

World Journal of *Gastroenterology*

World J Gastroenterol 2017 October 7; 23(37): 6747-6922



EDITORIAL

- 6747 Microbial dysbiosis in spouses of ulcerative colitis patients: Any clues to disease pathogenesis?
Sorrentino D

REVIEW

- 6750 Road to stemness in hepatocellular carcinoma
Flores-Téllez TNJ, Villa-Treviño S, Piña-Vázquez C
- 6777 Intrahepatic vascular changes in non-alcoholic fatty liver disease: Potential role of insulin-resistance and endothelial dysfunction
Pasarín M, Abraldes JG, Liguori E, Kok B, La Mura V
- 6788 Epidemiological and clinical perspectives on irritable bowel syndrome in India, Bangladesh and Malaysia: A review
Rahman MM, Mahadeva S, Ghoshal UC

ORIGINAL ARTICLE

Basic Study

- 6802 Estrogen receptor expression in chronic hepatitis C and hepatocellular carcinoma pathogenesis
Iyer JK, Kalra M, Kaul A, Payton ME, Kaul R
- 6817 Glycosylation-related gene expression in HT29-MTX-E12 cells upon infection by *Helicobacter pylori*
Cairns MT, Gupta A, Naughton JA, Kane M, Clyne M, Joshi L
- 6833 STAT3 deficiency prevents hepatocarcinogenesis and promotes biliary proliferation in thioacetamide-induced liver injury
Abe M, Yoshida T, Akiba J, Ikezono Y, Wada F, Masuda A, Sakaue T, Tanaka T, Iwamoto H, Nakamura T, Sata M, Koga H, Yoshimura A, Torimura T
- 6845 Performance verification and comparison of TianLong automatic hypersensitive hepatitis B virus DNA quantification system with Roche CAP/CTM system
Li M, Chen L, Liu LM, Li YL, Li BA, Li B, Mao YL, Xia LF, Wang T, Liu YN, Li Z, Guo TS

Case Control Study

- 6854 Association of insertion-deletions polymorphisms with colorectal cancer risk and clinical features
Marques D, Ferreira-Costa LR, Ferreira-Costa LL, Correa RS, Borges AMP, Ito FR, Ramos CCO, Bortolin RH, Luchessi AD, Ribeiro-dos-Santos A, Santos S, Silbiger VN

Retrospective Cohort Study

- 6868** Hospital readmissions in decompensated cirrhotics: Factors pointing toward a prevention strategy
Seraj SM, Campbell EJ, Argyropoulos SK, Wegermann K, Chung RT, Richter JM

- 6877** Measurement of biological age may help to assess the risk of colorectal adenoma in screening colonoscopy
Kim SJ, Kim BJ, Kang H

Retrospective Study

- 6884** Prognostic factors of response to endoscopic treatment in painful chronic pancreatitis
Tantau A, Mandrutiu A, Leucuta DC, Ciobanu L, Tantau M

- 6894** *In vivo* histological diagnosis for gastric cancer using endocytoscopy
Tsurudome I, Miyahara R, Funasaka K, Furukawa K, Matsushita M, Yamamura T, Ishikawa T, Ohno E, Nakamura M, Kawashima H, Watanabe O, Nakaguro M, Satou A, Hirooka Y, Goto H

CASE REPORT

- 6902** Achalasia after bariatric Roux-en-Y gastric bypass surgery reversal
Abu Ghanimeh M, Qasrawi A, Abughanimeh O, Albadarin S, Clarkston W

- 6907** Persistent severe hypomagnesemia caused by proton pump inhibitor resolved after laparoscopic fundoplication
Semb S, Helgstrand F, Hjørne F, Bytzer P

- 6911** Rupture of small cystic pancreatic neuroendocrine tumor with many microtumors
Sagami R, Nishikiori H, Ikuyama S, Murakami K

LETTERS TO THE EDITOR

- 6920** Resistance of *Helicobacter pylori* to furazolidone and levofloxacin: A viewpoint
Zamani M, Rahbar A, Shokri-Shirvani J

ABOUT COVER

Editorial board member of *World Journal of Gastroenterology*, Toru Mizuguchi, MD, PhD, Associate Professor, Surgeon, Department of Surgery, Surgical Oncology and Science, Sapporo Medical University Hospital, Sapporo 060-8543, Hokkaido, Japan

AIMS AND SCOPE

World Journal of Gastroenterology (*World J Gastroenterol*, *WJG*, print ISSN 1007-9327, online ISSN 2219-2840, DOI: 10.3748) is a peer-reviewed open access journal. *WJG* was established on October 1, 1995. It is published weekly on the 7th, 14th, 21st, and 28th each month. The *WJG* Editorial Board consists of 1375 experts in gastroenterology and hepatology from 68 countries.

