

**Physiologic, Endoscopic and Perioperative  
Outcomes of Laparoscopic Conversion of Sleeve  
Gastrectomy to Gastric Bypass due to GERD**

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# Disclosure slide

- No disclosures

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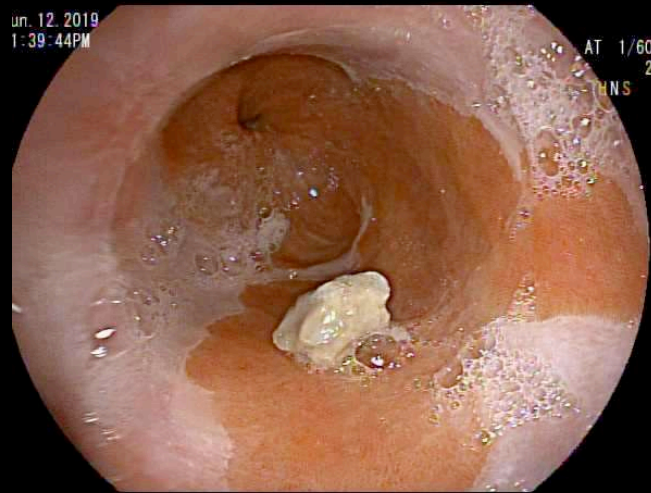
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# Lap Conversion of Sleeve to RYGB due to GERD

- GERD symptoms in about 35% after LSG
- De Novo Esophagitis any Grade reported in 25%
- De Novo Barrett's Esophagus reported in 10%



- Lap Conversion to RYGB option recalcitrant symptoms

# Lap Conversion of Sleeve to RYGB due to GERD

Langenbeck's Archives of Surgery (2018) 403:473–479  
https://doi.org/10.1007/s00423-018-1675-0

ORIGINAL ARTICLE

**Italy** 

**Short-term outcomes of sleeve gastrectomy conversion to R-Y gastric bypass: multi-center retrospective study**

Cristian Eugeniu Boru<sup>1</sup> · Francesco Greco<sup>2</sup> · Piero Giustacchini<sup>3</sup> · Marco Raffaelli<sup>3</sup> · Gianfranco Silecchia<sup>1</sup>

OBES SURG (2017) 27:1651–1658  
DOI 10.1007/s11695-017-2542-8

ORIGINAL CONTRIBUTIONS

**UK**

**Conversion of Sleeve Gastrectomy to Roux-en-Y Gastric Bypass is Effective for Gastro-Oesophageal Reflux Disease but not for Further Weight Loss**

Chetan D Parmar<sup>1</sup> · Kamal K Mahawar<sup>1</sup> · Maureen Boyle<sup>1</sup> · Norbert Schroeder<sup>1</sup> · Shlok Balupuri<sup>1</sup> · Peter K Small<sup>1</sup>

Obesity Surgery  
https://doi.org/10.1007/s11695-021-05444-4



ORIGINAL CONTRIBUTIONS

**France** 

**Indications and Long-Term Outcomes of Conversion of Sleeve Gastrectomy to Roux-en-Y Gastric Bypass**

Antonio D'Urso<sup>1</sup>  · Michel Vix<sup>1</sup> · Silvana Perretta<sup>1</sup> · Mihaela Ignat<sup>1</sup> · Louise Scheer<sup>1</sup> · Didier Mutter<sup>1</sup>

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Original article **France(7)/Italy(1)**

**Conversion of sleeve gastrectomy to Roux-en-Y gastric bypass in patients with gastroesophageal reflux disease: results of a multicenter study**

Sergio Carandina, M.D.<sup>a,b,\*</sup>, Antoine Soprani, M.D.<sup>c</sup>, Laura Montana, M.D.<sup>d</sup>, Sebastien Murcia, M.D.<sup>e</sup>, Antonio Valenti, M.D.<sup>f</sup>, Marc Danan, M.D.<sup>a</sup>, Jacopo d'Agostino, M.D.<sup>g</sup>, Emmanuel Rivkine, M.D.<sup>h</sup>, Marius Nedelcu, M.D.<sup>a</sup>

<sup>a</sup>ELSAN, Clinique Saint Michel, Centre Chirurgical de l'Obésité (CCO), Toulon, France

