



Late complications in MGB-OAGB

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Lusitadas
Saúde

II INTERNATIONAL MEETING

**Centro Multidisciplinar
da Doença Metabólica**

ONE ANASTOMOSIS GASTRIC BYPASS

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Late complications in MGB-OAGB

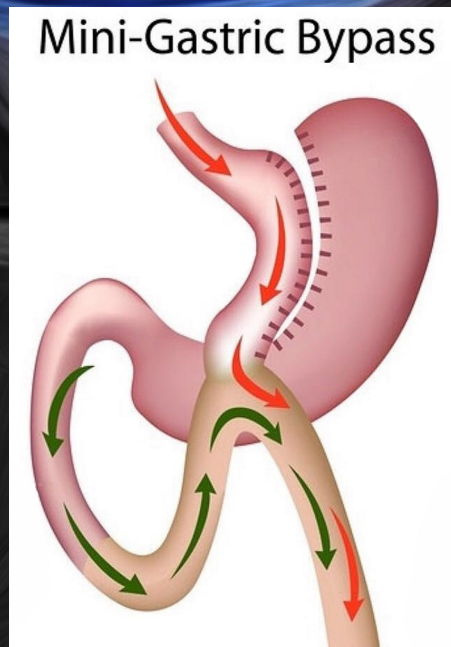
Chronic biliary reflux

Marginal ulcer

Malnutrition

Stenosis of GJ anastomosis
Small bowel obstruction

Cancer (?)



*Inventor of MGB
Robert Rutledge, 1997.*





Biliary reflux in Digestive System

ABCDDV/1332

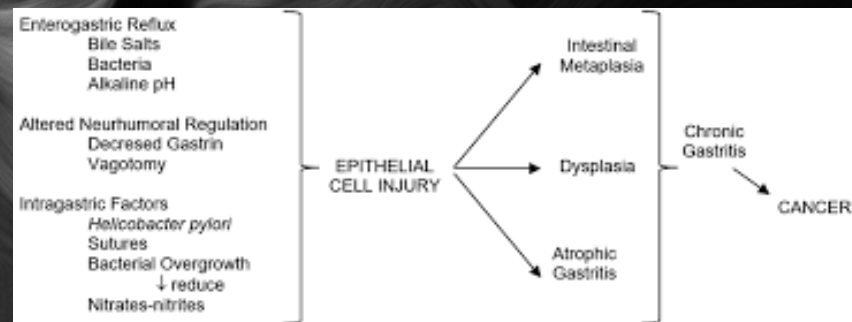
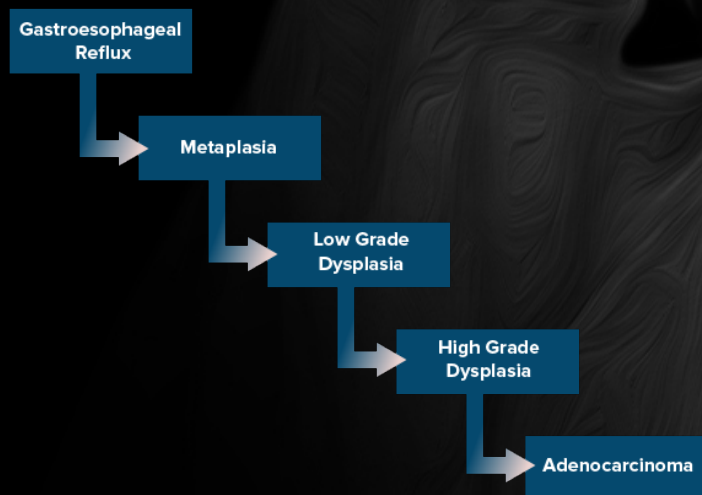
ABCD Arq Bras Cir Dig
2017;30(4):267-271
DOI: /10.1590/0102-6720201700040010

Review Article

SINGLE ANASTOMOSIS GASTRIC BYPASS (ONE ANASTOMOSIS GASTRIC BYPASS OR MINI GASTRIC BYPASS): THE EXPERIENCE WITH BILLROTH II MUST BE CONSIDERED AND IS A CHALLENGE FOR THE NEXT YEARS

Anastomose única no bypass gástrico (bypass gástrico com uma anastomose ou mini bypass gástrico): A experiência com Billroth II deve ser considerada e é um desafio para os próximos anos

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Chronic biliary reflux after MGB-OAGB

Esophagus no changes, *Chevallier, 2011.*

Criteria for biliary esophagitis after MGB: bilous vomiting, a bile in esophagus, *Kular 2014.*

GERD after MGB-OAGB 4% *Musella, 2017.*

Gastric tube „pouch gastritis“ 8% *Carabajo 2017.*

Definition of „intractable“ chronic biliary reflux is unclear

3% symptomatic, *Musella 2014.*

20% asymptomatic - **bilirubin in gastric aspirate** *Lasheen 2017.*



Chronic biliary reflux after MGB-OAGB

Diagnosis

Documented bile (UGI endoscopy) with GERD-like symptoms (bilious vomiting, regurgitation, nocturnal heartburn)

Biopsy of the esophagus and gastric pouch

Hepato-biliary scintigraphy

Esophageal pH monitoring (? Alkaline reflux)

24 hour pH impedance monitoring

Treatment

Prevention: proper technique - long stomach pouch 15 cm!