The primary task of *WJG* is to rapidly publish high-quality original articles, reviews, and commentaries in the fields of gastroenterology, hepatology, gastrointestinal endoscopy, gastrointestinal surgery, hepatobiliary surgery, gastrointestinal oncology, gastrointestinal radiation oncology, gastrointestinal imaging, gastrointestinal interventional therapy, gastrointestinal infectious diseases, gastrointestinal pharmacology, gastrointestinal pathophysiology, gastrointestinal pathology, evidence-based medicine in gastroenterology, pancreatology, gastrointestinal laboratory medicine, gastrointestinal molecular biology, gastrointestinal immunology, gastrointestinal microbiology, gastrointestinal genetics, gastrointestinal translational medicine, gastrointestinal diagnostics, and gastrointestinal therapeutics. *WJG* is dedicated to become an influential and prestigious journal in gastroenterology and hepatology, to promote the development of above disciplines, and to improve the diagnostic and therapeutic skill and expertise of clinicians.

INDEXING/ABSTRACTING

World Journal of Gastroenterology (*WJG*) is now indexed in Current Contents®/Clinical Medicine, Science Citation Index Expanded (also known as SciSearch®), Journal Citation Reports®, Index Medicus, MEDLINE, PubMed, PubMed Central and Directory of Open Access Journals. The 2017 edition of Journal Citation Reports® cites the 2016 impact factor for *WJG* as 3.365 (5-year impact factor: 3.176), ranking *WJG* as 29th among 79 journals in gastroenterology and hepatology (quartile in category Q2).

FLYLEAF

I-IX Editorial Board

EDITORS FOR THIS ISSUE

Responsible Assistant Editor: *Xiang Li*
Responsible Electronic Editor: *Yan Huang*
Proofing Editor-in-Chief: *Lian-Sheng Ma*
Responsible Science Editor: *Li-Juan Wei*
Proofing Editorial Office Director: *Jin-Lei Wang*

NAME OF JOURNAL
World Journal of Gastroenterology

ISSN
 ISSN 1007-9327 (print)
 ISSN 2219-2840 (online)

LAUNCH DATE
 October 1, 1995

FREQUENCY
 Weekly

EDITORS-IN-CHIEF
Damian Garcia-Olmo, MD, PhD, Doctor, Professor, Surgeon, Department of Surgery, Universidad Autonoma de Madrid; Department of General Surgery, Fundacion Jimenez Diaz University Hospital, Madrid 28040, Spain

Stephen C Strom, PhD, Professor, Department of Laboratory Medicine, Division of Pathology, Karolinska Institutet, Stockholm 141-86, Sweden

Andrzej S Tarnawski, MD, PhD, DSc (Med), Professor of Medicine, Chief Gastroenterology, VA Long Beach Health Care System, University of California, Irvine, CA, 5901 E. Seventh Str., Long Beach,

CA 90822, United States

EDITORIAL BOARD MEMBERS
 All editorial board members resources online at <http://www.wjgnet.com/1007-9327/editorialboard.htm>

EDITORIAL OFFICE
 Jin-Lei Wang, Director
 Yuan Qi, Vice Director
 Ze-Mao Gong, Vice Director
World Journal of Gastroenterology
 Baishideng Publishing Group Inc
 7901 Stoneridge Drive, Suite 501,
 Pleasanton, CA 94588, USA
 Telephone: +1-925-2238242
 Fax: +1-925-2238243
 E-mail: editorialoffice@wjgnet.com
 Help Desk: <http://www.f6publishing.com/helpdesk>
<http://www.wjgnet.com>

PUBLISHER
 Baishideng Publishing Group Inc
 7901 Stoneridge Drive, Suite 501,
 Pleasanton, CA 94588, USA
 Telephone: +1-925-2238242
 Fax: +1-925-2238243
 E-mail: bpgoffice@wjgnet.com
 Help Desk: <http://www.f6publishing.com/helpdesk>