**15 patients with GERD  
83% Resolved**

**10 patients with GERD  
100% Resolved**

**25 patients with GERD  
100% Resolved**

**80 patients with GERD  
70% Resolved**

Obesity Surgery (2020) 30:1273–1279  
https://doi.org/10.1007/s11695-019-04292-7

ORIGINAL CONTRIBUTIONS

**Austria** 

**Roux-en-Y Gastric Bypass as a Treatment for Barrett's Esophagus after Sleeve Gastrectomy**

Daniel M. Felsenreich<sup>1</sup> · Felix B. Langer<sup>1</sup> · Christoph Bichler<sup>1</sup> · Magdalena Eilenberg<sup>1</sup> · Julia Jedamzik<sup>1</sup> · Ivan Kristo<sup>1</sup> · Natalie Vock<sup>1</sup> · Lisa Gensthaler<sup>1</sup> · Charlotte Rabl<sup>2</sup> · Alexander Todoroff<sup>3</sup> · Gerhard Prager<sup>1</sup> 

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**10 patients with GERD/BE  
100% Resolved**

# Aims

- To evaluate the effectiveness, perioperative and weight loss outcomes of laparoscopic conversion of LSG to RYGB due to GERD.

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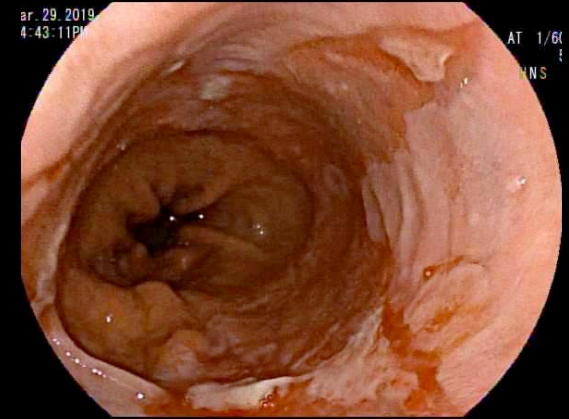
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# Methods

- Retrospective review of all consecutive patients converted from LSG to RYGB due to GERD.
- Proposed evaluation:
  - GERD Symptom
  - UGI Endoscopy (all pre-op / 18/29 post-op)
  - Standardized 48h pH monitoring (25/29 pre-op 15/29 post-op)
  - Barium Swallow (pre-op only)
  - (Selectively, Esophageal Manometry, pre-op only)



# Methods

- All Endoscopies performed by one of two surgeons (JS, GC)
- Standardized Wireless pH probe protocol
- All conversions were performed by the same surgeon (GC)
- Time period 12/2017 – 8/2021

