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Antegrade jejunojejunal intussusception inside a retrograde jejunogastric intussusception (double intussusception)—A rare case report



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ABSTRACT

INTRODUCTION: Jejunogastric intussusception through a gastrojejunal stoma along with a jejunojejunal intussusception (intussusception within an intussusception) is a rare but serious complication of previous gastric surgery such as gastrojejunostomy and Billroth II gastrectomy. The incidence of which is less than 0.1%.

CASE PRESENTATION: An elderly male presented with an abdominal lump, diffuse abdominal pain and vomiting for one-day duration. Ultrasound and CECT abdomen revealed dilated stomach with jejunojejunal intussusception herniating into stomach. Emergency laparotomy was done with manual reduction of intussusception loops and roux-en-y anastomosis.

DISCUSSION: The number of cases reported in literature involving a jejunogastric intussusception following gastric surgery was about 300. Furthermore, there have been only two reported cases of jejunogastric intussusception along with jejunojejunal intussusception. The rarity of this clinical event makes it imperative for a high index of suspicion in patients presenting with abdominal pain following gastric surgery. **CONCLUSION:** The mortality of this condition ranges from 10% to 50%. Hence prompt diagnosis and early surgical intervention prevents vascular compromise and bowel gangrene.

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1. Introduction

Jejunojejunal intussusception inside a jejunogastric intussusception following a previous gastric surgery is one of the rarest complications. Around 300 cases of jejunogastric intussusception following previous gastric surgery have been recorded; whose incidence is 0.1% [1]. The association of jejunojejunal intussusception inside a jejunogastric intussusception (double intussusception) as in our case is still rarer, and as per literature only two similar cases has been reported. Here, we report a case of double intussusception through a previous gastrojejunostomy stoma presenting with acute gastric outlet obstruction where an early diagnosis and prompt intervention prevented bowel gangrene. The case was diagnosed and managed in a tertiary level teaching hospital. This case report has been written in accordance with the SCARE criteria [2].

2. Case presentation

A 57-year-old male presented to our emergency department with sudden onset of diffuse abdominal pain and vomiting for one-day duration. He had a history of elective abdominal surgery for acid peptic disease 18 years back, the details of which are not known. The patient was dehydrated and had tachycardia. Abdomen examination revealed a healed midline vertical scar. A soft tender ill-defined mass of size 7*8 cm was palpable to the left of umbilicus which moved with respiration, with no guarding or rigidity. Nasogastric tube aspiration showed coffee ground fluid. Routine blood investigations were within normal limits.

USG abdomen showed a dilated stomach with few small bowel loops inside the stomach (pseudo kidney sign) (Fig. 1).

CECT abdomen revealed jejunojejunal intussusception (target sign) herniating into the stomach causing partial gastric outlet obstruction (Fig. 2).

After initial resuscitation, emergency exploratory laparotomy was done under general anaesthesia. Intra operatively a dilated stomach with a palpable mass and a posterior gastrojejunostomy having a short afferent loop was found (Fig. 3). By gentle manual traction the efferent loop of jejunum was delivered out and the intussusception reduced, revealing a large posterior gastrojejunostomy stoma. About 15 cm of the delivered jejunum was found to

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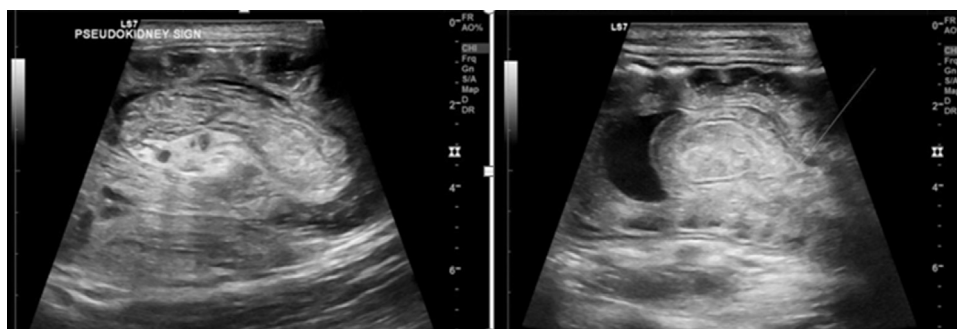


Fig. 1. Ultrasonogram showing pseudo kidney sign.

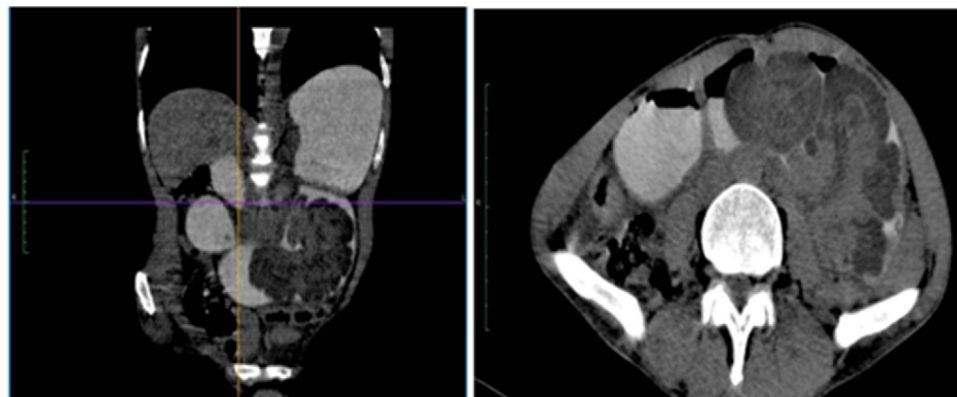


Fig. 2. CECT showing jejuno gastric intussusception and Target sign.

