International Surgery Journal
Ganesan S et al. Int Surg J. 2019 Aug;6(8):2995-2998
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: http://dx.doi.org/10.18203/2349-2902.isj20193358

Case Report

Internal hernia with Roux loop gangrene in a post freys patient

Swaminathan Ganesan[1]*, Satish Devakumar[2]

[1]Department of General Surgery, Sree Balaji Medical College and Hospital, Chennai, India
[2]Department of Surgical Gastroenterology, Institute of Surgical Gastroenterology, Madras Medical College, Chennai, India

Received: 23 April 2019
Revised: 22 June 2019
Accepted: 26 June 2019

***Correspondence:**
Dr. Swaminathan Ganesan,
E-mail: swami.doc@gmail.com

ABSTRACT

High degree suspicion is mandatory in dealing with a post-operative patient presenting with a crampy postprandial abdominal pain, as potential for internal hernias remains fairly under diagnosed. Except in setting of small bowel obstruction or gangrene and radiological proven internal hernia, intervening a patient with herald symptoms is still debatable, though certain authors advocate that in lap. Roux-en Y gastric bypass patients with herald symptoms should promptly be offered elective laparoscopic exploration elective repair safely and expeditiously.

Keywords: Internal hernia, Post-operative Frey's patient, Roux loop gangrene

INTRODUCTION

Internal hernias have increased in prevalence due to the ardent use of minimally invasive surgeries being done in large numbers and advanced diagnostic methods which promptly identify the lesion. Traditional hernial defects have become rare and newer unexplored spaces have become popping up. Here we present a case that had open Frey's procedure and internal hernia at an unsual defect and unusual presentation.

CASE REPORT

A 34 year old male presented to the emergency department with history of acute abdominal pain, abdominal distension and vomiting for the past one week. The pain was initially low in intensity and intermittent, increased progressively over the past one week to become continuous and severe along with abdominal distension, more over the upper abdomen, and vomiting. Vomiting was bilious and there was a significant obstipation past one week.

Patient is a known case of chronic calcific pancreatitis for which Frey's procedure was done before eight months. Patient was uneventful during the intervening period from post op to present episode except for intermittent abdominal pain associated with increased food intake relieved by antispasmodics.

On examination he was a thin built middle aged individual, febrile, pulse rate: 112/min, BP: 110/70 mm of Hg, tachypnoeic, abdomen was distended more over the upper abdomen with guarding and rigidity. Previous roof top incision scar noted. Bowel sounds were decreased, per rectal examination revealed an empty rectum with no other abnormalities detected. Blood investigations revealed and increased total count with neutrophilia.

A working diagnosis of acute intestinal obstruction was made and an emergency CECT abdomen was done which showed gangrenous bowel loop over right of midline in upper abdomen with multiple fluid filled dilated bowel loops on the right side of the abdomen. Counterclockwise

swirling of mesenteric vessels near the site of gangrenous bowel loops.

Patient was taken up for an emergency laparotomy and abdomen opened in midline incision. Large bowel loops adherent to previous roof top scar released. There was a caecal knotting of small intestine, i.e. caecum was herniated through the mesenteric defect posterior to the roux limb in counterclockwise direction, similar to Peterson's hernia, causing compression of mesentery and vascular compromise to roux limb, causing gangrene or roux limb up to 20 cm including the pancreatico jejunostomy part. The PJ was dismantled, and JJ was dismantled, the gangrenous loop was resected out, new roux loop was created and emergency redo Frey's procedure was done, alimentary limb was anastomosed by side to side jejunostomy, feeding jejunostomy was also done. Thorough peritoneal wash given abdomen was closed in layers. Post op period was uneventful feeds through FJ was started on 5th day, passed stools on 7th day, started oral diets from the same day, drain was clear serosanguinous, and was removed on 15th day. Patient was discharged on 22nd day.

