Hiatal Hernia & REDO bariatric surgery

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I have the following potential conflict(s) of interest to report:

- Receipt of grants/research supports:
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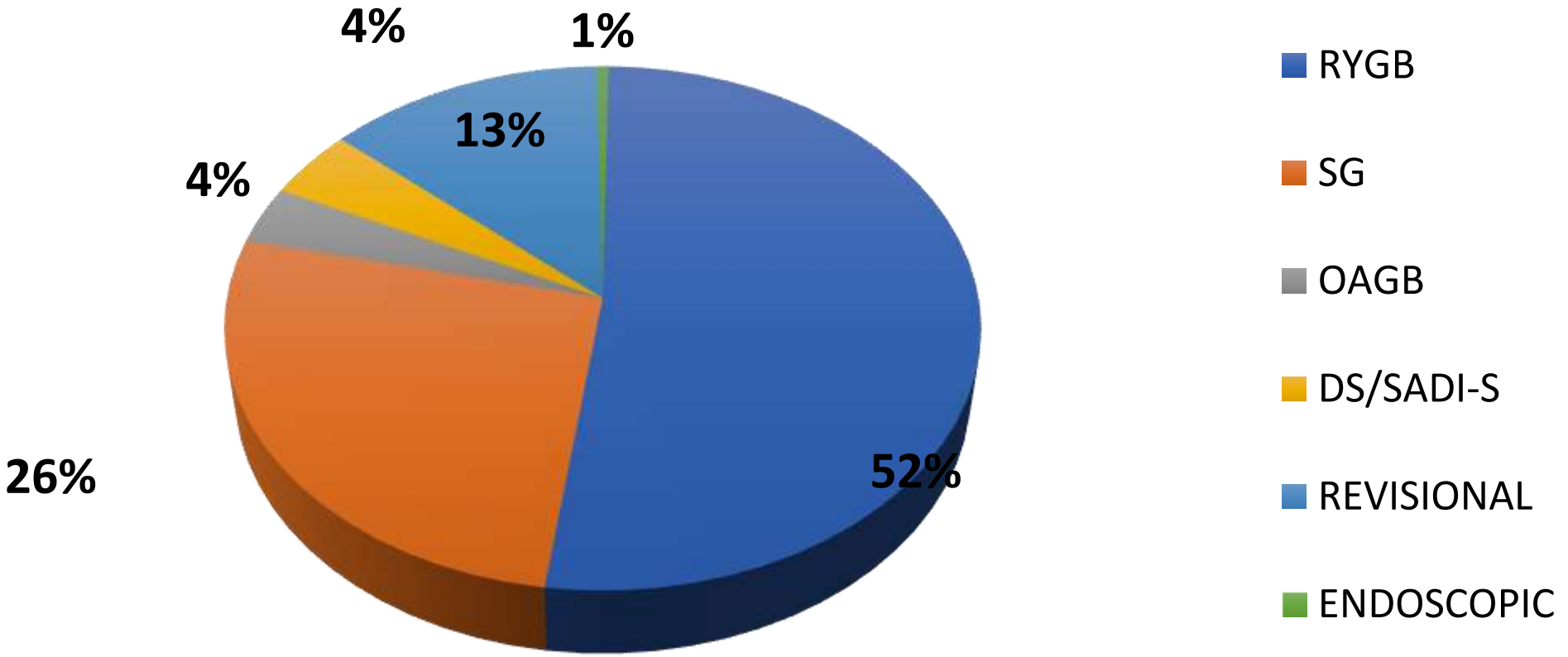
4%
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RYGB
SG
OAGB
DS/SADI-S
REVISIONAL
ENDOSCOPIC

- Trends in RBS
- When (Cases) Hiatal Hernia can be Assessed ?

- Guidelines ?

- Protocols ?

Curr Atheroscler Rep (2016) 18:42
DOI 10.1007/s11883-016-0592-3

LIPID AND METABOLIC EFFECTS OF GASTROINTESTINAL SURGERY (R. COHEN, SECTION EDITOR)

Revisional Bariatric/Metabolic Surgery: What Dictates Its Indications?

Pearl Ma[1] · Subhash Reddy[1] · Kelvin D. Higa[1]

Revisional surgeries are higher risk operations and should be performed by experienced and technically competent bariatric surgeons with multidisciplinary resources available.

Clapp B (2020) Trends in revisional bariatric surgery using the MBSAQIP database 2015–2017. Surg Obes Relat Dis 16:908–915

Montfared S. Surgical Endoscopy (2023)

Revisional procedures are typically more complicated with longer operative times, potentially increased complication rates, and the necessity for an advanced technical skill set.