RYGBP

Braun procedure (?)



Marginal ulcer after MGB/OAGB

Buffering action (bile and gastric acid), mucosal ischemia, damage, ulceration.

0,6 – 14,3% No difference then after RYGB (0,6%-16%)

No difference in revisional surgery rates associated with MU.

0,5 % *Carabajo, 2017.*

Eradication of *Helicobacter pylori*, avoidance medications (*NSAID, steroids, anti-coagulants*), alcohol and tobacco.

9,4% *Wang, 2017.* Wide diameter of gastric tube

2,24% *Mahawar, 2017.* 622 MU between 27 672 MGB

MU lead to stenosis, bleeding, perforation



Marginal ulcer after MGB/OAGB

Prevention

*Narrow and long gastric tube + 3-5 cm GJA, NO anastomotic ischemia
cessation of smoking, av. medication, eradication Helicobacter pylori. 6
months prophylactic use of PPI.*

Upper Endoscopy surveillance in all MGB/OAGB pts.

Treatment

*Majority MU respond well to medical treatment and conservative
support.*

*Non-healing MU – RYGB (46,5%)
Suture of perforation + omentopl.
Resection of entire GJA – RYGB*

Updates Surg (2017) 69:421–424
DOI 10.1007/s13304-017-0435-y



TECHNICAL NOTE

**Emergency laparoscopic conversion from mini/one anastomosis
gastric bypass to modified Roux-en-Y-gastric bypass due to acute
bleeding from a recurrent marginal ulcer**

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Malnutrition after MGB/OAGB

Underestimated problem?

„revisional experience“ : 0,2% - 2,5%%

Chevallier, Rutledge, Carabajo, Noun, Alkhalifak, 2018.

„randomised experience“ : 21,4% Maud, 2019. (YOMEGA Trial, 200 cm BPL)

Diarrhea, steatorrhea, lower extremity edema, generalized weakness

Low hemoglobine level, iron deficiency

Low blood albumine level, pancytopenia,

Liver failure

Death

200 cm BPL, common intestinal channal 108 cm, *Motamedi, 2017*

250 cm BPL , *Ahuja, 2019*

BPL lenghtening - increase of weight loss, as well as vitamins and micronutriens and protein deficiencies.



Malnutrition after MGB/OAGB

The length of the small intestine varies greatly between individuals!

Prevention

Supplementation before MGB-OAGB (NAFLD, vitamin D def.)

Tailored bypass - individualized approach, 60% BLP, 40% AL) Ruiz –Tovar, Carabajo, 2019

Treatment

High protein diet (strict program of enteral supplementation)

Complete restoring of normal anatomy

Shortening BPL

Gastro-gastroplasty

Conversion in LSG

Liver transplantation



Cancer after MGB/OAGB

A Systematic Review of literature (Scozzari, 2012. and Musella 2019.) show that only few cases .

*1.Babor R, Booth M. Adenocarcinoma of the gastric pouch 26 years after loop gastric bypass. *Obes. Surg.* 2006 Jul;16(7):935-8.*

*2.Raijman I, Strother SV, Donegan WL. Gastric cancer after gastric bypass for obesity: case report. *Journal of Clinical Gastroenterology.* 1991;13(2):191–194.*

*3.Khitin L, Roses RE, Birkett DH. Cancer in the gastric remnant after gastric bypass: a case report. *Curr Surg.* 2003 Sep-Oct;60(5):521-3.*

*4.Lord RV, Edwards PD, Coleman MJ. Gastric cancer in the bypassed segment after operation for morbid obesity. *Aust N Z J Surg.*1997 Aug;67(8):580-2.*

*Wu CC, Lee WJ, Ser KH, Chen JC, Tsou JJ, Chen SC, Kuan WS. Gastric cancer after mini-gastric bypass surgery: a case report and literature review. *Asian J Endosc Surg.* 2013 Nov;6(4):303-6. doi: 10.1111/ases.12052.*



Cancer after MGB/OAGB

Only ONE cancer were reported after MGB-OAGB

Located in excluded stomach (not dependent of GJA)

No clearly data about infection od Helicobacter pylori.

High – risk geographic area for gastric cancer (Taiwan)





Conclusion

MGB-OAGB has a relative small number of late complication, but some of them could be of great importance regarding serious health damage, including death.

Despite of common surgical concerns, chronic bile reflux over one GJA are not cause of increased number of marginal ulcers, GERB, or even gastric or esophageal cancer.

Preparing a patient for MGB-OAGB procedure begins with treating of nutrition deficiencies, and after procedure, all patients must be followed with repited counsilations, medical prevention (PPI) and UGI endoscopy.

Proper surgical technique of MGB-OAGB is mandatory for preventing late complication.

The late MGB-OAGB complications very often needs a surgical corection by experienced team and surgeon.