Jejunoojejunostomy intussusception after gastric bypass: Case report of a rare but serious complication

Ajay Kohli a,*, Lily Gutnik a, Danielle Berman b, Anil Narula c

a Department of Surgery, Montefiore Hospital of Albert Einstein College of Medicine, 111 E210th St., Bronx, NY, United States
b North Central Bronx Hospital, 3424 Kossuth Ave, Bronx, NY 10467, United States
c Department of Surgery, North Central Bronx Hospital, 3424 Kossuth Ave, Bronx, NY 10467, United States

ARTICLE INFO
Article history:
Received 2 October 2016
Accepted 30 October 2016
Available online 7 December 2016

Keywords:
Gastric bypass
Surgical complication
Intussusception
Patient care
Patient management
Surgical care

ABSTRACT

Obesity, and the comorbidities associated with it, have become endemic within society. Roux-en-Y gastric bypass (RYGB) surgery is an increasingly common procedure with medical and cosmetic benefits (Li et al., 2014) [1]. However, as the case volume increases so do the rate of uncommon complications and it is imperative for surgeons to be aware of management guidelines of these complications. We present a case of Retrograde intussusception (RI) which is a rare complication status post RYGB. It is most commonly reported at the jejunoojejunostomy (JJ) site, and it is hypothesized to be secondary to an antiperistaltic (retrograde) telescoping of the common limb going into the jejunal anastomosis (Varban et al., 2013) [2,3]. We present another case study as well as some points to consider in clinical management.

© 2016 Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

1. Case background and diagnosis

A thirty four year old female, with no significant past medical history, who had undergone gastric bypass one and half year ago presented to the ED with excruciating diffuse abdominal pain. She reported a one hundred pound weight loss (change in BMI of 17.7, % Excess BMI lost of 60% and % Total Body Weight Loss of 43.4%). On day of admission, she presented to the emergency room in the afternoon with acute onset of severe generalized abdominal pain after her last meal earlier that morning. She endorsed nausea with no complaints of vomiting, constipation or diarrhea. Her abdominal pain was minimally responsive to dilaudid and morphine.

Patient underwent CT of the abdomen that showed ‘anastomosis to the jejunum and intussusception at the more distal jejunal anastomosis; no bowel obstruction is manifest [ed] at this time and no evidence of extravasation at either anastomosis’. Patient was taken emergently to the operating room for an exploratory laparotomy with the possibility of bowel resection.

2. Treatment

The procedure was intended to be started laparoscopically. However, upon placement of a nasogastric tube by the anesthesia team, there was a moderate amount of bleeding which raised higher suspicion for ischemic bowel. The operative approach at this point was switched from laparoscopic to open. Upon entering the peritoneal cavity a retrograde intussusception was found: the distal bowel had intussuscepted retrogradely into the jejunojejunostomy. The segment of bowel that had intussuscepted was almost 30–40 cm long. Additionally, there was a 20 cm segment of bowel that was found to be necrotic and nonviable (not showing any evidence of peristalsis) and was resected.

3. Outcome and follow up

The patient had an uncomplicated course. Her pain was well controlled initially with a hydromorphone PCA and later with IV morphine and IV tylenol. Foley catheter was removed on post-operative day 1 and nasogastric tube was removed on post-operative day 2. Her diet was advanced to clear liquids on post-operative day 2 and subsequently to regular foods on post-operative day 3 and she tolerated both well. Bowel function returned on post-operative day 3. She remained hemodynamically stable throughout the admission. She was discharged home on post-operative day 3. She was seen in the clinic 2 weeks later, had regular bowel movements and was tolerating a diet with no more episodes of bowel movements.

4. Discussion

Most cases of intussusception within adults are antegrade but Retrograde Intussusception (RI) is most commonly seen in patient status post Roux En Y gastric surgery [1]. One believed explanation may be related to small bowel motility disturbances [2,4]. Orad-and aborad-propagated migrating motor complexes were found in
the Roux limb of patients having undergone bariatric surgery which likely would be secondary to minimal phase 2 motor activity and also the failure of motility conversion to a ‘fed pattern’ after a liquid meal. Normally, small bowel motility is initiated within the duodenum, where the smooth muscle cells have the fastest frequency of the pacemaker potential. Intestinal motility is enhanced after a meal with contractions which mix digested food with enzymatic juices in an ab-orad direction. The most important factors determining this mechanism are the integrity of the vagal nerve, the presence of the duodenum as well as the type of ingested food [5,6]. When a patient undergoes Roux En Y, with transection of the jejunum to construct a Roux limb (bowel distal to the transection) the distal jejunum is separated from the duodenal pacemaker. This disruption causes a drop in the pacemaker potential in the Roux limb which subsequently creates ectopic pacemaker potentials to arise within the Roux limb. It is postulated that these ectopic pacemakers create potentials that migrate not just distally, but sometimes also in an oral direction, which can cause delaying emptying or stasis of the Roux limb. This hypothesis is considered to be the underlying phenomenon behind RI although the exact mechanism is still unknown. Another theory behind this type of intussusception is the anastomotic staple line acting as a lead point [6,7].

