Is Bypass the answer? Reflux and other functional gut issues after RYGB and OAGB

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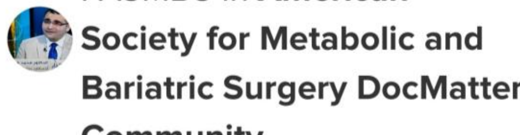
DocMatter

ASMBS in favor of OAGB?



Mohamad Elfawal, MD, FACS, FASMBS in **American Society for Metabolic and Bariatric Surgery DocMatter Community**

3,141 Discussion Views
4 Responses

Is it time we've had a statement from ASMBS in favor of OAGB given the recent IFSO Position Statement and the data we've seen from all over the world?

Respond

DocMatter

Shanu Kothari
Department of Surgery, Greenville Memorial Hospital

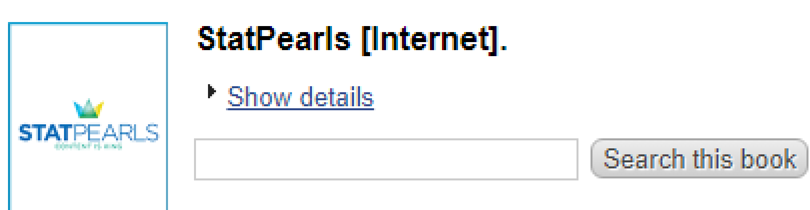
OAGB was just approved by the ASMBS as an endorsed procedure. We have a rigorous process in place including literature reviews, public comment period by our members, and input from the ECEC and EC. OAGB was recently put forth by a member for consideration and it passed. A formal statement will be sent to SOARD for publication soon.

Mohamad Elfawal
Beirut Arab University School of Medicine

Thanks Shanu and ASMBS for taking into consideration objectively the data coming on MGBOAGB. This recognition will allow more scientists from North America to publish their work on MGBOAGB and to get their data in terms of safety and efficacy.

Comment

- GERD (worsening or de novo)
- SIBO
- Anastomotic stricture
- Marginal Ulceration
- Gastro-Gastric Fistula (GGF)
- Cholelithiasis
- Choledocholithiasis
- Small Bowel Obstruction (SBO)
- Dumping Syndrome
- Nutritional Complications



Roux-en-Y Gastric Bypass Chronic Complications

Kevin Seeras; Robert J. Acho; Peter P. Lopez.

Author Information and Affiliations

Last Update: June 5, 2023.

https://www.ncbi.nlm.nih.gov/books/NBK519489/#:~:text=About%20one%2Dthird%20of%20patients,%2C%20bleeding%2C%20or%20chronic%20anemia.

Eric Steven Bour MD
Athens, GA

General Surgery

RYDGB patient with refractory GERD

60 y.o. male who I have seen in office for refractory GERD. The patient underwent VSG for morbid obesity several years ago at an outside hospital. His procedure was later converted to a RYDGB (by his original bariatric surgeon) for poor weight loss. He presented to me with weight regain and his major complaint of refractory GERD. EGD identified a small to moderate size proximal gastric pouch, widely patent gastrojejunostomy, normal afferent and efferent limbs of jejunum, and a 3 cm hiatal hernia. No evidence of gastro-gastric fistula was identified. Biopsies of the GE junction were negative for Barrett's. WATS brushings were also negative for Barrett's. A follow-up endoscopy was performed for BRAVO placement. Same anatomic findings. Bravo testing identified significant reflux with a DeMeester score of 36.9. Most reflux occured in the upright position and there was virtually no reflux when supine. The patient did not keep a diary and therefore there was no symptom correlation. WWYD???

Is this discussion valuable?
Yes (26) | No

Add Response | 39K Views | Add Bookmark | Recommend Contributor

16 Responses

Incidence of GERD post RYGB

- SM-BOSS study reported 6.3% of patients had worsening GERD symptoms post RYGB.
- This same study reported that 10.7% of patients had de-novo GERD symptoms post RYGB

JAMA | Original Investigation

Effect of Laparoscopic Sleeve Gastrectomy vs Laparoscopic Roux-en-Y Gastric Bypass on Weight Loss in Patients With Morbid Obesity
The SM-BOSS Randomized Clinical Trial