<http://www.wjgnet.com>

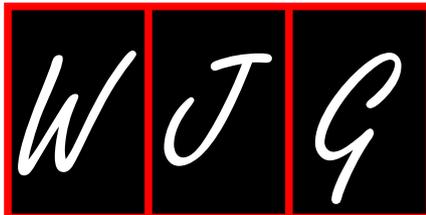
PUBLICATION DATE
 October 7, 2017

COPYRIGHT
 © 2017 Baishideng Publishing Group Inc. Articles published by this Open-Access journal are distributed under the terms of the Creative Commons Attribution Non-commercial License, which permits use, distribution, and reproduction in any medium, provided the original work is properly cited, the use is non commercial and is otherwise in compliance with the license.

SPECIAL STATEMENT
 All articles published in journals owned by the Baishideng Publishing Group (BPG) represent the views and opinions of their authors, and not the views, opinions or policies of the BPG, except where otherwise explicitly indicated.

INSTRUCTIONS TO AUTHORS
 Full instructions are available online at <http://www.wjgnet.com/bpg/gerinfo/204>

ONLINE SUBMISSION
<http://www.f6publishing.com>



Achalasia after bariatric Roux-en-Y gastric bypass surgery reversal

Mouhanna Abu Ghanimeh, Ayman Qasrawi, Omar Abughanimeh, Sakher Albadarin, Wendell Clarkston

Mouhanna Abu Ghanimeh, Division of Gastroenterology, Henry Ford Hospital, Detroit, MI 48202, United States

Ayman Qasrawi, Omar Abughanimeh, Wendell Clarkston, Department of Internal Medicine, University of Missouri-Kansas City, Kansas City, MO 64108, United States

Sakher Albadarin, Wendell Clarkston, Division of Gastroenterology, Saint Luke's Hospital of Kansas City, Kansas City, MO 64111, United States

Author contributions: All authors contributed to the manuscript; Abu Ghanimeh M, Qasrawi A and Abughanimeh O wrote the manuscript; Albadarin S edited the initial manuscript draft and provided the images; Clarkston W reviewed, edited and approved the final manuscript.

Institutional review board statement: This is a case report and IRB approval is not required.

Informed consent statement: The patient has provided permission to publish these features of his case, and the identity of the patient has been protected.

Conflict-of-interest statement: No conflict-of-interest.

Open-Access: This article is an open-access article which was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>

Manuscript source: Unsolicited manuscript

Correspondence to: Mouhanna Abu Ghanimeh, MD, Gastroenterology fellow, Henry Ford Health System, 2799 W Grand Blvd, Gastroenterology K-7 Room E-744, Detroit, MI 48202, United States. mabugh1@hfhs.org
Telephone: +1-816-328-4088

Fax: +1-313-9166413

Received: June 15, 2017

Peer-review started: June 16, 2017

First decision: July 13, 2017

Revised: August 4, 2017

Accepted: August 15, 2017

Article in press: August 15, 2017

Published online: October 7, 2017

Abstract

Achalasia is a rare esophageal motility disorder that is characterized by a loss of peristalsis in the distal esophagus and failure of lower esophageal sphincter relaxation. The risk of developing esophageal motility disorders, including achalasia, following bariatric surgery is controversial and differs based on the type of surgery. Most of the reported cases occurred with laparoscopic adjustable gastric banding. To our knowledge, there are only three reported cases of achalasia after Roux-en-Y gastric bypass and no reported cases after revision of the surgery. We present a case of a 70-year-old female who had a previous history of Roux-en-Y gastric bypass with revision. She presented with persistent nausea and regurgitation for one month. Esophagogastroduodenoscopy showed a dilated esophagus without strictures or stenosis. A barium study was performed after the endoscopy and was suggestive of achalasia. Those findings were confirmed by a manometry. The patient was referred for laparoscopic Heller's myotomy.

Key words: Esophagus; Bariatric; Gastric band; Bypass surgery; Achalasia; Esophagogastroduodenoscopy; Heller's myotomy; Motility disorder

© The Author(s) 2017. Published by Baishideng Publishing

Group Inc. All rights reserved.