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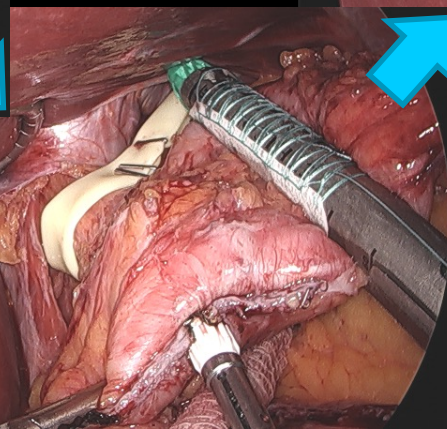
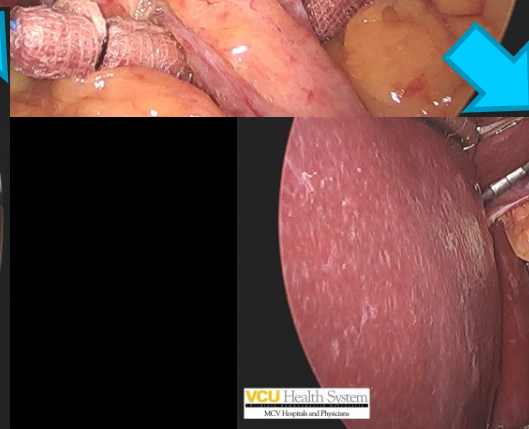
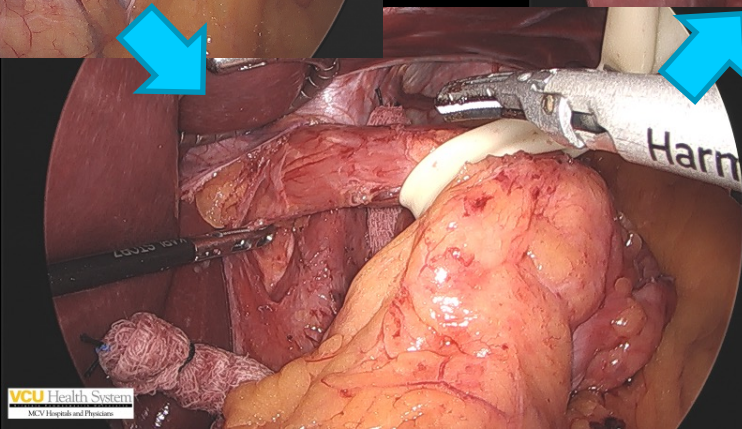
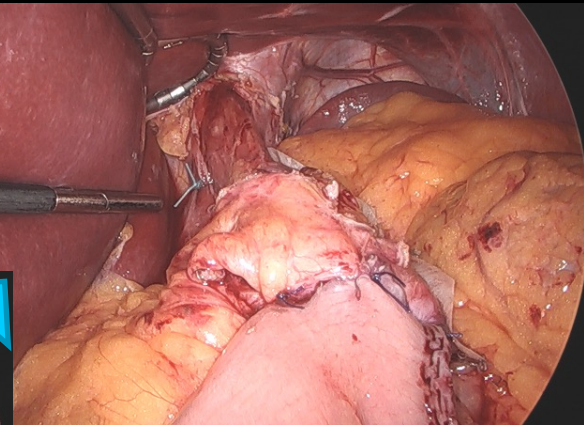
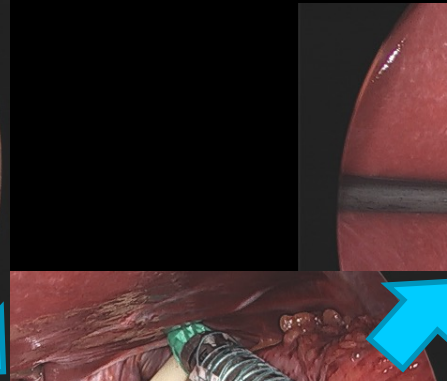
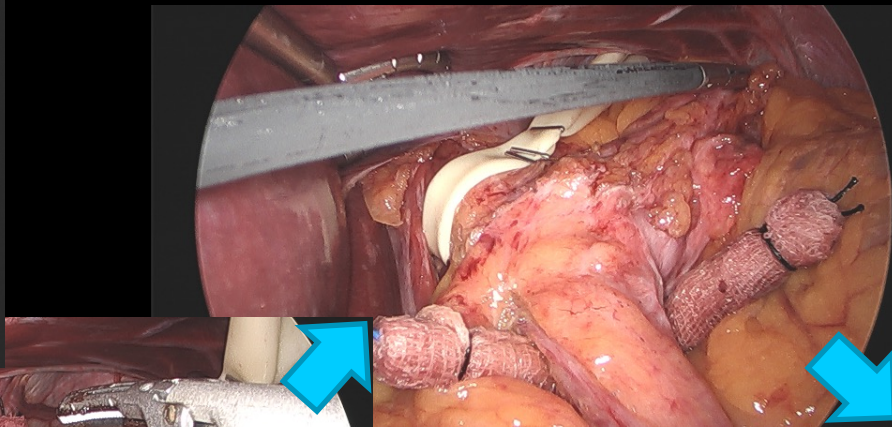
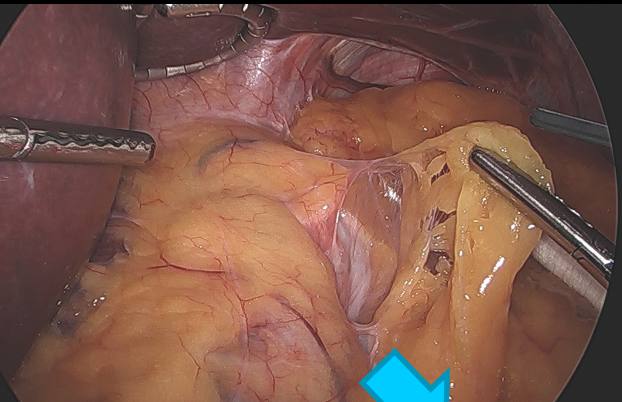
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# Methods