Ralph Peterli, MD; Bettina Karin Wölnerhanssen, MD; Thomas Peters, MD; Diana Vetter, MD; Dino Kröll, MD; Yves Borbély, MD; Bernd Schultes, MD; Christoph Beglinger, MD; Jürgen Drewe, MD, MSc; Marc Schiesser, MD; Philipp Nett, MD; Marco Bueter, MD, PhD

Possible contributing factors to GERD symptoms after RYGB

- Esophageal
  - Motility disorder
  - Eosinophilic esophagitis
  - Hypotensive LES/transient LES relaxation
  - Ectopic gastric mucosa
  - Esophageal hypersensitivity

Possible contributing factors to GERD symptoms after RYGB

- Hiatal hernia/disruption of GE junction gastric pouch
  - Size
  - Candy cane syndrome
  - Gastrogastric fistula
  - Acid pocket
  - Pouch stasis syndrome

Possible contributing factors to GERD symptoms after RYGB

- Alimentary limb
  - Length
  - Altered motility/Roux-en-Y stasis syndrome
  - Roux-en-O and other anatomic abberations
  - Obstruction (adhesion, hernia, stenosis at jejuno-jenunostomy)

Gastroenterology Report, 2023, 11, goad028

xxxhttps://doi.org/10.1093/gastro/goad028
Review Article

REVIEW ARTICLE

Turnkey algorithmic approach for the evaluation of gastroesophageal reflux disease after bariatric surgery

Omar M. Ghanem[1], Rabih Ghazi [2], Farah Abdul Razzak[2], Fateh Bazerbachi [3], Karthik Ravi[2], Leena Khaitan[4], Shanu N. Kothari[5] and Barham K. Abu Dayyeh[2,*]

[1]Department of Surgery, Mayo Clinic, Rochester, MN, USA, [2]Department of Medicine, Mayo Clinic, Rochester, MN, USA, [3]CentraCare, Interventional Endoscopy Program, St Cloud Hospital, St Cloud, MN, USA, [4]Department of Surgery, Case Western Reserve University, Cleveland, OH, USA; [5]Department of Surgery, Prisma Health, Greenville, SC, USA

Reflux after RYGB

Double contrast GI study

If GG fistula

Endoscopy or Surgery

If GG fistula

One-stop shop EGD/Bravo/EndoFLIP

Bile in pouch and short roux limb

Surgery (lengthening roux limb ± hiatal hernia repair ± pouch reduction

No bile in pouch and standard roux limb

EGD and/or Bravo: abnormal
EndoFLIP: normal

Anatomical abnormalities

Consider surgery (e.g. hiatal hernia repair, pouch reduction, remnant wrap)

No anatomical abnormalities

Consider Vagotomy

EGD and/or Bravo: abnormal
EndoFLIP: abnormal

Manometry

Normal

Consider Vagotomy

Abnormal

Motility clinic

Normal Manometry + Abnormal Anatomy

Consider surgery (e.g. hiatal hernia repair, pouch reduction, remnant wrap)

