

Retrograde Ileo-Jejuno-Gastric Intussusception With Early Bowel Ischemia: Life Threatening Complication After Gastrojejunostomy

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Abstract: *Jejuno-gastric intussusception is a highly uncommon condition occurring as a rare complication of gastrojejunostomy ~ less than 300 cases have been reported of this entity since it was first reported in 1914 by Bozzi. Here we report a case of a 57 year old male who came with complaints for bilious vomiting and vague abdominal pain whose ultrasound and CT findings showed intussusception of the proximal ileal loop into the efferent jejunal loop which in-turn prolapsed into the stomach. The patient had undergone a gastro-jejunostomy 18 years ago for a peptic ulcer, further details about past history were not known.*

Keywords: *Post-operative complications, peptic ulcer, compound ileo-jejuno-gastric intussusception.*

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I. Introduction

Jejuno-gastric intussusception is a very rare complication of gastric surgeries like Roux-en-Y anastomosis, Billroth II operations, total and subtotal gastrojejunostomies.^[1,2] It was first reported by renowned surgeon Bozzi in 1914^[3], and since nearly 200 cases have been reported^[4] with an incidence of less than 0.1% of all gastric resections^[5]. In addition post-gastrojejunostomy intussusceptions have a mortality as high as 50% if not treated immediately.^[6] This paper reports a very rare case of Compound Retrograde ileo-jejuno-gastric intussusception developing in a 57 year old male, after undergoing gastro-jejunostomy for a peptic ulcer approximately 18 years earlier.

1.1 Case Report

A 5 year old male came to the ER with complaints of 7 episodes of bilious and coffee colored vomiting aggravated on eating and diffuse sudden abdominal pain with bouts of colicky pain relieved on vomiting. Patient also complained loss of weight and appetite. There were no complaints of abdominal distension, diarrhoea, malena or constipation. Patient's stools were of normal colour and consistency. The patient had a prior history of surgery done 18 years ago for a peptic ulcer but further details as to the surgery could not be elicited. Patient was diagnosed with pulmonary tuberculosis 45 days ago by sputum AFB and was started on anti-tuberculous treatment. Patient was not on any other medications, not an alcoholic or a smoker. On examination patient afebrile with features of some dehydration. Patient's blood pressure was 160/90 mmHg, pulse was 76/min and appears to have 100% oxygen saturation in room air. Examination of the abdomen revealed, a upper mid-line laprotomy scar. On palpation of the abdomen, a vague mass of ~ 7 x 8 cm in the epigastric region extending into the left lumbar and iliac regions. The mass shows visible gastric peristalsis. The abdomen was otherwise soft. Laboratory investigations showed (Haemoglobin - 11.7 gms%, White blood cell count - 10840/ cu.mm and Mildly elevated blood urea - 47 mg/dl). Serum electrolyte levels (Sodium - 130mEq/L, Potassium - 3.7 mmol/L, Chlorine - 93.7 mmol/L).

