Ronald Liem, Nederlandse Obesitas Kliniek (NOK)

# Ulcers after OAGB and RYGB: treatment algorithm

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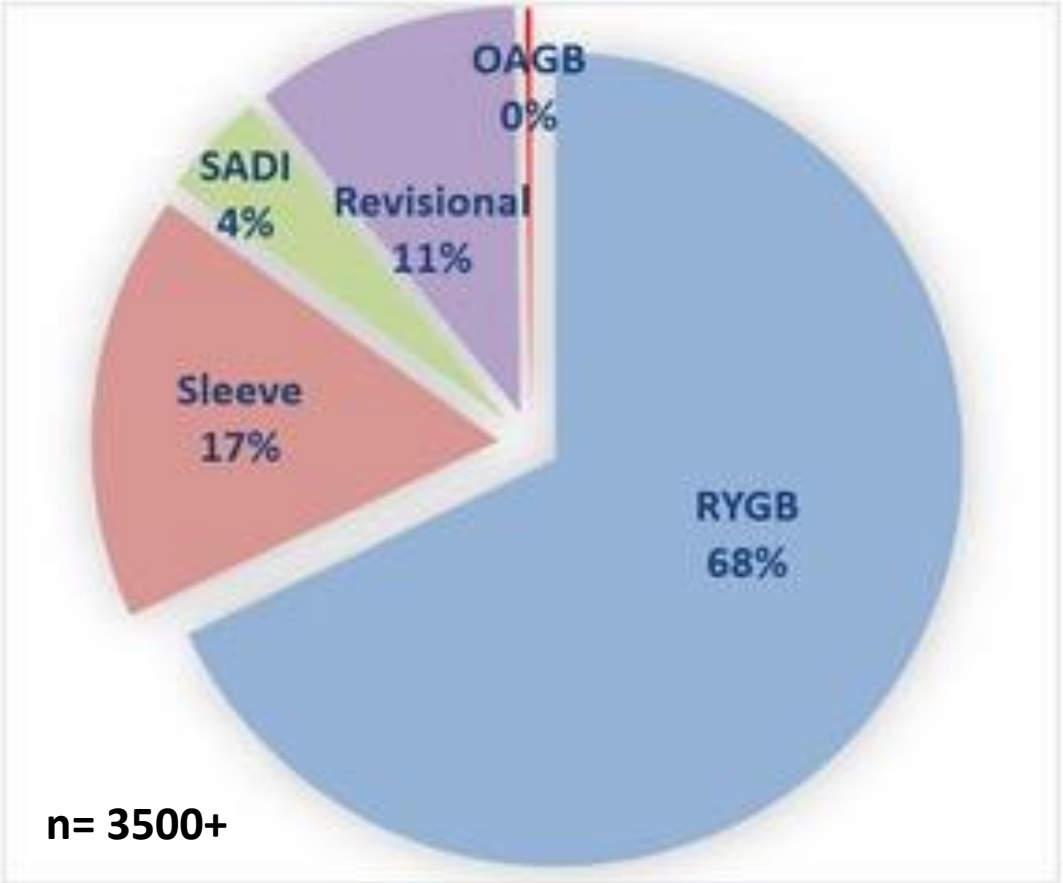
## CONFLICT OF INTEREST DISCLOSURE

**I have no potential conflict of interest to report for this presentation**

**Johnson and Johnson**
**Medtronic**
**Olympus**
**FitForMe**

NEDERLANDSE OBESITAS KLINIEK



# Ulcers after OAGB and RYGB: treatment algorithm

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Quit smoking
Rule out HP
PPI

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Is that all there is to it?

# Ulcers after OAGB and RYGB: treatment algorithm

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Journal of
*Clinical Medicine*

*Review*

## Marginal Ulcers after Roux-en-Y Gastric Bypass: Etiology, Diagnosis, and Management

**Marita Salame [1], Noura Jawhar [2], Amanda Belluzzi [1], Mohammad Al-Kordi [1], Andrew C. Storm [3], Barham K. Abu Dayyeh [3] and Omar M. Ghanem [1,*]**

# Ulcers after OAGB and RYGB: treatment algorithm

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## Introduction

- ✓ marginal ulcer (MU) typically occurs at or near the gastrojejunal anastomosis
- ✓ reported mean incidence rate 4.6% (2-19%)
- ✓ early MU (<30d) 0,3%*
- ✓ typically, MU develops 6–12 months after the surgery (>50%)
- ✓ several potential risk factors:

**Obes Surg* **2024**, Cornejo et al.

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- ✓ reported mean incidence rate 4.6% (2-19%)
- ✓ typically, MU develops 6–12 months after the surgery
- ✓ several potential risk factors:
  - smoking
  - diabetes
  - NSAIDs & steroids
  - Helicobacter pylori infection
  - alcohol consumption

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## Introduction

Symptoms may vary, with some patients being asymptomatic

- nausea/vomiting
- abdominal pain
- gastrointestinal (GI) bleeding
- ulcer perforation