EGD + Bravo: normal
EndoFLIP: abnormal

Manometry

Abnormal

Motility Clinic

Normal

Typical Symptoms

Consider pH impedance

EGD/Bravo/EndoFLIP: normal

Typical Symptoms

Consider pH impedance

Abnormal

Consider CT enterography and HIDA scan

Normal

DDx: Hypersensitive esophagus or functional heartburn

Refer to behavioral therapy + nutritionist evaluation

Atypical Symptoms

DDx: Hypersensitive esophagus or functional heartburn

Refer to behavioral therapy + nutritionist evaluation

GERD after RYGB: evaluation step 1

Reflux after RYGB

Double contrast GI study

If GG fistula

Endoscopy or Surgery

If GG fistula

One-stop shop

EGD/Bravo/EndoFLIP

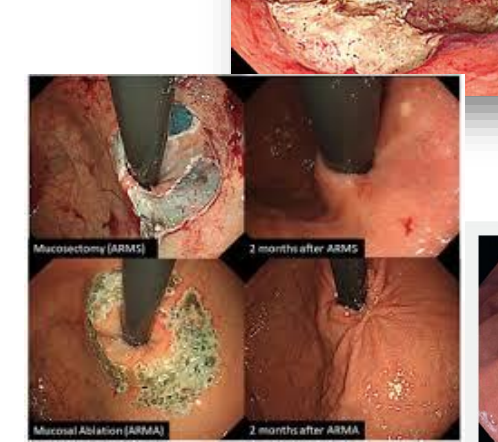
Bile in pouch and short roux limb

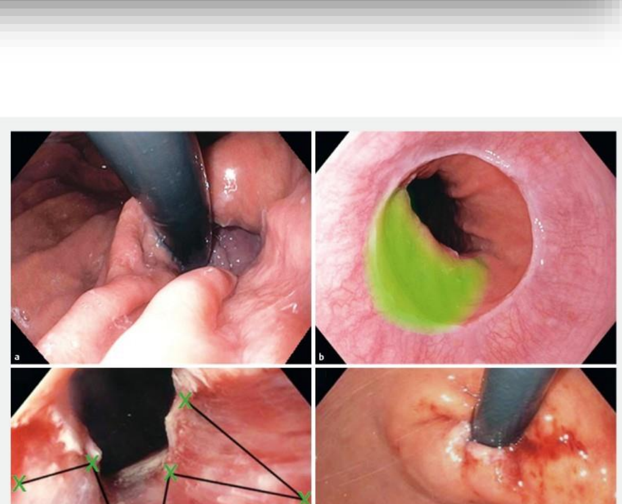
Surgery (lengthening roux limb ± hiatal hernia repair ± pouch reduction

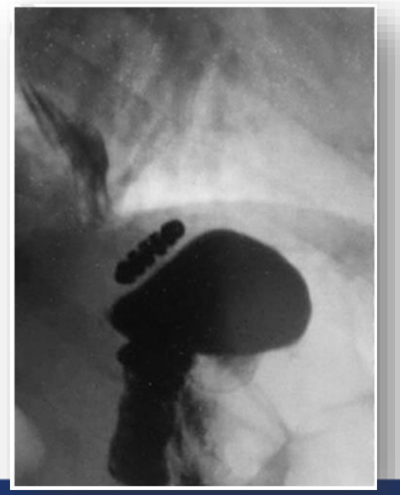
No bile in pouch and standard roux limb

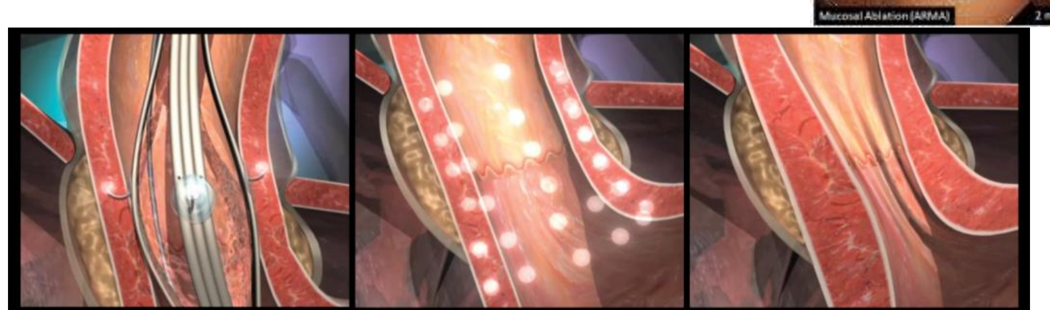
Other treatment options for GERD after RYGB

- ARMA
- STRETTA
- Antireflux mucosectomy
- LINX
- Resection and Plication (RAP)