Core tip: Achalasia is a rare esophageal motility disorder. It is uncommonly reported after bariatric surgeries. Achalasia is a very rare complication after Roux-en-Y gastric bypass. We report a case of a 70-year-old female who she presented with persistent nausea and regurgitation for one month. She had a previous history of Roux-en-Y gastric bypass with revision. As part of her inpatient evaluation, a computed tomography of the chest, a barium study and an upper endoscopy were suggestive of achalasia. Those findings were confirmed by a manometry. The patient was referred for laparoscopic Heller's myotomy.

Abu Ghanimeh M, Qasrawi A, Abughanimeh O, Albadarin S, Clarkston W. Achalasia after bariatric Roux-en-Y gastric bypass surgery reversal. *World J Gastroenterol* 2017; 23(37): 6902-6906 Available from: URL: <http://www.wjgnet.com/1007-9327/full/v23/i37/6902.htm> DOI: <http://dx.doi.org/10.3748/wjg.v23.i37.6902>

INTRODUCTION

Achalasia is a rare esophageal motility disorder characterized by loss of peristalsis in the distal esophagus and failure of lower esophageal sphincter (LES) relaxation^[1,2]. It usually presents with dysphagia for solids and liquids as well as regurgitation^[3]. Primary achalasia is an idiopathic disease with unknown etiology, whereas secondary achalasia or pseudoachalasia is associated with infections, paraneoplastic syndromes and extrinsic compression by benign or malignant processes^[4-6]. Interestingly, relationships have previously been reported between abnormalities in esophageal manometry, including achalasia, and both morbid obesity and bariatric surgery^[7-18]. Most of the reported cases of achalasia after bariatric surgery occurred after laparoscopic adjustable gastric banding (LAGB)^[11-14]. Achalasia after Roux-en-Y gastric bypass (RYGB) is rare^[15-18] and could be related to surgical trauma in the area^[15]. In these cases, it is important to rule out stenosis of the gastrojejunostomy.

CASE REPORT

A 70-year-old female with a past medical history of coronary artery disease and morbid obesity (previous body mass index (BMI) of 52 kg/m²) presented to our institution with persistent nausea and regurgitation for one month.

Her surgical history was significant for laparoscopic cholecystectomy and laparoscopic RYGB approximately two years prior to presentation. Her post-operative

course was complicated by a gastro-gastric fistula and gastro-jejunal anastomosis ulcer with gastrointestinal bleeding requiring admission to the hospital, blood transfusion and endoscopic hemostasis. Her surgery was revised approximately 2 mo prior to her presentation.

Her symptoms were mostly post-prandial. She also described mild dysphasia to both solids and liquids, so she started to drink in small sips. She denied any change in her weight or appetite, abdominal pain or change in bowel habits. Her vital signs were unremarkable. Her abdomen was soft, without tenderness to palpation and with bowel sounds present. The wound from her recent surgery was clean, with no evidence of discharge or poor healing.

Initial laboratory workup showed alanine aminotransferase (ALT) 33 unit/L (normal 13-69 unit/L), aspartate aminotransferase (AST) 35 unit/L (normal 15-46 unit/L) and alkaline phosphatase (ALP) 123 unit/L (normal 42-140 unit/L). A CT scan of the abdomen and pelvis with contrast (Figure 1) showed enteric contrast within the dilated distal esophagus and was suspicious for a mild stricture at gastroesophageal sphincter (GES). There was no evidence of peri-gastric inflammatory changes. Her stool workup was negative for *Clostridium difficile* toxin, ova and parasites. She was started on IV hydration, given IV ondansetron 4 mg every 6 h as needed for nausea and admitted for further evaluation.

The next day, esophagogastroduodenoscopy (EGD) showed large amounts of thick secretions in the esophagus. The esophagus was tortuous, dilated and had a "sigmoid esophagus" appearance, but no strictures, stenosis or evidence of malignancy were noted. A Barium study (Figure 2) was performed after the EGD and showed persistent narrowing of the gastroesophageal junction with a moderately dilated, debris-filled esophagus proximally and some tertiary esophageal contractions. These findings were suggestive of achalasia.

The patient was discharged with outpatient follow-up with a manometry study. The manometry was performed 2 wk later and revealed high pressure in the LES with abnormal relaxation and high resting pressure, in addition to aperistalsis. These results were consistent with type II achalasia (Figure 3). She was referred to surgery for evaluation and laparoscopic Heller's myotomy.

