

ORIGINAL ARTICLE**RETROGRADE JEJUNOGASTRIC INTUSSUSCEPTION**Yusuf Mohammed Yusuf, MD¹*, Adem Ali Ahmed, MD¹, Amir Mohammed Oumer, MD¹**ABSTRACT**

Retrograde jejuno-gastric intussusception is a very rare complication that can follow gastric surgeries, especially gastrojejunostomy. Since this is a potentially fatal condition, emergency surgical intervention is mandatory. We report the case of a 38 year old lady who presented with vomiting of one month duration that became severe a few days before presentation to the hospital. Even though she had history of previous gastric surgery, and ultrasound showed a mass in the stomach, we did not anticipate the subsequent intra-operative finding because of the rarity of this condition. Laparotomy revealed type II retrograde jejunogastric intussusception, which was manually reduced and ascertained viable bowel loops. Postoperative recovery was complicated by hospital acquired pneumonia from which she recovered with appropriate treatment and discharged on the 15th postoperative day.

Key words: *Jejunogastric intussusception, Intussusception, Gastrojejunostomy, Intestinal Obstruction*

INTRODUCTION

Retrograde jejuno-gastric intussusception (RJGI) is an invagination of the jejunum into the adjacent proximal segment in a retro peristaltic direction, driven all the way into the stomach through the anastomotic stoma (1). This was first described by Bozzi in 1914, in a patient with gastroenterostomy (2). Eight years later it was reported in a patient with Billroth II resection (3). So far, only about 200 cases have been reported in the literature worldwide (2-4). To our knowledge this is the first report in Ethiopia of RJGI. We present this case because of its rarity, and to create awareness to surgeons, so that diagnosis is made early to avoid the dreadful life threatening complications.

CASE SUMMARY

We present the case of a 30-year old lady, who was admitted in March 2015 to the Surgical Ward in Ethio-Tebib Hospital. She came with a complaint of crampy upper abdominal pain aggravated by meal and on and off vomiting of one month duration. The vomiting was non-projectile containing ingested food and sometimes bilious. But two days prior to her admission it turned coffee ground in color. She had no problem of passing flatus but had constipation. She had lost considerable amount of weight that she couldn't quantify. The patient was operated at a rural hospital six years ago for a persistent vomiting.

The information on the referral note read "intra-operatively adhesions were seen around the pylorus and retro-colic gastro-jejunostomy was performed".

On examination, she was sick looking with B/P of 80/50mmHg, Pulse rate of 112/min, and Temperature of 36.5°C and had sunken eyeballs and a dry tongue. Abdominal examination showed an upper midline scar with mild epigastric tenderness, but no palpable mass identified and bowel sounds were normal. On investigation, a plain abdominal x-ray was normal and an abdominal ultrasound showed an ill-defined heterogeneous mass in the stomach. Upper gastrointestinal endoscopy reported an edematous and hyperemic gastrojejunostomy site. Barium meal examination reported proximal intestinal obstruction with a vague filling defect in the stomach.

With a pre-operative diagnosis of gastric mass and stomal obstruction, she was admitted and was resuscitated and got her fluid and electrolyte deficits were corrected and had explorative laparotomy done. Intra-operatively, the efferent loop of jejunum was noticed invaginating proximally into itself in a retrograde direction all the way into the stomach through the gastrojejunostomy stoma. Careful manual manipulation was successful in reducing a viable segment of jejunum of about 18-20cm in length. Both the stomach and jejunum were free of any other mass and no enlarged lymph nodes were seen. The afferent loop was found to be normal and as both vagal nerve trunks were identified intact, truncal vagotomies were performed.

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Figure 1: Ultrasound picture of the gastric mass.

Postoperative course was complicated by hospital-acquired pneumonia that was successfully treated with antibiotics and chest physiotherapy. The patient was discharged after a complete recovery on the 15th postoperative day.