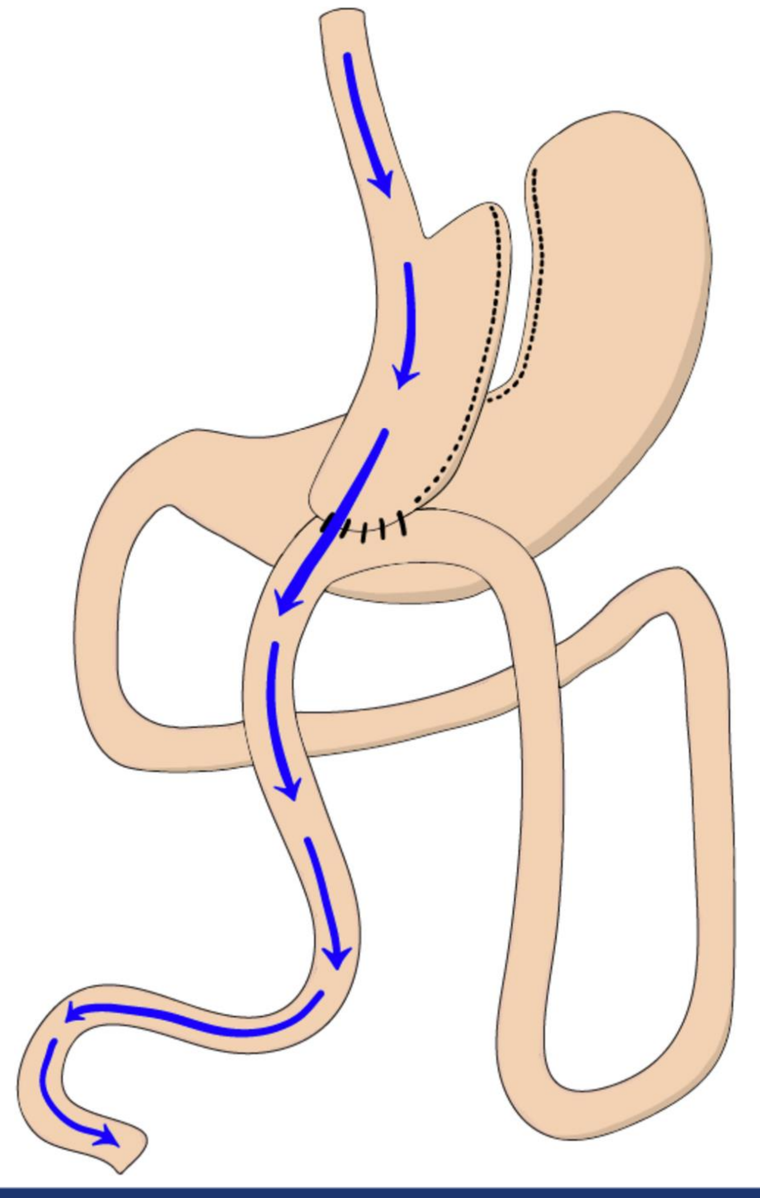








- GERD incidence post OAGB varies from 3-8%
- Distinguishment between reflux of bile into gastric pouch vs gastroesophageal reflux
- Bile scintigraphy post OAGB shows that transient bile reflux is common in the gastric tube, but not in the esophagus
- Prevention: creation of a narrow (3-4cm) and long (11-15cm) gastric pouch, latero-lateral gastrojejunal anastomosis, and antireflux sutures with afferent loop suspension
- In lower esophageal sphincter insufficiency, bile backflows in the esophagus and promotes GERD symptoms



Obesity Surgery (2022) 32:970–978
https://doi.org/10.1007/s11695-022-05892-6

ORIGINAL CONTRIBUTIONS

One-Anastomosis Gastric Bypass Revision for Gastroesophageal Reflux Disease: Long Versus Short Biliopancreatic Limb Roux-en-Y Gastric Bypass

Ahmad Tarhini[1,2] · Claire Rives-Lange[1,3] · Anne-Sophie Jannot[1,4] · Clement Baratte[1,2] · Nathan Beaupel[1] · Vincent Guillet[1,2] · Sylvia Krivan[5] · Maude Le Gall[1,6] · Claire Carette[1,3] · Sebastien Czernichow[1,3,7] · Jean-Marc Chevallier[1,2] · Tigran Poghosyan[1,2,6]

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GERD post OAGB

- 30.23% of patients with acid reflux,
- 11.64% with mixed reflux (acid and bile)
- 27.9% with pure bile (non-acid) reflux

Obesity Surgery (2021) 31:4717–4723
https://doi.org/10.1007/s11695-021-05542-3

ORIGINAL CONTRIBUTIONS

Acid Reflux Is Common in Patients With Gastroesophageal Reflux Disease After One-Anastomosis Gastric Bypass

William A Nehmeh[1,2] · Clement Baratte[1,2,3] · Claire Rives-Lange[1,4] · Chloe Martineau[1,5] · Hortense Boullenois[1,2] · Sylvia Krivan[6] · Vincent Guillet[1,2] · Maude Le Gall[1,3] · Christophe Cellier[1,5] · Claire Carette[1,3] · Sebastien Czernichow[1,4,7] · Jean-Marc Chevallier[1,2] · Tigran Poghosyan[1,2,3]

