Annals of Clinical Case Reports

Case Report
Published: 02 Feb, 2023

Intussusception Related to Feeding Jejunostomy: An Unusual Case Report and Literature Review

Lee IC, Tsai HL, Huang CW and Wang JY*

Department of Surgery, Division of Colorectal Surgery, Kaohsiung Medical University Hospital, Kaoshiung Medical University, Taiwan

Abstract

Intussusception can occur anywhere in the small and large bowel. Adult intussusception accounts for 5% of all cases of intussusception and 1% to 5% of all cases of intestinal obstruction with ileocolic intussusception being the most common type in adults and there are few reported cases of jejunojejunal intussusception. Feeding Jejunostomy (FJ) is a simple surgical procedure for enteral nutrition, but it can develop complications that may require re-exploration and can be life-threating. Common complications include mechanical ones such as tube migration or dislocation, infection, gastrointestinal symptoms, fluid and electrolyte imbalances. However, intussusception is a rare complication. Herein, we presented a patient with gastric cancer who had received subtotal gastrectomy with Billroth-II reconstruction and feeding jejunostomy, and then developed jejunojejunal intussusception following the placement of feeding tube into the jejunum.

Keywords: Intussusception; Feeding jejunostomy; Gastric cancer; Subtotal gastrectomy; Billroth-II reconstruction

Key Messages

Unlike in the pediatric population, intussusceptions in adults are usually caused by a pathological lead point and the placement of an intestinal tube for feeding purposes has been rarely reported as a cause of intussusceptions. Here, we showed the rare case of jejunojejunal intussusception following the placement of feeding tube.

Introduction

Intussusception is defined as the proximal bowel invaginating into the distal bowel. Feeding Jejunostomy (FJ), inserting a tube in proximal jejunum surgically, is for enteral nutrition. About 90% of the intussusceptions in adults, a definitive organic lesion causing intussusceptions presents. The postoperative intussusceptions are a special entity that can be idiopathic, or associated with mucosal, intramural or extrinsic causes; the placement of a long intestinal tube for feeding purposes has been seldom reported as a cause. Here, we demonstrated that a case of adult intussusceptions caused by the placement of the feeding tube and discuss the diagnostic process and management.

Case History

A 60-year-old female, diagnosed with gastric cancer, received laparoscopic subtotal gastrectomy plus Billroth-II reconstruction and feeding jejunostomy in February, 2022. After surgery, she received adjuvant chemotherapy (mFOLFOX4) and supplementary enteral nutrition from feeding jejunostomy. Unfortunately, she developed intermittent vomiting for one week in April, 2022. Associated symptoms were nausea, anorexia, intermittent abdominal pain and absence of defecation. At first, she came to our emergent department. The laboratory studies showed leukocytosis, elevated CRP (C-Reactive Protein) and acute kidney injury. The abdominal Computed Tomography (CT) demonstrated target sign over proximal jejunum by axial plane (Figure 1A) and pseudo-kidney sign by sagittal plane (Figure 1B). In the high suspicion of jejunojejunal intussusception, exploratory laparotomy was performed. Intraoperatively, it revealed jejunojejunal intussusceptions and the lead point was kinked tip of the FJ (Figure 2). Enterolysis with reduction of intussusceptions were performed (Figure 3) and the feeding jejunostomy was taken-down (Figure 4); thereafter, her symptoms gradually improved and she was uneventfully discharged from our hospital. Currently, she receives regular adjuvant chemotherapy (FOLFOX4) for gastric cancer and no more episodes of adhesive bowel obstruction nor intussusceptions have been found so far. In summary of this case, the tip of feeding tube acts as the leading point during a peristaltic wave. An illustrated picture is

OPEN ACCESS

Correspondence:
Hsiang-Lin Tsai, Department of Surgery, Division of Colorectal Surgery, Kaohsiung Medical University Hospital, Kaohsiung Medical University, No. 100, Tzyou 1st Road, Kaohsiung 80708, Taiwan, Tel: +886-7-3122805; Fax: +886-7-3114679; E-mail: chunpin870132@yahoo.com.tw/ chunpin870132@gmail.com

Received Date: *10 Jan 2023*
Accepted Date: *24 Jan 2023*
Published Date: *02 Feb 2023*

Citation:
Lee IC, Tsai HL, Huang CW, Wang JY. Intussusception Related to Feeding Jejunostomy: An Unusual Case Report and Literature Review. Ann Clin Case Rep. 2023; 8: 2389.
ISSN: 2474-1655.