DISCUSSION

Gastrectomies and gastric bypass surgeries are done for both benign and malignant upper gastro-intestinal pathologies. Post-operative complications that may follow these procedures can be either general post operative or specific to this type only. RJGI is one of the very rare complications that may follow such procedures. The incidence of RJGI is 0.0015, that is 3 in 2000 gastro-enterostomies (5). In a period of 72 years (1907-1980), only 16 well documented cases were recognized at Mayo Clinic (6). The term RJGI was used for the first time by John Hunter to describe an invagination of the intussusceptum in an antiperistaltic direction (3). Three categories of RJGI are described by Shackman et al. according to their anatomical variation (7):

- Type I: Afferent loop intussusception (antegrade) -10%
- Type II: Efferent loop intussusception (retrograde) -80%
- Type III: Combined (Afferent and Efferent) - 10%

The other type of classification of RJGI is clinical, which has acute and chronic forms (7). The acute form is a result of incarceration and strangulation of the intussuscepted loop. Its manifestations are severe cramps and vomiting (7). The presence of a mobile mass in association with pain and vomiting, in a patient who has had previous gastric surgery is considered pathognomonic of acute RJGI (7).



Figure 2: Intra-operative picture of RJGI

Our patient had abdominal pain, vomiting and previous history of gastric surgery. The fact that ultrasound showed a gastric mass should have raised a high suspicion for RJGI were it not for lack of awareness on such a rare disease. The chronic form has symptoms similar to the acute form, but are milder, transient, and subside spontaneously (6,7).

Our patient dates back the onset of her symptoms to one month suggesting it was the chronic type initially with the bowel loops probably undergoing invagination and spontaneous reduction. However, in the final days before admission the pain got worse, vomiting became voluminous with signs of gastrointestinal bleeding and developed tenderness at the epigastrium suggestive of incarceration and progression to the acute type that necessitated urgent intervention.

The pathogenesis of RJGI is unknown, but several possible causes had been discussed. One of the theories is functional causes, where antiperistalsis may be related to hyperacidity or spasm (8). Both vagal trunks were found intact in our patient, which can lead to hyperacidity and thus be factors contributing to the probable cause. Other contributing factors could be increased intra-abdominal pressure, adhesions developing after laparotomy, derangement in stomal function produced by vomiting, long afferent loop and jejunal spasm with abnormal mobility (8).

Plain x-ray of the abdomen may show homogeneous density in left upper quadrant that represents small bowel in stomach (9). Ultrasound is the first line of investigation preferred. It may show a mass with an echogenic center surrounded by concentric echogenic rings with peripheral rim of hypogenicity (9).

Barium meal examination usually shows filling defect in the stomach or typical coil ring appearance within the gastric pouch (9). Endoscopy if performed by someone who is familiar with this entity can be diagnostic but sometimes the findings may be mistaken for a clot or a bezoar (4,8). CT can be of use to define the type of intussusception and assess the viability of the invaginated bowel loop (10).

Diagnosis is usually made at laparotomy. The main reason for ultrasound and endoscopy to miss the diagnosis in our patient was inexperience and lack of familiarity with this extremely rare entity. Early diagnosis is crucial as mortality may reach 50% if surgical intervention is delayed for more than 48 hours (4,8).

Treatment is always surgical for the acute type (11). Reduction of intussusception is done if bowel loops are viable and reducible, or resected if it is gangrenous (11). Following reduction of the intussusceptions various options are suggested to prevent recurrence, which in fact is very rare even if no additional procedure is added (11).

Some of these are plicating the mesentery of the jejunum in the area of intussusception, fixing the efferent loop to adjacent tissues such as the afferent loop of jejunum or the transverse meso-colon, colon, stomach and parietal wall (11). In our case to prevent recurrence a side to side jejuno-jejunosomy (Braun's) was done. We hope that sharing our experience will create awareness as this is crucial in early diagnosis and management.

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Conflict of Interest: Authors have no conflict of interest to declare.

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