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## Pathofysiology

- ✓ presence of highly acidic gastric secretions
- ✓ pt with MU: higher density of gastrin-producing G-cells retained in the gastric pouch*
- ✓ the jejunal mucosa, which lacks protective buffering mechanisms, is vulnerable to the effects of gastric secretions
- ✓ local activation of pepsin in the jejunal mucosa leads to the development of MU
- ✓ impaired tissue perfusion (cause local ischemia and chronic inflammation)

**Obes Surg* **2024**, Capaverde et al.

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## Anatomic and Surgery-Related Factors

- ✓ size of the gastric pouch
- ✓ non-absorbable suture material
- ✓ tension on the anastomosis
- ✓ circular stapled anastomosis result in higher rates of MU when compared to linear stapled anastomosis and hand sewn anastomosis

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## Helicobacter pylori

- ✓ potentially create a state of chronic inflammation with gastritis and metaplasia
- ✓ urea breath tests may yield false negative results
- ✓ serology has limited diagnostic value
- ✓ stool antigen tests have a sensitivity and specificity of over 90%, making them the most suitable non-invasive diagnostic tool (caveat: PPI use)
- ✓ histological samples, however, remain the gold standard for accurate detection

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## Diagnosis

- ✓ upper endoscopy (+biopsies)
- ✓ GI series may be used as an additional diagnostic tool
- ✓ CT scan

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# Management

- ✓ Medical therapie:
  - ✓ stop non-surgical risk factors: smoking, NSAIDs and alcohol
  - ✓ acid-reducing medications: PPIs, H2 blockers, and sucralfate
  - ✓ step-down treatment approach
  - ✓ open capsule PPI approach significantly reduced ulcer healing times*

**SOARD* **2024**, Yoo et al.

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- ✓ Endoscopic Therapy
  - ✓ minimally invasive step-up therapies (suturing and stenting)
  - ✓ non-perforated MUs
  - ✓ MU bleeding: coagulation and endoscopic clips

*Obes. Surg.* **2018**, Barola

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## Surgery

- ✓ for MU refractory to medical treatment or recurring cases despite initial successful treatment (caveat: bleeding, perforation, intractability, or stricture)
- ✓ associated gastrogastric fistulas (retrograde reflux)
- ✓ various surgical approaches aim to correct different contributing factors, such as reducing acid production and correcting mucosal disruption, ischemia, and gastric pouch acidity:

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  - ✓ GJ revision
  - ✓ truncal vagotomy

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  - ✓ GJ revision
  - ✓ truncal vagotomy
  - ✓ esophagojejunostomy
  - ✓ (RYGB reversal and conversion to sleeve)

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## Complicated Ulcers

- ✓ Perforation
  - ✓ surgical approach focuses on addressing the perforation itself, followed by medical therapy, risk factor optimization (smoking cessation, discontinuation of NSAIDs, H. Pylori eradication, etc.) and endoscopic surveillance

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  - ✓ closure (with an omental patch)
  - ✓ anastomotic revision

*J Gastrointest Surg* **2023**, Crawford et al.

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  - ✓ closure (with an omental patch)
  - ✓ anastomotic revision
  - ✓ endoscopic management may be a viable option for a contained perforation before resorting to surgery

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# Complicated Ulcers

- ✓ Strictures
  - ✓ persistent or worsening postprandial vomiting, dysphagia, and abdominal pain
  - ✓ endoscopic dilation; presence of an ulcer at the stricture site might predispose the area for perforation during dilation
  - ✓ lumen-apposing metal stent
  - ✓ anastomotic revision

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## Recurrent MU

- ✓ incidence up to 16%*
- ✓ evaluated for other causes of ulceration (Zollinger–Ellison syndrome)
- ✓ re-revision of the GJ (+truncal vagotomy)
- ✓ reversal of the bypass to normal anatomy
- ✓ resection of the pouch and esophagojejunostomy

**Am Surg* **2023**, Pina et al.

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## Recurrent MU

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- ✓ evaluated for other causes of ulceration (Zollinger–Ellison syndrome)
- ✓ re-revision of the GJ
- ✓ reversal of the bypass to normal anatomy
- ✓ resection of the pouch and esophagojejunostomy
- ✓ endoscopic coverage of the ulcer bed by either endoscopic suturing or stent deployment may be a feasible alternative for high-risk patients, after previous revision or patients who would otherwise require an esophagojejunostomy

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# MU after OAGB

- ✓ incidence of MU after OAGB is around 2-4% but varies between reports

- ✓ surgical repair when perforated:
  - ✓ omental patch with or without primary repair
  - ✓ conversion to RYGB with resection of the distal gastric pouch and perforated segment
  - ✓ Reversal of the OAGB back to the “normal” anatomy, i.e., division of the gastrojejunostomy, maintaining small bowel continuity and gastrogastrostomy between the pouch and remnant

*SOARD* **2021**, Aviran et al.
*Obes Surg* **2023**, Lee et al.
*J Clin Med* **2024**, Abu-Abeid et al.

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## Other ulcers after RYGB and OAGB

- ✓ gastric remnant ulcers
  - ✓ attributable to HP infection, NSAID use, excessive alcohol consumption, acidic gastric environment and bile reflux
- ✓ duodenal ulcers
- ✓ jejunal ulcers

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**Thank you for your attention**

**Any questions?**


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