Right Thoracoscopic (VATS) Truncal Vagotomy for Intractable Marginal Ulcer

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Background

- Rising bariatric surgery rates
  - 158,000 in 2011 and 256,000 in 2019

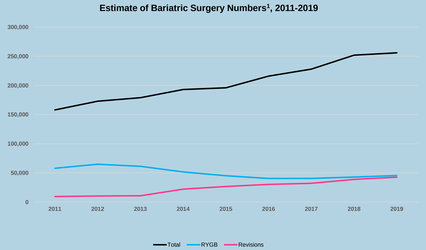


Figure 1.1: Estimated Bariatric Surgeries in USA[1]

- 256,000 Bariatric surgeries in 2019
  - Laparoscopic Roux-en-Y Gastric Bypass **17.8%** (LRYGB)
  - Revisions **16.7%**

- Complications of LRYBG[2]
  - Leaks
  - Stomal Stenosis
  - **Marginal Ulcer (MU) 16%**
  - Gastrogastric Fistula
  - Anastomotic Stenosis

- **Marginal Ulcer**
  - **Risk Factors**: Ischemia, NSAIDs Smoking, Alcohol, Pouch Size, *H.Pylori*, Surgical Sutures/Technique, DM, HTN
  - **Treatment**
    - **Non-surgical** – up to 95% heal with medical management
      - Untreated MU –Risk of perforation & bleeding
      - Multiple admissions, poor QOL
    - **Surgical**
      - Revisional Surgery (36% success rate[3])
      - Bypass Reversal
      - Vagotomy

Case Report

2004

- **34 F BMI: 57 kg/M2** (super morbid obesity)
- Comorbidities: Diabetes Mellitus Type 2, Hypertension

Treatment: **Laparoscopic RYGB**

2012

- C/O: epigastric pain, food intolerance

No smoking, NSAID use
- CT abdomen = insignificant
- Endoscopy = **large marginal ulcer**

Treatment: 20 mg Omeprazole OD

2016

- C/O : epigastric pain, nausea, vomiting and food intolerance
  - CT Abdomen = Fluid near GJ-anastomoses, possible contained perforation
  - *H.Pylori* negative

Treatment:
- 40 mg Omeprazole BID, Sucralfate
- **Laparoscopic Excision of Ulcer & GJ Revision**

2019

- C/O : epigastric pain, nausea, vomiting, fluid and food intolerance
  - Endoscopy = **recurrent MU, just distal to GJ junction**

Treatment: 80mg Omeprazole BID, Sucralfate

2021

- **BMI: 31.7 kg/M2**
- C/O : epigastric pain (8/10), nausea, vomiting, fluid and food intolerance
  - CT abdomen IV Contrast = non-contributory
  - **Endoscopy = 8 mm MU (Figure 1.2)**

❖ **MU refractory to medical management & surgical revision**

Treatment continued with maximal medical management

- Surgical Treatment Options:
  - Bypass Reversal
  - **Truncal Vagotomy**

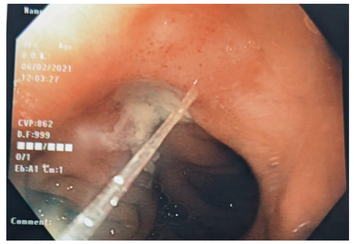


Figure 1.2: Non-healing Marginal Ulcer 2021

Management: Truncal Vagotomy

Truncal Vagotomy

- **Primary Goal:**
  - Decrease acid secretion of the parietal cells in the fundus by disrupting the nerve innervation
  - **2021: Minimally invasive right video-assisted transthoracic surgery (VATs)**

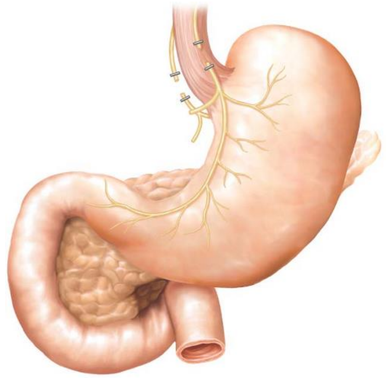


Figure 1.3: Thoracoscopic Truncal Vagotomy [4]

- Division of the anterior & posterior trunk of vagus nerve
  - → Denervated approximately 4cm proximal to the gastroesophageal junction
  - → Pathology results confirm specimen as a portion of nerve fiber.
- Procedure tolerated, no complications

Management: Truncal Vagotomy

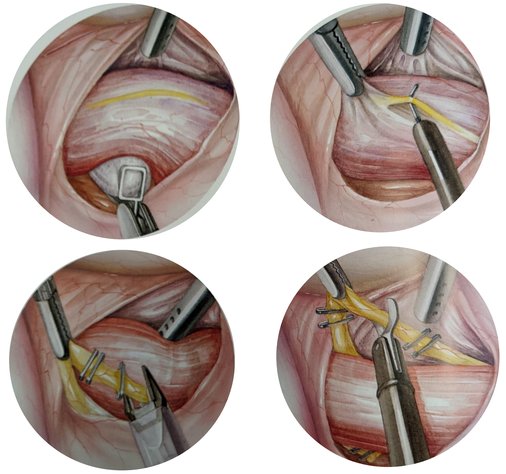


Figure 1.4: Truncal Vagotomy Exposure of distal esophagus, followed by separation and transection of individual nerve plexuses. Posterior trunk exposed and clipped, 1cm resection sent for frozen section. Anterior vagal trunk lifted, clipped and resected, 1 cm sent for frozen section.[5]

Outcomes of VATS for Truncal Vagotomy

Discharge POD# 2
- Continues medical management with maximal medical therapy
  - ➢ 80mg Omeprazole BID, Sucralfate

Follow-up – POD #21
- Recovering well
- No nausea or pain, taking PO well

Follow-up – POD #56
- No pain, ,fever taking PO well
- **EGD demonstrates well-healed MU (Figure 1.5)**

Results

8 weeks post-operatively EGD imaging reveals completely healed marginal ulcer. Patient remains asymptomatic and stable.

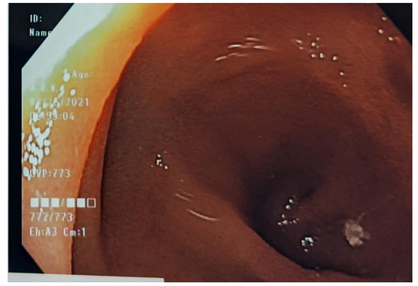


Figure 1.5: EGD Results 8 weeks post-operatively, status post VATS for truncal vagotomy.

Summary

Transthoracic Truncal Vagotomy is a viable surgical option for patients with non-healing MU post-LRYGB refractory to maximal medical management and revisional surgery.

Conclusion

- LRYGB rates increasing due to rising obesity epidemic
- MU is a troublesome and challenging complication
- Conservative management is generally successful
- No well established management protocol for MU refractory to medical management and revisional surgery
- Truncal vagotomy is a viable surgical option for refractory cases

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