DISCUSSION

Achalasia is a rare esophageal motility disorder that is characterized by neurodegeneration, preferentially involving the inhibitory nitric oxide-producing neurons. It leads to a loss of peristalsis in the distal esophagus and failure of LES relaxation^[1,2]. It is derived from the

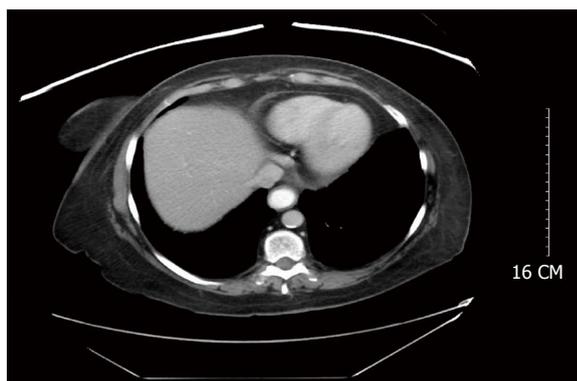


Figure 1 Computed tomography scan of the abdomen and pelvis with contrast showing enteric contrast within the dilated distal esophagus, and was suspicious for mild stricture at the gastroesophageal junction.

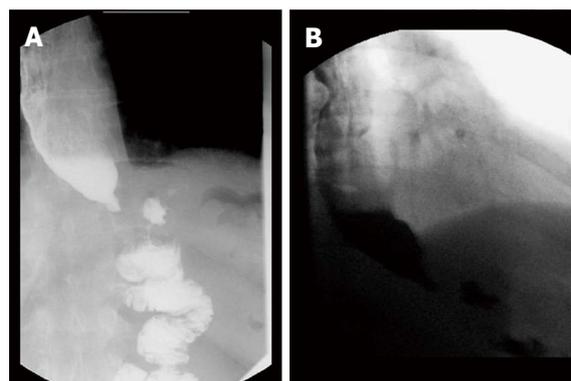


Figure 2 Barium study showing persistent narrowing of the gastroesophageal junction with a moderately dilated, debris filled esophagus proximally and some tertiary esophageal contractions.

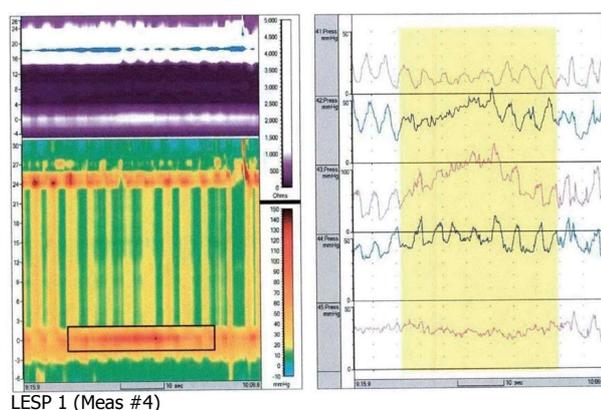


Figure 3 Esophageal manometry showing high lower esophageal sphincter pressure with abnormal relaxation and high resting pressure in addition to aperistalsis. These findings were consistent with type II achalasia.

Greek term meaning “does not relax”. Achalasia occurs equally in males and females, with an annual incidence of approximately 1.6 cases per 100000 individuals^[2].

Dysphagia for solids and liquids and regurgitation of undigested food or saliva are the most common symptoms in patients with achalasia^[3]. The etiology of primary achalasia is unknown, though autoimmune and viral infectious etiologies have been proposed^[4,5]. In its secondary form or pseudoachalasia, there are many potential causes of esophageal motor abnormalities that are similar or identical to those of primary achalasia. Examples include infections such as Chagas disease, paraneoplastic syndromes and extrinsic compression of gastroesophageal junction by either benign or malignant processes^[6].

Bariatric surgeries are among the fastest growing operative procedures worldwide^[19-21]. They are recommended for adults who have a BMI of at least 40 kg/m² or 35 kg/m² with other comorbidities^[21]. RYGP remains the most commonly performed bariatric

procedure in the United States^[19-21]. The risk of developing esophageal motility disorders, including achalasia, following bariatric surgery is still controversial and differs with the type of surgery^[11-14,16-18]. Pseudoachalasia after LAGB placement has been described, though there is evidence that the pseudoachalasia may be reversible after the band is removed^[11-14]. It has been postulated that malpositioning of the band near the gastroesophageal junction creates a high-pressure area, causing clinical symptoms of pseudoachalasia^[11-14].