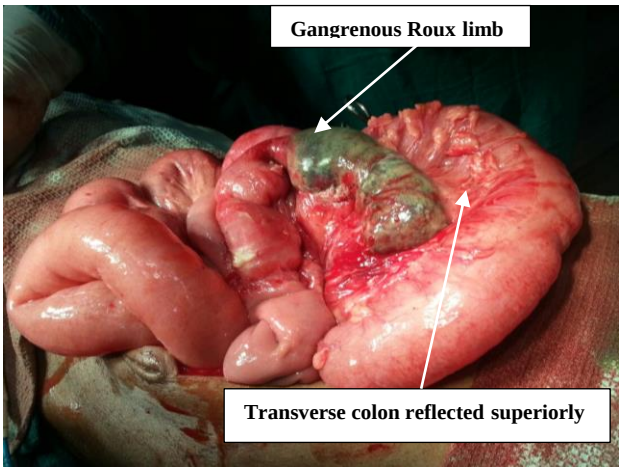

Figure 1A: Intraoperative photograph.

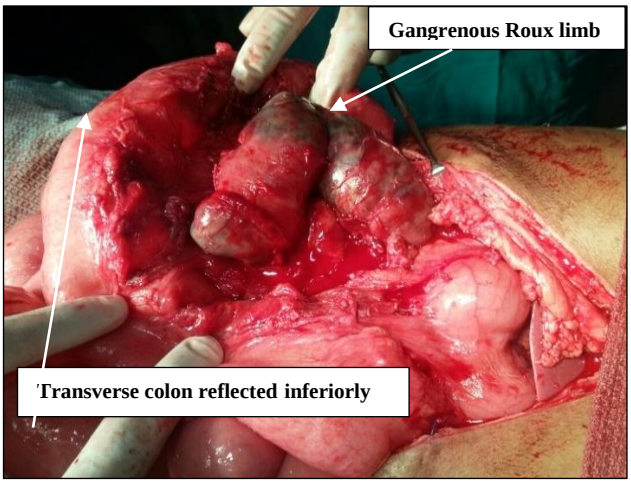

Figure 1B: Intraoperative photograph.

DISCUSSION

Internal hernias have an overall incidence of less than 1%, they constitute up to 5.8% of all small-bowel obstructions, which, if left untreated, have been reported to have an overall mortality exceeding 50% if strangulation is present.[1,2] Internal hernias are classified traditionally by Meyers, based on location.[3] Specifically, using historical data, these consist of paraduodenal (53%), pericecal (13%), foramen of Winslow (8%), transmesenteric and transmesocolic (8%), intersigmoid (6%), and retroanastomotic (5%). Out of which transmesentric, transmesocolic and retroanastamotic mostly occurs postsurgical. Literatures have quoted an increasing rate of internal hernias with laparoscopic Roux-en Y gastric bypass, internal hernias have also been reported from transplant patients.[4-7] Case reports, of internal hernias post Frey's procedure, available are less common. The internal hernias occur through the potential mesenteric defects occurring postsurgical and its commonness among laparoscopic surgeries are attributed to less postoperative adhesions.

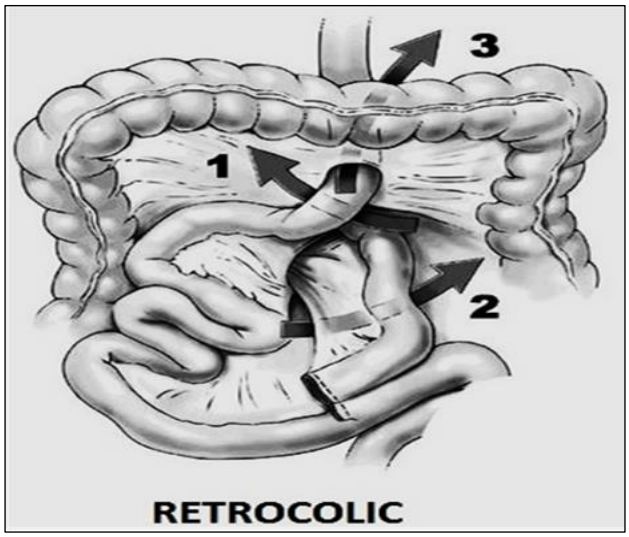

Figure 2: Potential internal hernia defects.