Copyright *© 2023 Tsai HL. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.*

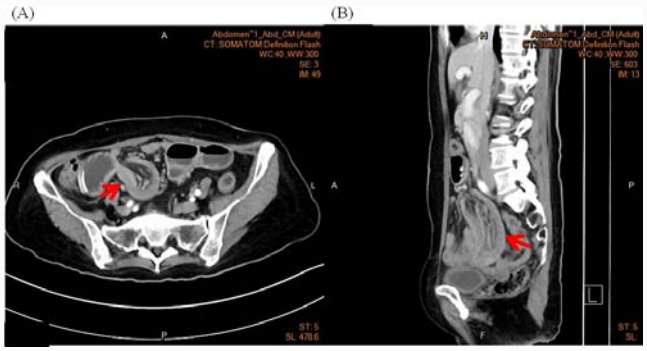

Figure 1: The contrast-enhanced computed tomography (CECT) (A) Axial view at the region of the start of intussusception (red arrow). A bowel loop with its mesentery is seen entering into the adjacent bowel lumen. A target sign was shown. (B) Sagittal view showed the pseudo-kidney sign (red arrow).

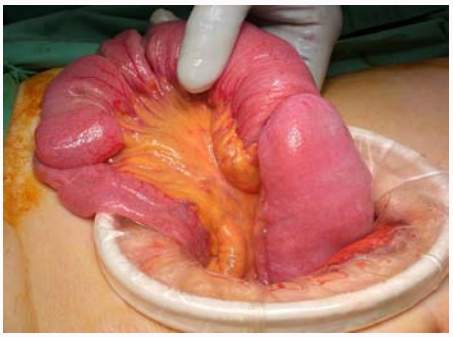

Figure 2: Intra-operative image. An antegrade jejunojejunal intussusceptioon.

Figure 3: Introperative image. Mamunal reduction of the jejunojejunal intussueception was demonstrated and showed the feeding tube (red arrow).

shown as Figure 5.

Discussion

Enteral feeding is a preferable route for perioperative nutrition due to its trophic effects on the intestine, causing less bacterial translocation and low infective complications for patients with a disease of the upper digestive tract. FJ is a surgical procedure for enteral feeding and it is indicated as an additional procedure during a major upper gastrointestinal surgery, if a complicated postoperative recovery is expected. There are many techniques, including open longitudinal Witzel, Stamm, needle catheter technique, percutaneous endoscopy and laparoscopy [1]. However, it is not free from complications and some studies have quoted the complication rate could be up to 53.6% [2]. Jejunojejunal intussusceptions are one such

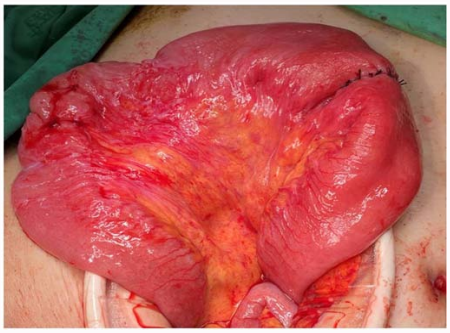

Figure 4: Take-down of feeding tube and reconstruction of the jejunum with end-to-end anastomosis.

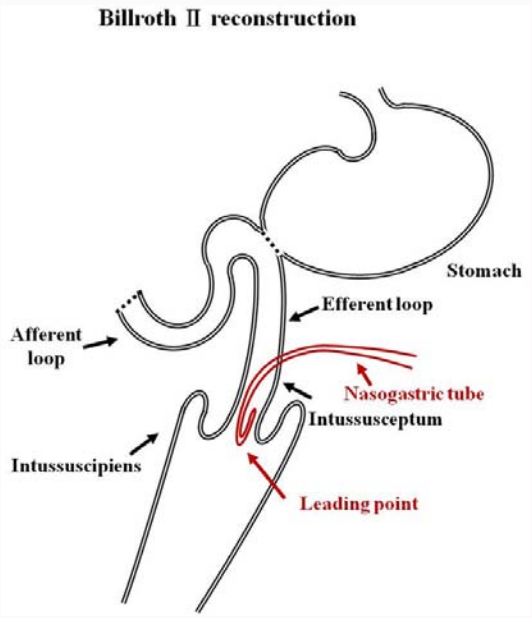

Figure 5: The cartoon picture showed that the tip of feeding tube acted as the leading point of jejunojunal intussusception.

complication rarely reported in the medical literature [3]. One series evaluating complications following jejunostomy tubes detected an intussusception rate of 1% in contrast radiographs [4].