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Treatment of acid reflux

- Gastric pouch shortening and standard Roux-en-Y gastric bypass

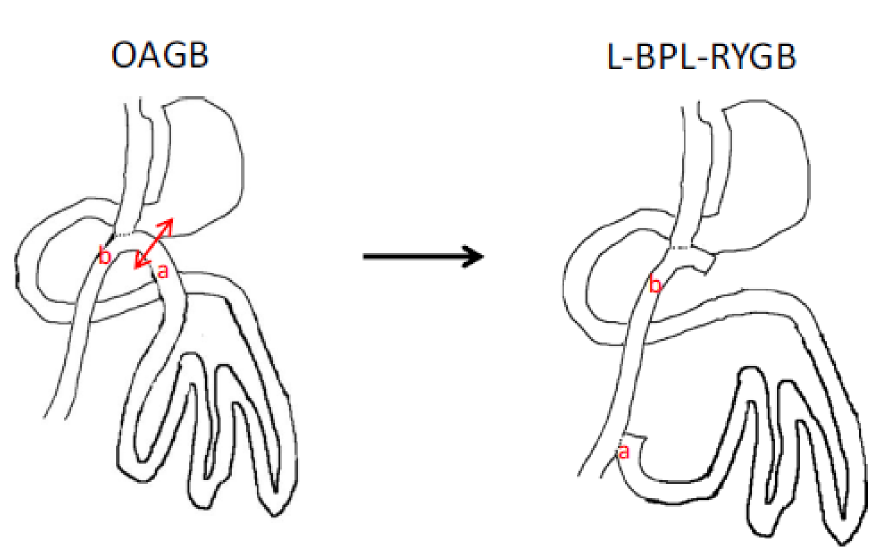


Fig. 1 OAGB conversion to long biliopancreatic limb RYGB

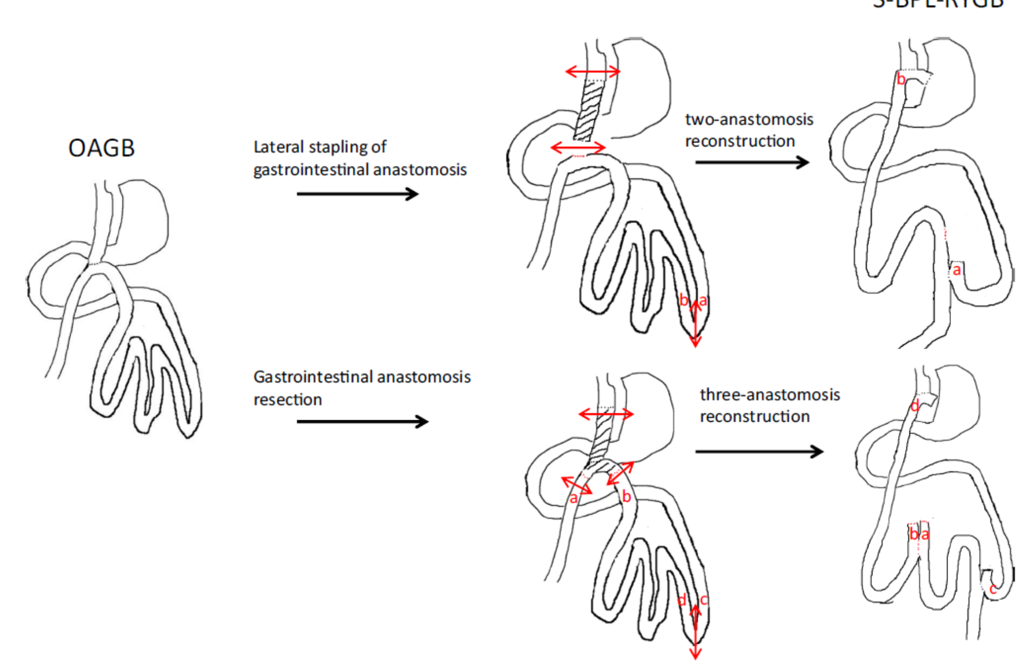


Fig. 2 OAGB conversion to short biliopancreatic limb RYGB

OBES SURG (2017) 27:2083–2089
DOI 10.1007/s11695-017-2608-7

ORIGINAL CONTRIBUTIONS

Bile Reflux Scintigraphy After Mini-Gastric Bypass

Tuure Saarinen[1,2] · Jari Räsänen[3] · Jarmo Salo[3] · Antti Loimaala[4] · Miia Pitkonen[4] · Marja Leivonen[5] · Anne Juuti[1]