Figure 2 adapted from "laparoscopic closure of mesenteric defects after Roux-en-Y gastric bypass."[8] Potential mesenteric opening that could lead to internal hernia after Roux-en-Y gastric bypass. (1) Petersen hernia (space between mesentery of Roux-limb and transverse mesocolon), (2) jejunojejunostomy mesenteric defect and (3) transverse mesocolon defect.

In these cases the caecum has herniated through the retroanastomotic site, by definition acquired abnormal aperture type of internal hernia. The most common herniated loop consists of the efferent jejunal segment, which occurs in approximately 75% of cases.[1] Less commonly, a very long afferent limb, ileum, cecum, or omentum can herniate into the retroanastomotic space. The retroanastomotic type tends to occur most commonly during the first postoperative month, with 50% presenting

during this time.[1,3] Of the remaining 50%, half will occur after the first year, and the other half (or 25% of the total) will occur between months 2 and 12.[3]

The common presenting symptom is intermittent crampy abdominal pain and nausea usually associated with binge eating occurring several days to months prior to actual small bowel obstruction, the progression may lead to acute intestinal obstruction with gangrene of herniated segment.[1,13] If strangulation occurs the mortality rates were 30% to 100% for treated vs non treated group.[1,3] In our case as a peculiar fact the herniated caecum did not go for strangulation but the roux loop, which had its vascularity compromised from the pressure effects of the herniated bowel, went in for gangrene.

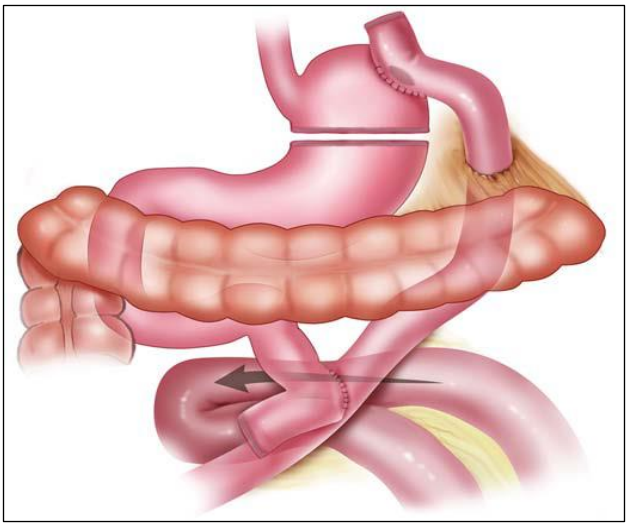

Figure 3: Internal hernia defects in lap Roux-en-Y bypass.

Figure 3 adapted from "laparoscopic closure of mesenteric defects after Roux-en-Y gastric bypass".[8]

A retro-anastomotic hernia involving the small bowel loops, in our case the similar picture appeared but with caecum in the place of small bowel loop.

Imaging modalities prove to be useful in setting of acute intestinal obstruction. Many studies concluded that the only statistically significant signs were relatively nonspecific findings of small-bowel dilatation with transition point, clustering of small-bowel loops, and mesenteric vessel abnormalities (including displacement of the main mesenteric trunk to the right), obtaining an overall average sensitivity of 63%, specificity of 73%, and accuracy of 77% 9. "Closed loop" sign, twisting of the mesenteric vessels and the whirl sign if volvulus is present, may also be seen. [1,10,11]

Occasionally, there may even be evidence of ischemia with ascites and bowel wall thickening present.[12] In our case there were mesenteric vessels abnormality with the gangrenous bowel loop and multiple dilated bowel loops on the right of the abdomen.

Management of internal hernias depends on the circumstances of diagnosis, in setting of acute intestinal obstruction or gangrene of bowel emergency exploration and fixation of the hernia or gangrenous bowel loop with resection anastomosis, with closure of potential mesenteric defects remains the only treatment. In case non obstructive and non-gangrenous setting, Higa et al, advocated a laparoscopic fixation of the internal hernia with closure of all potential mesenteric defects including Petersons space.[13] Furthermore they extend that continuous suturing with a non-absorbable suture material proves better in preventing the internal hernia, though a conclusion of elimination of the problem could not be made out.[13]

CONCLUSION

Internal hernias traditionally described to be congenital have risen again in par with the rising new surgeries and surgical techniques. Internal hernias are common among open and laparoscopic surgeries though an increased incidence is noted among the laparoscopic technique particularly lap. Roux-en-Y gastric bypass. The etiologies perceived to be are the potential mesenteric defects created during the surgery which are often not fixed in the traditional methods. Unless a small bowel obstruction or gangrene is encountered, many patients will present with intermittent non-specific crampy post prandial abdominal pain only, usually interpreted as patient non-compliance or most often attributed to post-operative adhesions.

