

Case Report

A retrograde intussusception of Roux-en-Y gastrojejunostomy: an unusual cause of haematemesis

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ABSTRACT

Jejunogastric intussusception is a rare complication following gastric surgery and is estimated to occur in less than 0.1% of patients. It is a potentially fatal complication, if prompt diagnosis and surgical intervention is not performed immediately. Here, we present a case of retrograde jejunogastric intussusception who presented with haematemesis. Patient was diagnosed by an upper GI endoscopy. The diagnosis, management and the etiological theories of jejunogastric intussusception following gastric surgery are discussed here.

Keywords: Retrograde intussusception, Roux-en-Y gastrojejunostomy, Haematemesis, Upper GI endoscopy

INTRODUCTION

Intussusception in adults, especially following gastric surgery is rare; occur in less than 0.1% of patients.^{1,2} So far in literature, only 200 cases have been reported of retrograde jejunogastric intussusception. This complication has been reported, as less as 8 days to 20 yrs after gastric surgery. Early diagnosis and early surgical management is crucial, since the mortality in these cases have been reported between 10 to 50%.³ Here we describe a case of retrograde intussusception after Roux-en-Y gastrojejunostomy (GJ) who presented with haematemesis. Upper oesophagogastric endoscopy showed the jejunogastric intussusception. Surgical treatment included reduction of the intussusception, resection of the gangrenous part of the jejunum and fixation of both limbs of the Roux-en-Y GJ to the parietal peritoneum.

CASE REPORT

A 20 year old man presented with two days history of coffee ground vomitus and black colored stools. He also

complained of fatigue. He had colicky abdominal pain for two days. He had no similar history in the past. He had undergone a laparoscopic truncal vagotomy and Roux-en-Y GJ for gastric outlet obstruction in August 2015. He had an uneventful post-operative period then.

On physical examination, he had no tenderness or mass in the abdomen. His laboratory investigations revealed a low hematocrit. All other blood reports were unremarkable. This was his first hospital admission following that procedure. He initially underwent an ultrasound of the abdomen in the emergency department, which showed features suggestive of an intussusception in the epigastric region. He then underwent an upper GI endoscopy after adequate resuscitation.

Endoscopy showed a large polypoidal mass with surface ulceration seen protruding through the GJ along the greater curvature of the stomach, diagnosis of jejunal intussusception into the stomach was made. The GJ was open and patent. Despite inflation it was not possible to reduce the intussusception. He was then posted for a laparotomy. On table findings showed that the blind end

of the roux loop had intussuscepted into the stomach through the gastro jejunostomy.

The intussusception was reduced and the intussuscepted part was resected. Since it was the blind end of the Roux loop and the GJ was patent there was no need for revision of the GJ. Both the ends of the Roux loop were then fixed onto the parietal peritoneum with 3-0 silk stitch. Thorough gross inspection of the resected specimen showed no evidence of an intraluminal, intramural or extraluminal lesion, which could have been the lead point for the intussusception. He had an uneventful post-operative period and was discharged on the 3rd post-operative day.



Figure 1: Endoscopic view of the jejuno gastric intussusception.



Figure 2: Intra operative picture of the gastrojejunostomy.

DISCUSSION

Intussusception following gastric surgery was first described in 1917 by Bozzi.¹ It is a rare complication and the incidence is less than 0.1 %.² So far, only 200 cases have been reported in the literature. This complication is seen after gastrojejunostomy, Billroth II gastrectomy and Roux-en-Y anastomosis. There are three categories of jejuno gastric intussusception as proposed by Shachman.³

1. Type I - afferent loop intussusception (antegrade),
2. Type II-efferent loop intussusception (retrograde),
3. Type III- combined type.



Figure 3: Intra operative picture of the retrograde intussusception of the gastro jejunostomy.



Figure 4: Intra operative picture of the intussuscepted part of the blind end of the Roux loop.



Figure 5: The resected specimen of the intussuscepted part of the Roux loop being opened.



Figure 6: Opened specimen of the intussuscepted part of the blind end of the Roux loop.

80% of patients present with type II, only 10% with the other two. Though this classification is good for Billroth II it's difficult to apply for Roux-en-Y anastomosis. This complication is seen less now post TV GJ due to decrease in number of patients being operated for benign causes of gastric outlet obstruction. But with the increase in number of gastric bypass patients for obesity we will see more of this rare complication in near future. Goverman and colleagues in 2004 reported two cases of retrograde intussusception out of more than 600 Roux-en-Y gastric bypass procedures in their experiences, which confirms

the rarity of this disease. Most of the cases reported in literature, were of jejunojejunal intussusception following Roux-en-Y, though all three limbs of the Roux-en-Y anastomosis can be affected.^{4,5}

The exact pathogenesis of intussusception in a patient following gastric surgery with either Billroth II or Roux-en-Y jejunostomy is still very poorly understood. It could be due to long afferent loop, abnormal jejunal motility. Other etiological factors could be suture or staple approximations, post-operative adhesions or intraluminal prosthesis. Some investigators have suggested Roux stasis syndrome as a cause for retrograde intussusception in Roux-en-Y anastomosis.⁴⁻⁶ They postulated that disruption of myoelectrical activity confounded by the presence of an ectopic pacemaker distal to the jejunojejunostomy site.

The resulting atony and dilatation of the roux limb, together with the antiperistaltic contraction at its distal end, could explain this unusual and rare complication. In our case we did not find any lead point for the jejunogastric intussusception.

Two forms of this condition have been described in literature, acute and chronic.^{1,7,8} The acute form presents with acute colicky pain, vomiting and subsequently haematemesis. Epigastric tenderness with a palpable mass, with or without high gastrointestinal obstruction may be seen. Incarceration followed by strangulation of the intussuscepted loop is seen in the acute form. While in the chronic form spontaneous reduction is seen, hence difficult to diagnose.

With history of previous gastric surgery in a patient with abdominal pain and haematemesis, the index of suspicion of intussusception should be high. Diagnosis in such patients can be made on endoscopy by an experienced person. The endoscopy will show the prolapsed jejunum into the stomach along the greater curvature, with or without surface ulceration.^{9,10} Reduction can be attempted via endoscopy but recurrence rates are high. In chronic cases, it may be difficult to diagnose endoscopically. The provocation of jejunogastric intussusception by use of water jet directed at the anastomosis during endoscopy may be diagnostic.¹¹ Other diagnostic tests include ultrasonography showing target sign, upper GI series using water soluble contrasts which will show coiled spring appearance within the stomach and computerized tomography of the abdomen. In our patient the diagnosis was confirmed by endoscopy and ultrasound.

There is no medical line of management in patients with this rare complication. The surgical options include reduction, reduction with plication, resection of the affected bowel with or without revision of the anastomosis. Daellenbach's review showed that even though reduction is a safe option, resection with or without reconstruction decreases recurrence rate, 7.7% vs 31.5% as seen with reduction only.¹²

Early diagnosis is critical as mortality rate increases if surgery is delayed. The reported mortality rate ranges from 10 % to 50 % with a 96 hour delay in the acute presentation of this condition.

CONCLUSION

Retrograde jejuno gastric intussusception is rare but potentially fatal complication which can occur after gastric surgery. Jejuno gastric intussusception should be thought of as a differential diagnosis, in a patient with haematemesis or high gastro intestinal obstruction with past history of gastric surgery.

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