XXVII IFSO World Congress

Melbourne 2024

Bile reflux following OAGB

- Nine patients underwent mini-gastric bypass
- Mean age at operation = 56, preoperative BMI = 43.1

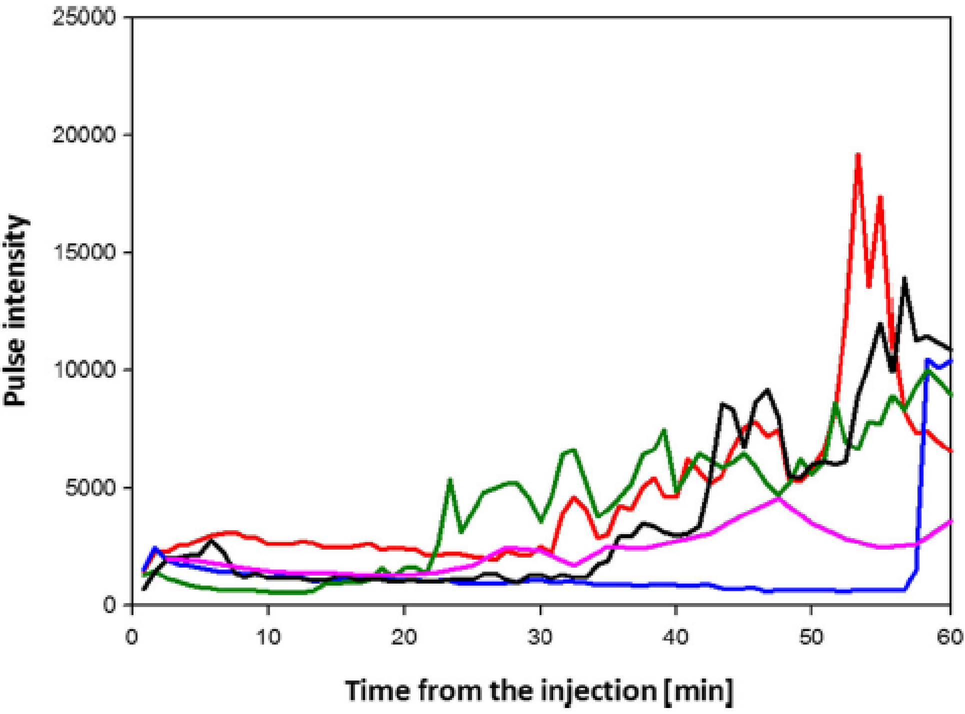
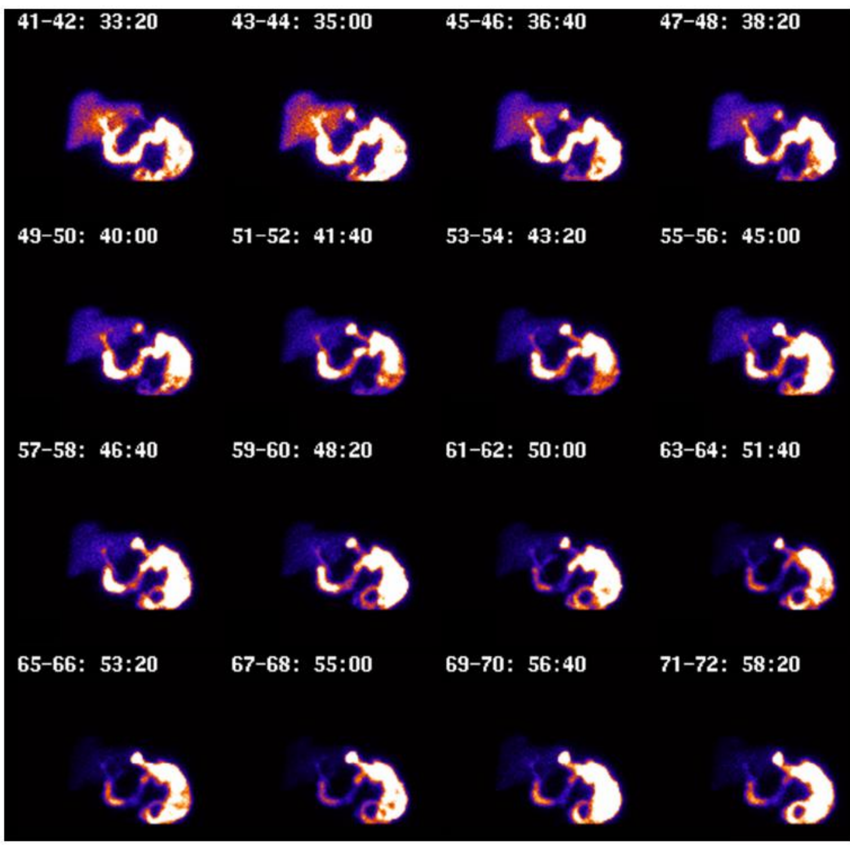