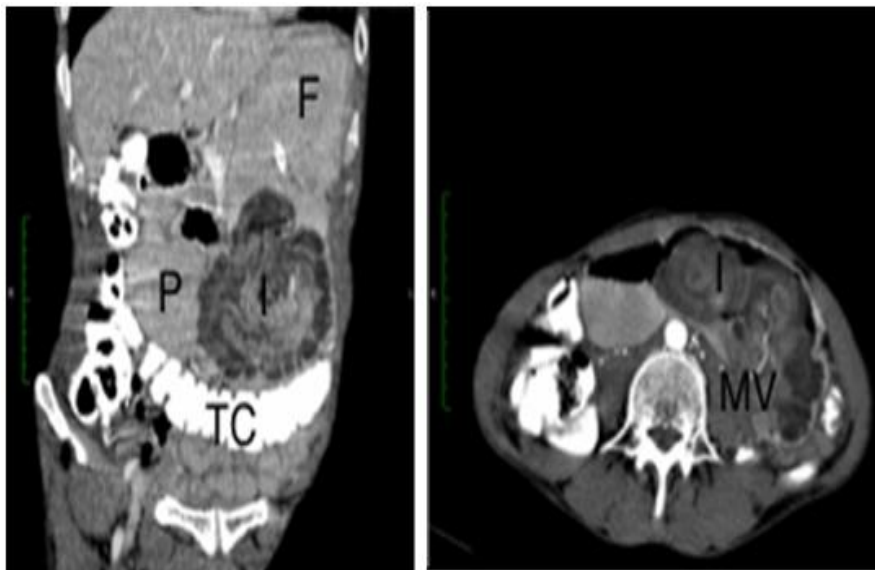
II. Images

Abdominal radiography showed no significant abnormality. Ultrasonography (USG) showed prolapse of small bowel loops (proximal ileal and jejunal loops) and few mesenteric vessels into stomach causing obstruction of the gastric outlet with gross distension of stomach. Minimal wall vascularity was noted in the prolapsed bowel loops.



[Figure 1 –Pseudokidney sign, Figure 2 – Target sign]

Contrast enhanced computerized tomography (CECT) showed intussusception of the proximal ileum into the jejunum which in-turn prolapsed into stomach through a defect in the posterior wall of the stomach. Arterial and venous phases of the CECT showed that along with small bowel, the superior mesenteric vessels were also seen to be in stomach. The bowel walls showed minimal enhancement. Other viscera appeared normal at the time of scan. Figure -

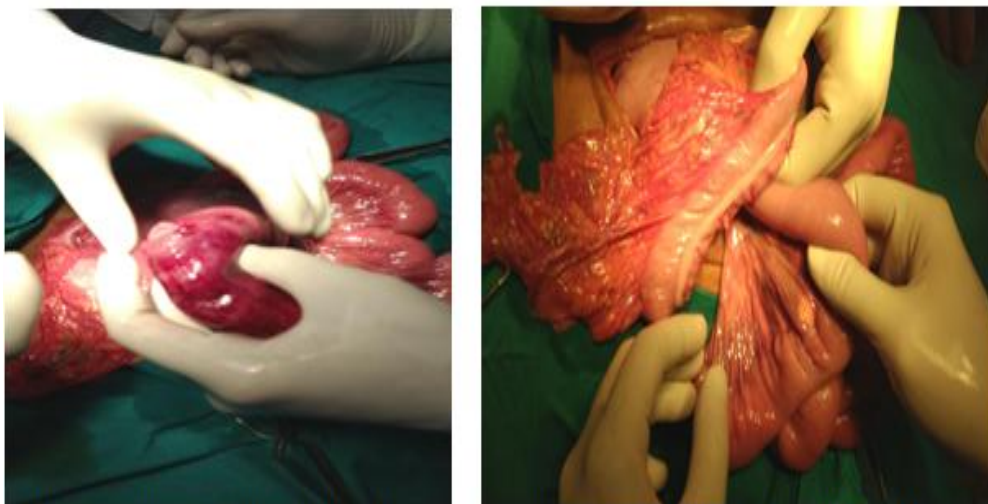


[Figure 3 – Post contrast CT coronal reformat showing retrograde ileojejuno-gastric intussusception with mild wall enhancement of intussusceptum, Figure 4 – Post contrast CT axial section showing a defect in the posterior wall of stomach with herniation of ileojejunal loops and mesenteric vessels into stomach(arrow). F – gastric Fundus, P – Pylorus, I – Intussusceptum, MV – Mesenteric Vessels, TC – Transverse Colon]

Based on these finding a diagnosis of Retrograde ileo-jejuno-gastric intussusception with possibility of early bowel ischemia was made.

III. Management

An initial treatment of intravenous fluid therapy was started to treat the mild electrolyte imbalance along with nasogastric tube suction and pre-operative antibiotics. The patient was taken for an open laprotomy in two hours after admission. Intra-operatively, evidence of prior gastro-jejunostomy were seen. A very short afferent loop was seen 1 inch from the Duodeno-jejunal flexure with a dilated efferent jejunal loop. The stomach was grossly stretched with the ileo-jejunal intussusceptum noted within. A cicatrizing D2 duodenal segment was also noted.



[Figure 5 – Intraoperative picture showing a cicatrizing ulcer with bruised small bowel loops, Figure 6 – herniated mesentery being delivered from the defect.]