Work-up should include non-invasive studies as indicated but is not complete unless an exploration is performed. Up to 20% of these studies will be normal, even though symptoms are due to intermittent obstruction or ischemia as a result of the internal hernia. Management mainly should be focused on the prevention, by closing all potential mesenteric defects with continuous running non absorbable suturing.

High degree suspicion is mandatory in dealing with a post-operative patient presenting with a crampy postprandial abdominal pain, as potential for internal hernias remains fairly under diagnosed.

Except in setting of small bowel obstruction or gangrene and radiological proven internal hernia, intervening a patient with herald symptoms is still debatable, though certain authors advocate that in lap. Roux-en-Y gastric bypass patients with herald symptoms should promptly be offered elective laparoscopic exploration elective repair safely and expeditiously.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Ghahremani GG. Abdominal and pelvic hernias. In: Gore RM, Levine MS, eds. Textbook of gastrointestinal radiology. 2nd Ed. Philadelphia, PA: Saunders. 2000:1993-2009.
2. Newsom BD, Kukora JS. Congenital and acquired internal hernias: unusual causes of small bowel obstruction. Am J Surg. 1986;152(3):279-84.
3. Meyers MA. Dynamic radiology of the abdomen: normal and pathologic anatomy. 4th ed. New York, NY: Springer-Verlag;1994:423.
4. Serra C, Baltasar A, Bou R, Miró J, Cipagauta LA. Internal hernias and gastric perforation after a laparoscopic gastric bypass. Obes Surg. 1999;9(6):546-9.
5. Schweitzer MA, Demaria EJ, Broderick TJ, Sugerman HJ. Laparoscopic closure of mesenteric defects after Roux-en-Y gastric bypass. J Laparoendosc Adv Surg Tech A. 2000;10(3):173-5.
6. Higa KD, Boone KB, Ho T. Complications of the laparoscopic Roux-en-Y gastric bypass: 1,040 patients – what have we learned? Obes Surg. 2000;10(10):509-13.
7. Khanna A, Newman B, Reyes J, Fung JJ, Todo S, Starzl TE. Internal hernia and volvulus of the small bowel following liver transplantation. Transpl Int. 1997;10(2):133-6.
8. Blachar A, Federle MP, Brancatelli G, Peterson MS, Oliver JH 3rd, Li W. Radiologist performance in the diagnosis of internal hernia by using specific CT findings with emphasis on transmesenteric hernia. Radiology. 2001;221(2):422-8.
9. Blachar A, Federle MP. Internal hernia: an increasingly common cause of small bowel obstruction. Semin Ultrasound CT MR. 2002;23(2):174-83.
10. Mathieu D, Luciani A. Internal abdominal herniations. Am J Roentgenol. 2004;183(2):397-404.
11. Blachar A, Federle MP, Dodson SF. Internal hernia: clinical and imaging findings in 17 patients with emphasis on CT criteria. Radiology. 2001;218(1):68-74.
12. Higa KD, Ho T, Boone KB, Internal Hernias after Laparoscopic Roux-en-Y Gastric Bypass: Incidence, Treatment and Prevention. Obes Surg. 2003;13(3):350-4.
13. Gandhi AD, Patel RA, Brolin RE. Elective laparoscopy for herald symptoms of mesenteric/internal hernia after laparoscopic Roux-en-Y gastric bypass. Surg Obes Relat Dis. 2009;5(2):144-9.

Cite this article as: Ganesan S, Devakumar S. Internal hernia with Roux loop gangrene in a post freys patient. Int Surg J 2019;6:2995-8.