In contrast, the development esophageal motility disorders after RYGB is rare and has only been reported a few times in the literature (Table 1)^[15-18]. To the best of our knowledge, there are only 3 reported cases of achalasia after RYGB^[16-18], and this is the first case described after revision of RYGB. Interestingly, several case reports have been published on the simultaneous treatment of achalasia and morbid obesity with laparoscopic esophageal myotomy and gastric bypass^[22-23]. The exact pathophysiology of motility disorders that develop after RYGB in general, and achalasia specifically, is unknown. Surgical trauma is one potential explanation. Shah *et al*^[15] described a retrospective study of 64 patients with achalasia compared with a control group of 73 patients without achalasia evaluated by manometry and endoscopy. A significant association was found between achalasia and trauma to the upper gastrointestinal tract. Of the patients with operative trauma and achalasia, 2 had undergone gastric bypass. Finally, it is worth mentioning that another important consideration in similar cases is to rule out stenosis of the gastrojejunostomy, which we did in our patient.

Achalasia is a rare esophageal motility disorder that is characterized by neurodegeneration, of the inhibitory nitric oxide-producing neurons. It usually manifests with dysphagia to both solid and liquids and regurgitation. Obesity is a global epidemic and

Table 1 Reported cases of achalasia after Roux-en-Y gastric bypass

Case	Age and gender	Pre-operative BMI (kg/m ²)	Procedure	Presentation	Onset of symptoms postoperative	Upper GI series/ Barium swallow	EGD	Esophageal manometry	Treatment
Ramos <i>et al</i> ^[16] 2009	44-yr-old female	47	Laparoscopic RYGB	Dysphagia to solids, and regurgitation	4 yr	Dilated esophagus, poor esophageal emptying, and tapering of the LES	Normal gastroesophageal junction, a 4-cm gastric pouch without lesions, and a wide gastrojejunostomy	Elevated resting LES pressure, aperistalsis, and hypo contractility of the esophagus.	Laparoscopic Heller myotomy
Torghabeh <i>et al</i> ^[17] 2015	48-yr-old female	44.75	Laparoscopic RYGB	Dysphagia to solid, regurgitation, and chest pain	5 yr	Dilated esophagus and stricture at the LES	Tortuous esophagus with retained food products and <i>Candida</i> plaques. Stricture was balloon dilated	Elevated resting LES pressure, aperistalsis, and failure of LES relaxation	Laparoscopic Heller myotomy
Chapman <i>et al</i> ^[18] 2013	53-yr-old female	NA	Open PYGB	Epigastric and LUQ pain and reflux symptoms	2 yr	Dilated thoracic esophagus with reduced primary peristalsis. Contrast was slow to pass through the gastro-esophageal junction	Dilated esophagus, esophagitis and ulceration above the gastro-esophageal junction	Absence of LES relaxation and aperistalsis	Laparoscopic Heller myotomy
Our case 2016	70-yr-old female	52	Laparoscopic RYGB	Regurgitation, mild dysphagia, nausea and occasional vomiting	2 yr	Persistent narrowing of the gastroesophageal junction with a dilated, debris filled esophagus. Some tertiary contractions	Dilated, tortuous esophagus that appeared as a "sigmoid esophagus" but no strictures or stenosis was noted.	Elevated LES pressure with abnormal relaxation in addition to aperistalsis and	Scheduled for laparoscopic Heller myotomy

LES: Lower esophageal sphincter.

can be associated with esophageal motility disorders. Esophageal motility disorders, including achalasia, occur as a consequence of bariatric surgeries.

COMMENTS

Case characteristics

Persistent nausea, regurgitation and mild dysphagia to solids and liquids for one month. History of RYGB 2 yr ago with reversal 2 mo prior to presentation.

Clinical diagnosis

Hemodynamically stable with normal vital signs. Abdomen was soft, without tenderness to palpation and with bowel sounds present. The wound from her recent surgery was clean, with no evidence of discharge or poor healing.

Differential diagnosis

Distal esophageal stricture, Stenosis of the gastrojejunostomy, achalasia, tumor of the gastric cardia or distal esophagus, infectious gastroenteritis.

Laboratory diagnosis

Initial complete blood count, basic metabolic panel (kidney function and

electrolytes) and liver panel were unremarkable. Stool workup was negative for infection.