- Laparoscopic technique:
  - Routine esophageal hiatus dissection and closure
  - Creation of a 3-5 cm long gastric pouch removing any excess fundus
  - Division lateral aspect pouch at 2 cm lateral from the Angle of His
  - Circular stapled 25 mm GJ, minimal limb lengths (50cm BP, 70 cm alimentary)





# Methods

- **Primary outcomes:**
  - GERD symptom Improvement
  - Esophagitis Resolution
  - Changes distal esophageal acid exposure 48h wireless pH-monitoring
- **Secondary outcomes:**
  - Perioperative outcomes (Operation time, LOS, 30 day complications)
  - Weight loss

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# Results – Pre-operative data

- **N=29 - Dec. 2017 – Aug. 2021. All Female, Mean Age 44.2 (30 to 69)**
- **BMI at Conversion: 39 (27 – 51)**
- **All patients with Heartburn**
  
- **All Lap Conversion LSG to RYGB/HH repair; one +EGJOO/+Heller Myotomy**
  
- **Time from index LSG to Lap Conversion: Mean 6.2 years (2.7 to 15.6 years)**
  
- **(86%, 25/29) - Hiatal Hernia (2 to 10 cm)**
- **(17%, 5/29) - Grade C or D Esophagitis**
- **(7%, 2/29) - non-dysplastic Barrett's Esophagus (2 SSBS)**
- **(100%, 25/25) - Abnormal 48h pH monitoring**

# Results – Perioperative Data

- Completed laparoscopically in all
- OR Time (Cut to Close): Median 227 min (189 to 385 min)
- Average Length of stay 2.4 days (2 to 5)
- Peri-operative complications occurred in 4/29 (14%)
  - 3 Gastrojejunal strictures - endoscopic dilation
  - 1 Post operative bleed - 2 units blood transfusion
- No reoperations or mortality

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# Results – Post-operative Data

- Mean Follow up 19 months (1 to 45 months)
- BMI at FU: 34 (23 to 45)
- BMI Average decrease: 5kg/m<sup>2</sup> (0 to 20)
- Complete Heartburn resolution in 26/29 (89.7%), significant improvement heartburn with other GI complaints in 3 (10.3%)

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# Results – Endoscopic Changes

	Pre Endoscopy (n=29)	Post Endoscopy (n=18)	P value
<b>No Esophageal Mucosal Injury</b>	12 (41%)	17 (95%)	<0.01
<b>Grade A/B Esophagitis (n%)</b>	11 (38%)	0	<0.01
<b>Grade C/D Esophagitis (n%)</b>	5 (17%)	0	ns
<b>Any Esophagitis (n%)</b>	16 (55%)	0	<0.01
<b>Barrett's Esophagus (n%)</b>	2 (7%) (C0M2 and C0M3)	1 (6%) (C0M1)	ns
<b>Hiatal hernia (n%)</b>	25 (86%)	1 (6%)	<0.01
<b>Pouch size (cm)</b>	-	3.8cm (2.5 - 6)	-

Repeated Endoscopy and Bravo Average 10 months Post-op (Range 4 to 27 months)



# Results – Esophageal Acid Exposure Changes

	Normal Value	Pre Bravo (n=25) Median (Range)	Post Bravo (n=15) Median (Range)	P value
Total percentage time pH < 4	< 4.8	9.3 (3.2 – 26.4)	1.2 (0 – 3.5)	<.001
Total no. of reflux episodes	< 104	88 (9 – 203)	24 (2 – 105)	.009
No. of reflux episodes >5 min	< 5	9 (0 – 37)	0 (0 – 4)	<.001
Longest reflux episode (min)	< 16.2	29.1 (4.7 – 158)	3.4 (0.3 – 22.1)	.009
DeMeester Score	< 14.9	27.2 (15 -106.5)	5.6 (0.5 – 12.3)	<.001

Repeated Endoscopy and Bravo Average 10 months Post-op (Range 4 to 27 months)

# Discussion

- Limitations
  - Relatively small case series and follow up
  - Variability in original Sleeve techniques

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# Conclusion

- These results provide objective evidence to support that LSG conversion to RYGB due to GERD, when following certain technical aspects, is safe and effective.
- When possible, laparoscopic SG conversion to RYGB should be considered the preferred method to treat medically refractory GERD after LSG.

# Thank you!

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