telescopes one segment of intestine into the lumen of adjacent segment, causing intestinal obstruction. Intussusception is relatively uncommon in adults accounting for less than 1% of the total cases [3]. In >90% of the cases of adult intussusception there is a definitive mass lesion like Meckel's diverticulum, polyps or carcinoma unlike the paediatric population where the cause of intussusception is unknown in most of the cases [4]. As there have been very few reported cases of intussusception due to feeding jejunostomy in the literature, we hereby report this rare case.

2. CASE REPORT

A 45 year old male patient presented to surgical OPD with complaints of progressively increasing dysphagia to both solids and liquids for last 4 months and absolute dysphagia for 2 days. On examination the patient was very lean, thin and cachexic with a BMI of 17.2 kg/m². His general and systemic examinations were unremarkable except for clinically evident pallor. The patient had no past history of corrosive ingestion or any surgical intervention.

Barium study revealed non passage of oral contrast beyond the middle one third of oesophagus with proximal dilatation of oesophagus and pooling of contrast material. Contrast enhanced CT scan of thorax suggested an obstructive mass lesion in lower one third of oesophagus. Upper Gastrointestinal endoscopy was done which suggested similar findings and biopsy was sent to the pathologist and a diagnosis of moderately differentiated squamous

cell carcinoma was made. The patient was planned for Witzel open feeding jejunostomy using a 12 Fr nasogastric tube and on 2nd postoperative day feeding was started which was well tolerated by the patient and he was discharged in satisfactory condition on 5th post-operative day.

After 3 days the patient again presented to emergency department with features of acute intestinal obstruction and discharge of food particles and intestinal contents from the wound. On per abdominal examination the abdomen was distended with the features of acute intestinal obstruction. CT abdomen was done and it was suggestive of a heterogeneous sausage shaped mass consisting of an outer intussusciens and innerintussusceptum with jejunostomy tube inside the intussusceptum (Fig. 1).

After the confirming the diagnosis of intussusception, laparotomy was done. On exploration there was jejunojejunal intussusception one foot distal to the jejunostomy site with the tip of the jejunostomy tube forming the lead point of intussusception. Food particles and intestinal contents were leaking through the jejunostomy site because of distal intestinal obstruction (Fig. 2). The condition of the bowel was healthy so the intussusception was reduced and feeding jejunostomy was revised. Post-operative period was uneventful and he was discharged in satisfactory condition.

3. DISCUSSION

Feeding jejunostomy is a commonly done procedure to administer nutrition in a patient who is not able to take oral feeds or in whom major upper gastrointestinal surgery has been done. There are many techniques used for jejunostomy like Witzel open jejunostomy, Stamm open jejunostomy, percutaneous endoscopy guided and laparoscopic technique [1].

The complications of this procedure may occur as a complication of enteral nutrition through the jejunostomy or it may be mechanical due to the feeding jejunostomy tube itself [5]. Complications due to feeding through the jejunostomy are diarrhoea, bloating, electrolyte disturbances, hyper or hypoglycaemia, vitamins and trace element deficiencies. Complications due to feeding tube itself could be mechanical or infectious. Mechanical complications include tube

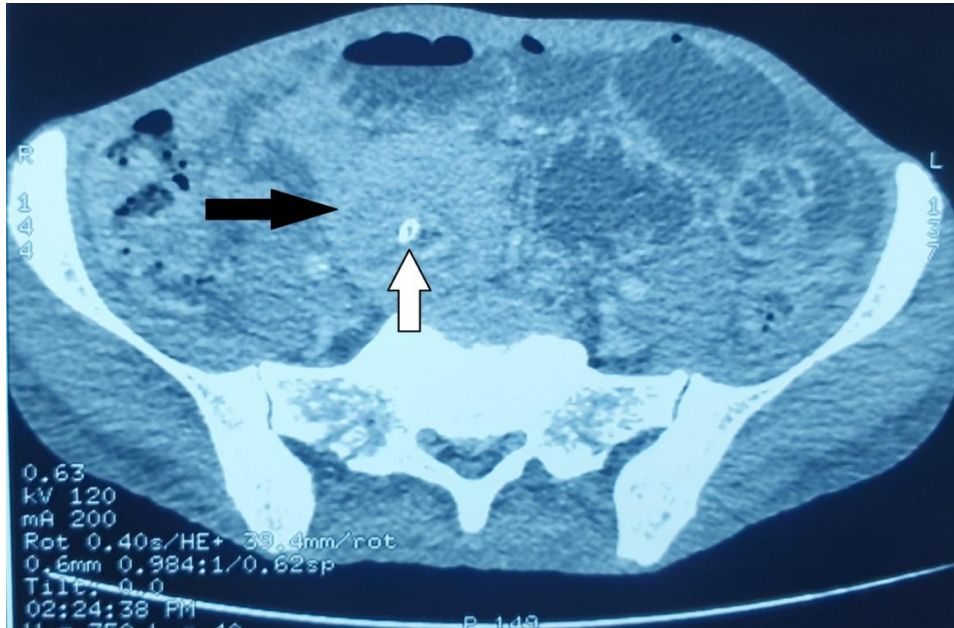


Fig 1. CECT abdomen image showing Jejunostomy tube (white arrow) and lumen within lumen sign (black arrow)