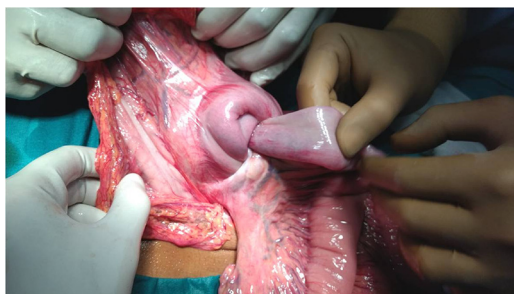


Fig. 3. Intraoperative picture showing jejunogastric intussusception through previous gastro jejunostomy stoma.



Fig. 4. Contused jejunum after manual reduction of intussusceptions.

be contused (intussusception part) (Fig. 4) and no leading point identified.

After delivering 100% oxygen and giving warm compression, the contused part of jejunum turned pink with intact pulsations and peristalsis. As the afferent loop was short, Braun's procedure was deferred and a Roux-en-Y anterior gastro jejunostomy with jejuno-jejunosomy was done. The postoperative period was uneventful. The patient was doing well on follow up after 4 months.

3. Discussion

Jejunogastric intussusception was first described by Bozzi in 1914 [3]. This complication can occur at any time following Billroth II gastrectomy or gastrojejunostomy.

The anatomical classification for jejunogastric intussusceptions which is widely accepted was proposed by Schackman et al. [4] which categorises the jejunogastric intussusception into 3 types.

- Type I – Afferent loop intussusceptions (ante grade) – 16%.
- Type II – Efferent loop intussusceptions (retrograde) – 74%.

Type III – combined form – 10%.

Our case partly fits into type II Shackman classification.

Another classification by Brynitz and Rubinstein [5] gives a greater detail about jejunogastric intussusception which classifies it into following types:

- Type 1–afferent loop intussusception (5.5%)
- Type 2a – efferent loop intussusception (70%)
- Type 2b – efferent-efferent loop intussusception (6.5%)
- Type 3–combination of Type 1 and 2 (10%)
- Type 4–intussusception through Braun's side to side jejunojejunal anastomosis (8%).

By this classification our case fits into type 2b.

The aetiology of this condition is considered functional, and in none of the cases have there been reports of any pathological changes such as a tumour. Various mechanisms have been proposed for the development of jejuno-gastric intussusception. But none of which is completely understood [6]. The pathophysiological factors incriminated are hyper acidic state, a very long afferent loop, jejunal spasm associated with abnormal bowel motility, a raised intra-abdominal pressure and retrograde peristalsis [7]. Retrograde peristalsis is considered as a cause of Type II jejuno-gastric intussusception.

Treatment of jejuno-gastric intussusception can be done by endoscopic and surgical methods. Endoscopic management is done only in selected cases and endoscopic reduction is associated with increased rate of recurrences [8]. Surgical management differ based on intraoperative finding. Various surgical approaches are

1. Gentle manual reduction of intussusceptions.
2. Revision of anastomotic site
3. Anchoring of efferent limb to surrounding structures like parietal peritoneum.
4. Creation of new Roux-en-Y loop [9]
5. For gangrenous bowel, resection and revision anastomosis [10].

The viability of the bowel is checked by the change in the colour of the bowel concomitant with the inhalation of 100% oxygen. The immediate change of dusky coloured bowel to bright pink is an indication that blood is circulating through the wall of the bowel, and viable.

Conventional clinical judgment is fairly accurate in the assessment of intestinal viability following ischemic injury. Numerous techniques assessing various parameters of intestinal viability are described by the studies. However, there is no consensus about their clinical use. Some of them are pulseoximetry, polarographic measurement of oxygen tension, near-infrared and visible light spectrophotometry, Doppler ultrasound, fluorescence studies [11].

4. Conclusion

A high index of clinical suspicion is required for early diagnosis and urgent intervention to avoid lethal complications. The mortality rate is found to increase with the delay in diagnosis and surgical intervention, ranging from 10% within the initial 48 h to 50% with the 96 h delay [12]. In our case an early intervention has prevented bowel gangrene thereby reducing the morbidity of the condition.

Conflict of interest

None.

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Ethical approval

Ethical approval obtained.

Consent

Consent obtained.

Written informed consent was obtained from the patient for publication of this case report and accompanying images

Author contribution

All the authors were involved in the management of this patient and in drafting the case report.

Guarantor

Dr.R.Samson.

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