Intussusception is defined as the telescoping of the proximal segment of the gastrointestinal tract within the lumen of the adjacent segment. The presentation of adult intussusception may be revealed by more chronic or vague abdominal pain (71%), nausea and vomiting (68%), abdominal distension with partial obstruction (45%), or a palpable mass at physical examination [5]. Adult intussusception also differs from the pediatric one in that it is most often associated with a pathological lead point. Depending upon the site of the lead point, they can be classified into entero-enteric, ileocolic, ileocecal, and colocolic [6]. The placement of an intestinal tube for feeding purposes has been rarely known to cause intussusception, accounting for only 1% of all cases of intussusceptions [7]. Different theories have been proposed for intussusception caused by the placement of feeding tubes [2]. The theories included that (1) the tip of the feeding tube acting as the leading point and dragging the proximal segment over the distal segment during a peristaltic wave. (2) retrograde peristalsis of the jejunum during episode of vomiting. (3) the injecting force from the pump during feeding possibly dragging the bowel, causing

intussusception. (4) poorly built patients having reduced fatty tissue in the omentum and mesentery, which may allow the free movement of the bowel causing a predisposition to intussusceptions; and (5) an increased caliber or a longer length of the feeding tube used in the bowel segment possibly producing intussusception due to distal tip migration. The diagnosis of FJ tube-induced intussusceptions is challenging as the clinical presentation is mostly nonspecific with no obstruction to the jejunostomy feeding. Moreover, the patients might be asymptomatic in 20% of cases [8]. A Contract-Enhanced Computed Tomography (CECT) of the abdomen is the most sensitive imaging modality to detect intussusception. Imaging features suggestive of intussusception are a target or sausage-shaped soft tissue mass enveloped within an eccentrically located area of low density, referring to a bowel within bowel configuration. Additionally, it can provide other important information such as length and diameter of the intussusception, possible lead point, the type and location of intussusception, the presence of strangulation or partial or complete bowel obstruction [9]. A short segment or transient intussusception caused by the FJ tube can be managed conservatively by changing the tube to a standard or short tube over a guidewire under fluoroscopic guidance or reduction by injecting air or contrast material through the tube; however, cases with long segment persistent intussusception with features of partial or complete obstruction or features of strangulation required operative intervention. Definitive management is the surgical exploration and manual reduction, or resection of the intussusception segment based on the intraoperative findings and bowel viability. Nevertheless, there is no single established management strategy and the decision should be individualized for each patient as per clinical scenario [10].

Conclusion

A jejunojejunal intussusception is a rare complication following FJ; additionally, it is often nonspecific and requires a high index of suspicion. CECT is the most sensitive tool for diagnosing and detecting any complications. Though a conservative approach can be tried for simple transient cases, definitive surgical intervention is required for cases with obstruction or strangulation.

References

1. Tapia J, Murguia R, Garcia G, de los Monteros PE, Onate E. Jejunostomy: Techniques, indications, and complications. World J Surg. 1999;23:596-602.
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;21:259-65.
3. Wu TH, Lin CW, Yin WY. Jejunojejunal intussusceptions following jejunostomy. J Formos Med Assoc. 2006;105:355-8.
4. Carucci LR, Levine MS, Rubesin SE, Laufer I, Assad S, Herlinger H. Evaluation of patients with jejunostomy tubes: Imaging findings. Radiology. 2002;223:241-7.
5. Weilbaecher D, Bolin JA, Hearn D, Ogden W 2nd. Intussusception in adults. Review of 160 cases. Am J Surg. 1971;5:5557762.
6. Shenoy S. Adult intussusception: A case series and review. World J Gastrointest Endosc. 2017;9:220-7.
7. Cogen R, Weinryb J, Pomerantz C, Fenstemacher P. Complications of jejunostomy tube feeding in nursing facility patients. Am J Gastroenterol. 1991;11:1951238.
8. Barussaud M, Regenet N, Briennon X, de Kerviler B, Pessaus P, Kohneh-Sharhi N, et al. Clinical spectrum and surgical approach of adult intussusceptions: A multicentric study. Int J Colorectal Dis. 2006;21:834-9.
9. Gayer G, Zissin R, Apter S, Para M, Hertz M. Pictorial review: Adult intussusception – a CT diagnosis. Br J Radiol. 2002;75:185-90.
10. Wang LT, Wu CC, Yu JC, Hsiao CW, Hsu CC, Jao SW. Clinical entity and treatment strategies for adult intussusceptions: 20 years' experience. Dis Colon Rectum. 2007;50:1941-9.