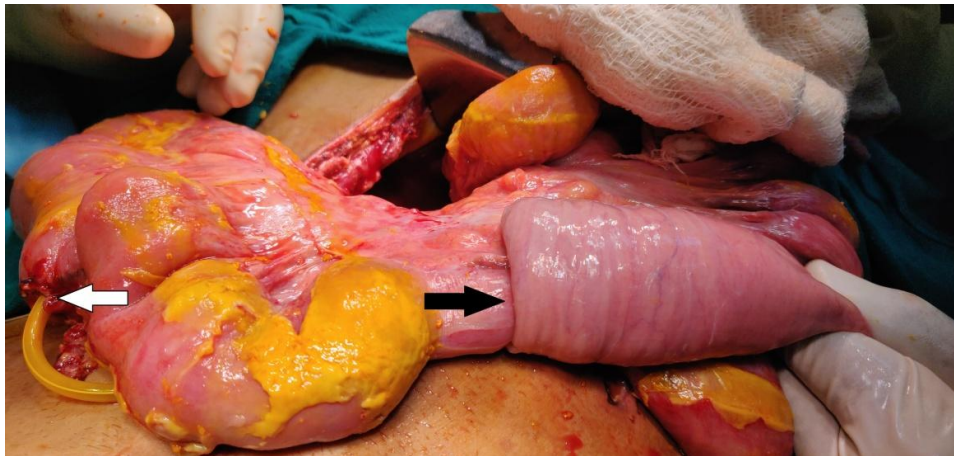


Fig 2. Intraoperative image showing Jejunostomy entry site (white arrow) and jejunojejunal intussusception (black arrow)

blockage, tube malposition, perforation of bowel, displacement or knotting of the tube, accidental removal, and leakage of tube. Infectious complications include erosion, ulceration and necrosis of skin and mucosa, peritonitis or infective diarrhoea. Feeding jejunostomy tube leading to intestinal obstruction due to intussusception is rare with an incidence of 1% [3].

The diagnosis of intussusception due to jejunostomy tube is difficult and requires a high

index of clinical suspicion. It should be suspected in all the patients with persistent abdominal distention along with other features of intestinal obstruction after the feeding jejunostomy [5]. Computed tomography (CT) scan is the investigation of choice for the diagnostic evaluation of adult intussusception. The sensitivity ranges from 58 to 100% and specificity ranges from 57 to 71% in diagnosing intussusception [6]. The appearance of jejunostomy tube intussusception on CT scan is characteristic telescoped bowel segment with

central intussusciens and outer intussusceptum. The feeding tube appears in the central part of intussusceptum [7]. In our case also there was telescoping of jejunal loops and jejunostomy tube appeared in the central intussusceptum on CT scan.

Most accepted theory that has been proposed for understanding the mechanism of jejunostomy tube induced intussusception 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 [8,9]. Longer length and increased caliber of feeding tube used increases the risk of intussusception following feeding jejunostomy [10,11,12].

Surgery is the mainstay of management in an adult patient with intussusception as most of the patients have some underlying organic cause of intussusception. Reduction of intussusception is done in non-ischaemic bowel and resection and anastomosis should be done in gangrenous bowel. In our case we did laparotomy with reduction of the telescoped segments of jejunum and revised the feeding jejunostomy as the bowel was healthy with there was no sign of ischemia.

4. CONCLUSION

Jejunojejunal intussusception is an extremely rare complication after feeding jejunostomy. A high degree of clinical suspicion is required for making the diagnosis and timely imaging with a CT scan are essential for confirming it. Intussusception should be kept as the differential diagnosis in patients who complain of persistent symptoms of intestinal obstruction after feeding jejunostomy. If the condition is diagnosed timely than simple reduction of intussusception will suffice; also morbidities associated with bowel resection and leakage from jejunostomy site can be avoided.

CONSENT

Well informed written consent was given by the patient to surgery and publication.

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the authors.

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. 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 Gastrointest Surg.* 2017;21(2):259–65.
3. Dholaria S, Lakhera KK, Patni S. Intussusception: A Rare Complication after feeding jejunostomy; A case report. *Indian J Surg Oncol.* 2017;8(2):188–90.
4. Faridi S, Siddiqui B, Aslam M, Akhtar K. Chronic jejunojejunal intussusception in an adult male due to multiple tubulovillous adenomas: A case report and review of literature. *Surg Chronicles.* 2015 ;20:155–7.
5. Srinathan SK, Hamin T, Walter S, Tan AL, Unruh HW, Guyatt G. Jejunostomy tube feeding in patients undergoing esophagectomy. *Can J Surg.* 2013;56(6):409–14.
6. 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.
7. Al-Zubeidi D, Bishop WP, Rahhal RM. Identifying small bowel intussusception related to a gastroenteric feeding tube. *Frontline Gastroenterol.* 2011;2(1):63–4.
8. Connolly B, Chait P, Siva-Nandan R, Duncan D, Peer M. Recognition of intussusception around gastrojejunostomy tubes in children. *AJR Am J Roentgenol.* 1998;170:467–70.
9. Mahalingam S, Seshadri RA, Jayanand SB. Jejunojejunal intussusception: An unusual complication after feeding jejunostomy. *Indian J Surg Oncol.* 2013;4(4):383–4.
10. Sakthivel H, Sahoo AK, Amaranathan A, Raj Kumar N, Maroju NK. A surgical conundrum in feeding jejunostomy–jejunojejunal intussusception: A case series. *Cureus.* 2018;10(2).

11. Mahalingam S, Seshadri RA, Jayanand SB. Jejunojunal intussusception: An unusual complication after feeding jejunostomy. Indian J Surg Oncol. 2013;4(4):383–4.
12. 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.

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