From a clinical standpoint, our operative approach was in line with suggested management as indicated within the limited publications in literature. All patient with a diagnosis of RI underwent surgical exploration [8]. Studies have shown that the management of RI involved either resection with revision of the jejeuno-jejunal anastomosis or simple resection with or without enterotomy. Additionally, all patients with either an obstructed or a nonreducible RI with ischemia underwent resection. Although our patient’s RI was reduced, there was a section of ischemic bowel that necessitated resection. Without presence of ischemic bowel, the decision to resect would have been a more challenging and not straightforward.

5. Limitations

Care was taken to ensure a comprehensive presentation of the case presentation. However, the study had a few limitations. Firstly, this was a single occurrence of such an acute complication within a large inner city hospital setting that required operative intervention. Future presentations could help determine the clinical application of an altered operative course and whether or not bowel resection, as performed in our patient, could be avoided. Secondly, our report presents the treatment of the patient in the short term – within the hospital setting as well as close clinical follow up – and doesn’t highlight patient observation for future visits. We, however, will continue to monitor the patient through outpatient visits into the future for any further complications.

6. Conclusion

As Roux-en-Y gastric bypass (RYGB) becomes a more widely in the management of obesity, it is important to understand possible complications that may present, especially in the long term period. RI is an uncommon, but potentially very serious, complication that requires expedient surgical management. Clinically, it can present with significant abdominal pain with or without symptoms of bowel occlusion and internal hernia should be included in the differential. While no operative method can guarantee the absence of recurrence, simple reduction with possible resection of bowel segment is the preferred route in non-ischemic intussusception [3].

State any conflicts of interest

None.

Sources of funding for your research

None.

Ethical approval

This case report was anonymized without any disclosure of identifying patient information. There was no indication for ethics approval.

Consent

All identifying information has been removed.

Author contribution

Ajay Kohli—case analysis, write up, peri-operative patient care.
Lily Gutnik—case analysis, peri-operative patient care.
Danielle Berman—case write up, peri-operative patient care.
Anil Narula—chief surgeon, peri-operative patient care, case analysis.

Guarantor

Author accepts full responsibility.

Acknowledgements

The authors of the paper would like to disclose that they had no financial interests, including activities, relationships, or any other affiliations. Furthermore, all authors of the study had full access to all the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

References

[1] Jian-Fang Li, Dan-Dan Lai, Zhi-Hong Lin, Tian-Ye Jiang, Ai-Min Zhang, Jian-Feng Dai, Comparison of the long-term results of Roux-en-Y gastric bypass and sleeve gastrectomy for morbid obesity, Surg. Laparosc. Endosc. Percutan. Tech. 24.1 (2014) 1–11 (Web).
[2] Oliver Varban, Ali Ardestani, Dan Azagury, David B. Lautz, Ashley H. Vernon, Malcolm K. Robinson, Ali Tavakkoli, Resection or reduction? The dilemma of managing retrograde intussusception after Roux-en-Y gastric bypass, Surg. Obes. Relat. Dis. 9.5 (2013) 725–730 (Web).
[3] Loic Daellenbach, Michel Suter, Jejunojejunial intussusception after Roux-en-Y gastric bypass: a review, Obes. Surg. 21.2 (2010) 253–263 (Web).
[4] M.P. Hocking, D.M. McCoy, S.B. Vogel, J.V. Kaude, C.A. Sninsky, Antiperistaltic and isoperistaltic intussusception associated with abnormal motility after Roux-en-Y gastric bypass: a case report. Surgery 110 (1991) 109–112.
[5] Baoiien Nguyen Tu, Keith A. Kelly, Motility disorders after Roux-en-Y gastrojejunostomy, Obes. Surg. 4.3 (1994) 219–226 (Web).
[6] K.B. Jones, Biliopancreatic limb obstruction in gastric bypass at or proximal to the jejunojejunalostomy: a potentially deadly, catastrophic event, Obes. Surg. 6 (1996) 485–490.
[7] L.H. Karlstrom, N.J. Soper, K.A. Kelly, S.F. Phillips, Ectopic jejunal pacemakers and enterogastric reflux after Roux gastroectomy: effect of intestinal pacing, Surgery 106 (1989) 486–495.
[8] S.C. Simper, J.M. Erzinger, R.D. McKinley, S.C. Smith, Retrograde (reverse) jejunal intussusception might not be such a rare problem: a single group’s experience of 23 cases, Surg. Obes. Relat. Dis. 4 (2008) 77–83.

Open Access

This article is published Open Access at sciedirect.com. It is distributed under the IJSCR Supplemental terms and conditions, which permits unrestricted non commercial use, distribution, and reproduction in any medium, provided the original authors and source are credited.