Gentle manual reduction was attempted and the efferent jejunal loop was delivered in full. Mild contusions were noted in some parts of the intussusceptum. The jejunum was then divided 7 cm from the previous anastomosis site and an end-to-end anastomosis was carried out after checking for stromal growth at the site of the previous anastomosis. Post-operative period was uneventful and patient was discharged on the 11th day after surgery.

IV. Discussion

Jejuno-gastric intussusceptions are rare, (0.1%) acute complication of gastric resection, gastric anastomotic surgeries^[5], where small bowel loops prolapse into the stomach through the defect in the gastric wall created during the surgery. This case of Retrograde ileo-jejuno-gastric intussusception is a rare complication to occur in post-gastrojejunostomy status. These intussusceptions have also been reported to occur in Roux-en-y gastric bypass, Pancreatico-jejunostomy and rarely in association with previously placed gastrostomy tubes.^[7-9] Few authors claim the incidence of this complication to be 0.07% to 2.1% in patients who have undergone gastric resection. date up to approximately less than 300 cases of this complication (Jejuno-gastric intussusception) have been reported^[4] and we are reporting single case of Retrograde ileo-jejuno-gastric intussusception with early bowel ischemia. There is a wide variation in the duration between the gastric operation and occurrence of the intussusception, ranging from 6 days to almost 20 years. A single case of jejuno-gastric intussusception occurring 55 years after surgery has also been reported.^[11]

Typically, these intussusceptions are classified into 4 types

1. Anterograde intussusception of the afferent loop. (5.5 %)
2. Retrograde intussusception of the efferent loop. (75.5%)
3. Combination of I and II. (6.5%)
4. Intussusception through a braun side to side jejunojejunal anastomosis. (8%)^[12]
5. The case reported here is a type II.

The pathogenesis for the intussusception is unclear and is debated till now. Two theories exist as its explanation. The first theory is the functional theory which is more widely accepted states that it is the disordered motility with functional hyperperistalsis that causes the intussusception [13]. The mechanical theory states that mechanical factors such as adhesions, a long mesentery, gastric derangements and a sudden increase in intra-abdominal pressure serve an important role in causing the complication. [14]. Few other authors like Bakhsh et al, suggested that factors like long efferent loops, jejunal spasm with abnormal motility, widening of upper jejunum, vomiting, pregnancy, labour and other causes of increased intra-abdominal pressure, dilated atonic stomach, and retrograde peristalsis all play a role in post-gastric surgery jejuno-gastric intussusceptions. Clinically, jejunogastric intussusception can present either acutely fulminant or chronically intermittent.^[1,15] Acute presentation is characterized by sudden epigastric pain, emesis (could be hematemesis) and with a palpable and tender abdominal mass. This represent the classic triad of jejunogastric intussusception.^[16] Chronic forms may be roughly similar to acute form but are milder and transient.^[17] This could lead to wrong or delayed diagnosis. [18]. Hematemesis occurs when there is compromised jejunal vascular supply[19].

Due to its rarity this complication is rarely considered, even rarer so when the proper history of past surgeries cannot be elicited, as with this case. Jejunogastric intussusception can be diagnosed with various modalities like endoscopy, ultrasonography, barium and CECT studies.

Ultrasound findings of intussusception classically should show a mass within the stomach with a echogenic centre and a peripheral ring of hypoechogenicity. This is called the “doughnut sign” or “pseudo-kidney” sign.^[21] Even though ultrasound provides a clear cut view the investigation of choice for this condition is a CT. Typical finding on a CT is the presence of a target sign which is similar to the “doughnut” sign on ultrasound. Definitive treatment of jejuno-gastric intussusception is surgery as soon as possible. Options for surgical intervention include reduction with correction, resection of bowel if gangrenous, and anastomotic revision. Delay in surgery increases the mortality rate drastically from 10% for treatment within first 48 hours to over 50% in a 96 hour delay. Therefore early diagnosis is important in diagnosing a post operative jejuno-gastric intussusception.