Fig. 1 Time-activity curves for five study subjects with bile tracer activity in the gastric tube during scintigraphy. Time from tracer injection is on *x*-axis and recorded tracer activity (pulse intensity) in the gastric tube on *y*-axis

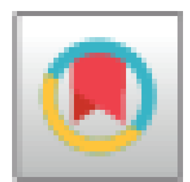
Fig. 2 Dynamic scan of one representative patient. Frame number is x-y followed by time from injection of bile tracer



Bile reflux following OAGB

- Hepatobiliary scintigraphy showed a transient bile reflux into the gastric tube for five patients (23-58 min after tracer injection and highest activity was 8% at 58 min.
- Bile tracer not in esophagus of any of these patients

Tu1902



EFFICACY OF EMPIRIC URSODIOL FOR THE TREATMENT OF CHRONIC ABDOMINAL PAIN IN ROUX-EN-Y GASTRIC BYPASS PATIENTS

Pichamol Jirapinyo*[1], Janese Laster[2], Hugo G. Guedes[3], Mohsen Hasanin[4], Christopher C. Thompson[1]

[1]*Brigham & Women's Hospital, Boston, MA;* [2]*Georgetown University Hospital, Washington;* [3]*Universidade de São Paulo, Sao Paulo, Brazil;* [4]*University of Louisville, Louisville, KY*

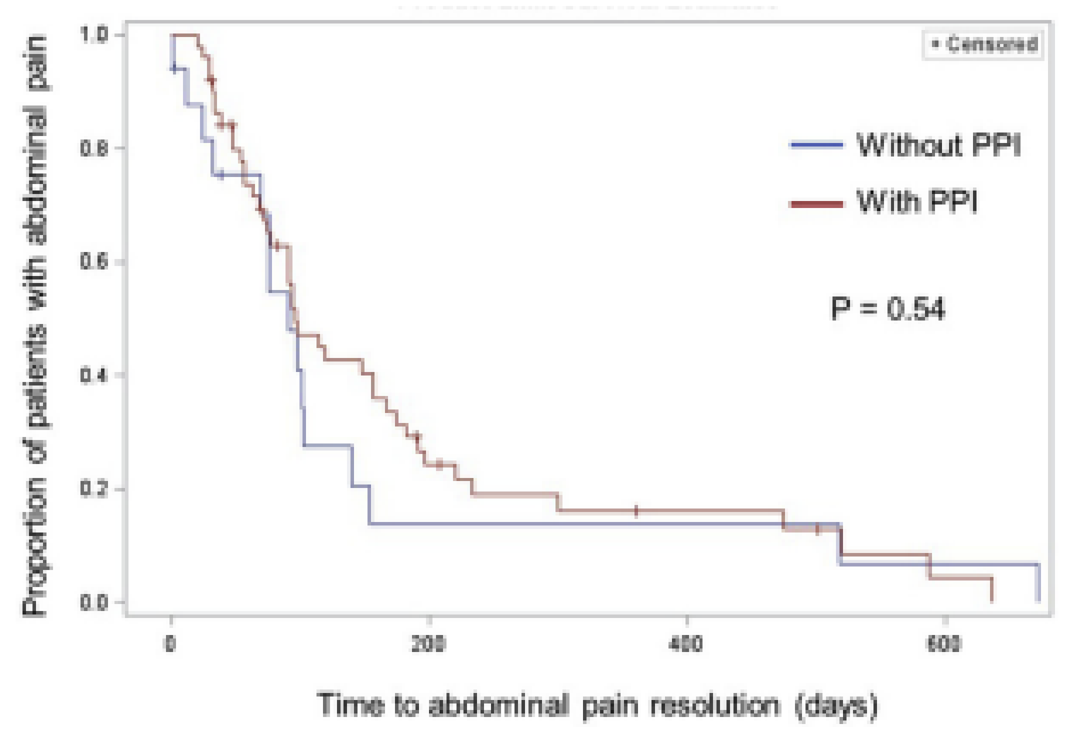
- Efficacy of empiric ursodiol treatment for remnant gastropathy following RYGB is unknown.