Imaging diagnosis

A computed tomography scan of the chest with contrast showed enteric contrast within the dilated distal esophagus and was suspicious for a mild stricture at gastroesophageal sphincter. A Barium study was showed persistent narrowing of the gastroesophageal junction with a moderately dilated, debris-filled esophagus proximally and some tertiary esophageal contractions. Manometry was performed 2 wk after discharge and revealed high pressure in the lower esophageal sphincter (LES) with abnormal relaxation and high resting pressure, in addition to aperistalsis. These results were consistent with type II achalasia.

Endoscopic diagnosis

Esophagogastroduodenoscopy showed a tortuous and dilated esophagus with large amounts of thick secretions in the esophagus. No strictures, stenosis or evidence of malignancy were noted.

Treatment

Supportive treatment while inpatient with intravenous fluids and anti-emetics. She was referred for evaluation and laparoscopic Heller's myotomy after her

diagnosis.

Related reports

Table 1 summarize previous reported cases of achalasia in association with RYGB.

Term explanation

Achalasia is a rare esophageal motility disorder characterized by loss of peristalsis in the distal esophagus and failure of LES.

Experiences and lessons

Achalasia and other esophageal motility disorders may occur as a consequence of bariatric surgeries including RYGB.

Peer-review

A rare case report that achalasia after bariatric Roux-en-Y gastric bypass surgery was well described by the authors. Only 3 reported cases of achalasia after RYGB had been reported in the world, and this was the first case described after revision of RYGB. It's a worth case to be reported.

REFERENCES

- 1 **Pandolfino JE**, Kwiatek MA, Nealis T, Bulsiewicz W, Post J, Kahrilas PJ. Achalasia: a new clinically relevant classification by high-resolution manometry. *Gastroenterology* 2008; **135**: 1526-1533 [PMID: 18722376 DOI: 10.1053/j.gastro.2008.07.022]
- 2 **Sadowski DC**, Ackah F, Jiang B, Svenson LW. Achalasia: incidence, prevalence and survival. A population-based study. *Neurogastroenterol Motil* 2010; **22**: e256-e261 [PMID: 20465592 DOI: 10.1111/j.1365-2982.2010.01511.x]
- 3 **Fisichella PM**, Raz D, Palazzo F, Niponmick I, Patti MG. Clinical, radiological, and manometric profile in 145 patients with untreated achalasia. *World J Surg* 2008; **32**: 1974-1979 [PMID: 18575930 DOI: 10.1007/s00268-008-9656-z]
- 4 **Wong RK**, Maydonovitch CL, Metz SJ, Baker JR Jr. Significant DQw1 association in achalasia. *Dig Dis Sci* 1989; **34**: 349-352 [PMID: 2920639]
- 5 **Niwamoto H**, Okamoto E, Fujimoto J, Takeuchi M, Furuyama J, Yamamoto Y. Are human herpes viruses or measles virus associated with esophageal achalasia? *Dig Dis Sci* 1995; **40**: 859-864 [PMID: 7720482]
- 6 **Katzka DA**, Farrugia G, Arora AS. Achalasia secondary to neoplasia: a disease with a changing differential diagnosis. *Dis Esophagus* 2012; **25**: 331-336 [PMID: 21967574 DOI: 10.1111/j.1442-2050.2011.01266.x]
- 7 **Koppman JS**, Poggi L, Szomstein S, Ukleja A, Botoman A, Rosenthal R. Esophageal motility disorders in the morbidly obese population. *Surg Endosc* 2007; **21**: 761-764 [PMID: 17285388 DOI: 10.1007/s00464-006-9102-y]
- 8 **Hong D**, Khajanchee YS, Pereira N, Lockhart B, Patterson EJ, Swanson LL. Manometric abnormalities and gastroesophageal reflux disease in the morbidly obese. *Obes Surg* 2004; **14**: 744-749 [PMID: 15318976 DOI: 10.1381/0960892041590854]