References

- [1]. Archimandritis AJ, Hastzopoulos N, Hatzinikolaou N, Sougioultzis S, Kourtesas D, Papastrtis G, et al. Jejunogastric intussusception presented with hematemesis : a case presentation and review of literature. *BMC Gastroenterology* 2001; 1: 1-4.
- [2]. Bapaye M, Kolte S, Pai K, Godse A, Pardeshi A, Bhave A, et al. Jejunogastric intussusception presenting with outlet obstruction. *Indian J Gastroenterol* 2003; 22 : 31-2.
- [3]. Bozzi E. Annotation. *Bull Acad Med* 1914; 122: 3-4.
- [4]. P. Ashok, V. Manmadha Rao, Chandana. Retrograde Jejunogastric Intussusception: A Rare Complication of Gastrojejunostomy. *Journal of Evidence based Medicine and Healthcare*; Volume 2, Issue 8, February 23, 2015; Page: 1077-1080
- [5]. Wheatley MJ. Jejunogastric intussusception diagnosis and management. *J Clin Gastroenterol* 1989; 11: 452-454.
- [6]. Hovelius L. Jejunogastric intussusception after gastric resection. A report of two cases. *Acta chirurgica Scandinavica* 1971; 137: 491-494.
- [7]. Goverman J, Greenwald M, Gellman L and Ga-daleta D. Antiperistaltic (retrograde) intussus-ception after Roux-en-Y gastric bypass. *Am Surg* 2004; 70: 67-70.
- [8]. Whipple OC, Stringer EF, Senkowski CK and Hartley M. Retrograde intussusception of the efferent limb after a pancreaticojejunostomy. *Am Surg* 2003; 69: 353-355.
- [9]. Gasparri MG, Pipinos II, Kralovich KA and Mar-golin DA. Retrograde jejuno-gastric intussus-ception. *South Med J* 2000; 93: 499-500.
- [10]. Conklin EF and Markowitz AM. Intussuscep-tion, a complication of gastric surgery. *Surgery* 1965; 57: 480-488.
- [11]. Tokue H, Tsushima Y, Arai Y, Endo K. Jejunogastric Intussusception: Life-Threatening Complication Occuring 55 Years after Gastrojejunostomy. *Internal Medicine*. 2009;48(18):1657-1660.
- [12]. Brynitz S and Rubinstein E. Hematemesis cau-sed by jejuno-gastric intussusception. *En-doscopy* 1986; 18: 162-164.
- [13]. Robertson DS and Weder CH. Acute jejuno-gastric intussusception. *Can J Surg* 1968; 11: 210-214.
- [14]. Bundrick TJ and Turner MA. Retrograde jejunogastric intussusception. *Rev Interam Radiol* 1981; 6: 21-24.
- [15]. Bakhsh K, Igbinoia A, Egere JU, Ali A, Butt MS, Rehan AM. Jejunogastric intussusception: a rare cause of life threatening hematemesis. *Annals Saudi Med* 1997; 17 : 328-30.
- [16]. Lee SH, Kwon IG, Ryu SW, Sohn SS. Jejunogastric intussusception: a rare complication of gastric cancer surgery. *International Journal of Clinical and Experimental Medicine*. 2014;7(11):4498-4502.
- [17]. Kshirsagar A, Shinde S, Langade Y, Pujari S, Jeur A. Retrograde Jejunogastric Intussusception with Strangulation after Posterior Gastrojejunostomy. *Med J Armed Forces India*. 2008 Jul; 64(3): 282–283.
- [18]. Olsen AK and Bø O. Intussusception as a complication of partial gastrectomy. A case report. *Acta chirurgica Scandinavica* 1978; 144: 405-408.
- [19]. Foster DG. Retrograde jejuno-gastric intussus-ception; a rare cause of hematemesis; review of the literature and report of two cases. *AMA Arch Surg* 1956; 73: 1009-1017.
- [20]. O'Dell KB, Gordon RS and Victory C. Acute je-junogastric intussusception: a rare cause of abdominal pain. *Ann Emerg Med* 1992; 21: 565-567.
- [21]. Hammond N, Miller FH and Dynes M. In-tussusception into the enteroanastomosis af-ter Billroth II gastrectomy and Roux-en-Y jeju-nostomy: sonographic and CT findings. *AJR Am J Roentgenol* 2001; 177: 624-626.

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