- Retrospective review of prospectively collected data of RYGB patients with chronic abdominal pain to
- (1)assess the efficacy of empiric ursodiol at treating remnant gastropathy in RYGB patients with abdominal pain and negative work-up
- (2)assess if concomitant PPI use with ursodiol is necessary

- 69 / 83 patients (83%) reported improvement of abdominal symptoms with 500mg ursodiol bid

- Clinical success (84% vs 89% for ursodiol + PPI vs ursodiol alone, p=0.55)

- Time to resolution of abdominal symptoms were similar between ursodiol and ursodiol + PPI (96 days vs 91 days for ursodiol + PPI vs ursodiol alone, p=0.54)



SIBO

Escherichia coli
Aeromonas
Klebsiella

- **Breath testing.** This type of noninvasive test measures the amount of hydrogen or methane that you breathe out after drinking a mixture of glucose and water. A rapid rise in exhaled hydrogen or methane may indicate bacterial overgrowth in your small intestine. Although widely available, breath testing is less specific than other types of tests for diagnosing bacterial overgrowth.
- **Small intestine aspirate and fluid culture.** This is currently the gold standard test for bacterial overgrowth. To obtain the fluid sample, doctors pass a long, flexible tube (endoscope) down your throat and through your upper digestive tract to your small intestine. A sample of intestinal fluid is withdrawn and then tested in a laboratory for the growth of bacteria.

SIBO

More than 1000 colony-forming units/mL in a jejunal aspirate culture.

SIBO

Metronidazole
Ciprofloxacin
Tetracycline
amoxicillin-clavulanate
Neomycin
rifaximin

TABLE 1. Oral antibiotic therapy for small intestinal bacterial overgrowth

SUGGESTED REGIMENS	ALTERNATIVE REGIMENS
Rifaximin 550mg three times per day for 7–14 days*	Amoxicillin-clavulanate 500mg 3 times per day or 875mg twice per day for 7–14 days
Neomycin 500mg twice daily plus rifaximin 550mg 3 times daily for 14 days**	Metronidazole 500mg three times per day plus cephalexin 500mg 3 or 4 times per day for 7-14 days Metronidazole 500mg 3 times per day plus trimethoprim-sulfamethoxazole double-strength twice per day for 7–14 days

*Recommended for hydrogen-predominant bacterial overgrowth
**Recommended for methane-predominant bacterial overgrowth

Small bowel bacterial overgrowth following laparoscopic one-anastomosis gastric bypass: a prospective study based on small bowel aspiration and culture

Michael M. Shenouda[a], Tamer M. Nabil[b], Sameh Mikhail[a], Ahmed Abdelsalam[a], Ayman Salah[a], George A.N. Aiad[a], Younan K. Ayoub[c], Mohamed Abeid[d], Nermine M. Riad[e], Arsany T.S. Wassef[a]

The Egyptian Journal of Surgery 2023, 41:1637–1642

SIBO following OAGB

- 40 patients planned for OAGB
- 6 months postop % total weight loss was 27.61%
- Jejunal aspirate culture revealed SIBO in 77.5% of patients
- High incidence of asymptomatic SIBO

Obesity Surgery (2022) 32:4102–4109
https://doi.org/10.1007/s11695-022-06299-z

NEW CONCEPT

Small Intestinal Bacterial Overgrowth in Patients with Roux-en-Y Gastric Bypass and One-Anastomosis Gastric Bypass

Urška Novljan[1] · Tadeja Pintar[1,2,3]

Received: 29 August 2022 / Revised: 22 September 2022 / Accepted: 28 September 2022 / Published online: 5 October 2022
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43%

oagb

rygb

Is Bypass the answer?

- RYGB and OAGB – most of the time

Is Bypass the answer? Reflux and other functional gut issues after RYGB and OAGB

Shanu N. Kothari, MD, FACS, FASMBS
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