- 9 **Jaffin BW**, Knoepfelmacher P, Greenstein R. High prevalence of asymptomatic esophageal motility disorders among morbidly obese patients. *Obes Surg* 1999; **9**: 390-395 [PMID: 10484299 DOI: 10.1381/096089299765552990]
- 10 **Herbella FA**, Matone J, Lourenço LG, Del Grande JC. Obesity and symptomatic achalasia. *Obes Surg* 2005; **15**: 713-715 [PMID: 15946467 DOI: 10.1381/0960892053923905]
- 11 **Cho M**, Kaidar-Person O, Szomstein S, Rosenthal RJ. Achalasia after vertical banded gastroplasty for morbid obesity: A case report. *Surg Laparosc Endosc Percutan Tech* 2006; **16**: 161-164 [PMID: 16804459]
- 12 **Rubenstein RB**. Laparoscopic adjustable gastric banding at a U.S. center with up to 3-year follow-up. *Obes Surg* 2002; **12**: 380-384 [PMID: 12082892]
- 13 **Khan A**, Ren-Fielding C, Traube M. Potentially reversible pseudoachalasia after laparoscopic adjustable gastric banding. *J Clin Gastroenterol* 2011; **45**: 775-779 [PMID: 21778895 DOI: 10.1097/MCG.0b013e318226ae14]
- 14 **Naef M**, Mouton WG, Naef U, van der Weg B, Maddern GJ, Wagner HE. Esophageal dysmotility disorders after laparoscopic gastric banding--an underestimated complication. *Ann Surg* 2011; **253**: 285-290 [PMID: 21169806 DOI: 10.1097/SLA.0b013e318206843e]
- 15 **Shah RN**, Izanec JL, Friedel DM, Axelrod P, Parkman HP, Fisher RS. Achalasia presenting after operative and nonoperative trauma. *Dig Dis Sci* 2004; **49**: 1818-1821 [PMID: 15628710]
- 16 **Ramos AC**, Murakami A, Lanzarini EG, Neto MG, Galvão M. Achalasia and laparoscopic gastric bypass. *Surg Obes Relat Dis* 2009; **5**: 132-134 [PMID: 18722821 DOI: 10.1016/j.soard.2008.05.004]
- 17 **Torghabeh MH**, Afaneh C, Saif T, Dakin GF. Achalasia 5 years following Roux-en-y gastric bypass. *J Minim Access Surg* 2015; **11**: 203-204 [PMID: 26195880 DOI: 10.4103/0972-9941.159854]
- 18 **Chapman R**, Rotundo A, Carter N, George J, Jenkinson A, Adamo M. Laparoscopic Heller's myotomy for achalasia after gastric bypass: A case report. *Int J Surg Case Rep* 2013; **4**: 396-398 [PMID: 23500742 DOI: 10.1016/j.ijscr.2013.01.014]
- 19 **American Society for Metabolic and Bariatric Surgery (2009) Fact Sheet**. Metabolic and Bariatric Surgery. Available from: URL: <https://asmbs.org/resources/metabolic-and-bariatric-surgery>
- 20 **Nguyen NT**, Masoomi H, Magno CP, Nguyen XM, Laugenour K, Lane J. Trends in use of bariatric surgery, 2003-2008. *J Am Coll Surg* 2011; **213**: 261-266 [PMID: 21624841 DOI: 10.1016/j.jamcollsurg.2011.04.030]
- 21 NIH conference. Gastrointestinal surgery for severe obesity. Consensus Development Conference Panel. *Ann Intern Med* 1991; **115**: 956-961 [PMID: 1952493]
- 22 **O'Rourke RW**, Jobe BA, Spight DH, Hunter JG. Simultaneous surgical management of achalasia and morbid obesity. *Obes Surg* 2007; **17**: 547-549 [PMID: 17608270 DOI: 10.1007/s11695-007-9095-1]
- 23 **Kaufman JA**, Pellegrini CA, Oelschlagel BK. Laparoscopic Heller myotomy and Roux-en-Y gastric bypass: a novel operation for the obese patient with achalasia. *J Laparoendosc Adv Surg Tech A* 2005; **15**: 391-395 [PMID: 16108743 DOI: 10.1089/lap.2005.15.391]

P- Reviewer: Altarabsheh SE, Wang BM, Garcia-Olmo D
S- Editor: Qi Y **L- Editor:** A **E- Editor:** Huang Y





Published by **Baishideng Publishing Group Inc**
7901 Stoneridge Drive, Suite 501, Pleasanton, CA 94588, USA
Telephone: +1-925-223-8242
Fax: +1-925-223-8243
E-mail: bpgoffice@wjgnet.com
Help Desk: <http://www.f6publishing.com/helpdesk>
<http://www.wjgnet.com>



ISSN 1007-9327