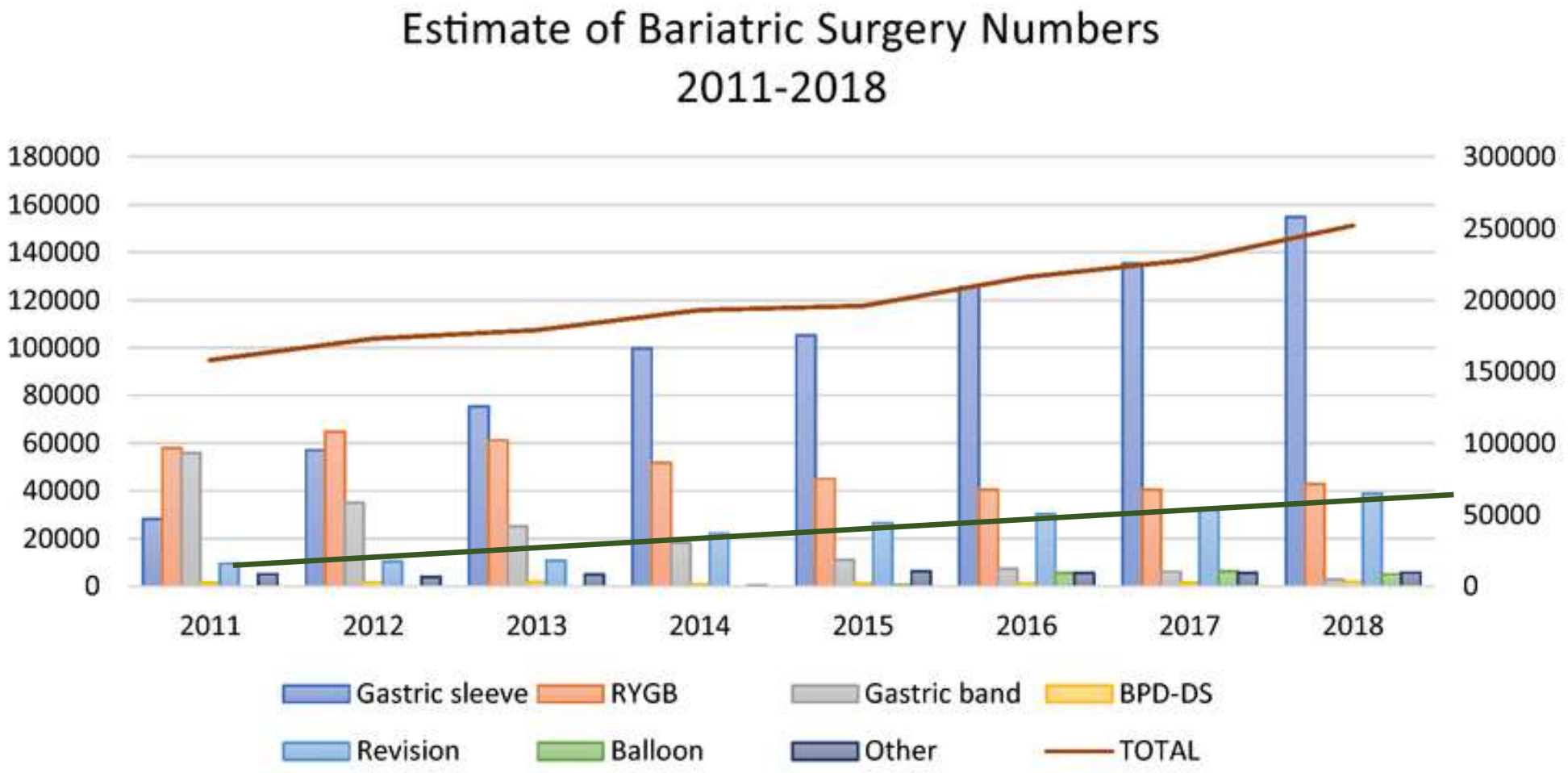
JOURNAL OF LAPAROENDOSCOPIC & ADVANCED SURGICAL TECHNIQUES
Volume 00, Number 00, 2021

DOI: 10.1089/lap.2021.0506

The Panoramic View of Revisional Bariatric Surgery

Ramon Vilallonga, PhD,[1,i] José Manuel Fort, PhD,[1] María Rita Rodríguez Luna, MD,[2,ii]
Amador García Ruiz de Gordejuela, PhD,[1] Oscar Gonzalez, PhD,[1] Enric Caubet, PhD,[1]
Arturo Cirera de Tudela, MD,[1] Mariano Palermo, PhD,[3,iii] Andrea Ciudin, PhD,[4–6] and Manel Armengol, PhD[1]

Trends In bariatric surgery

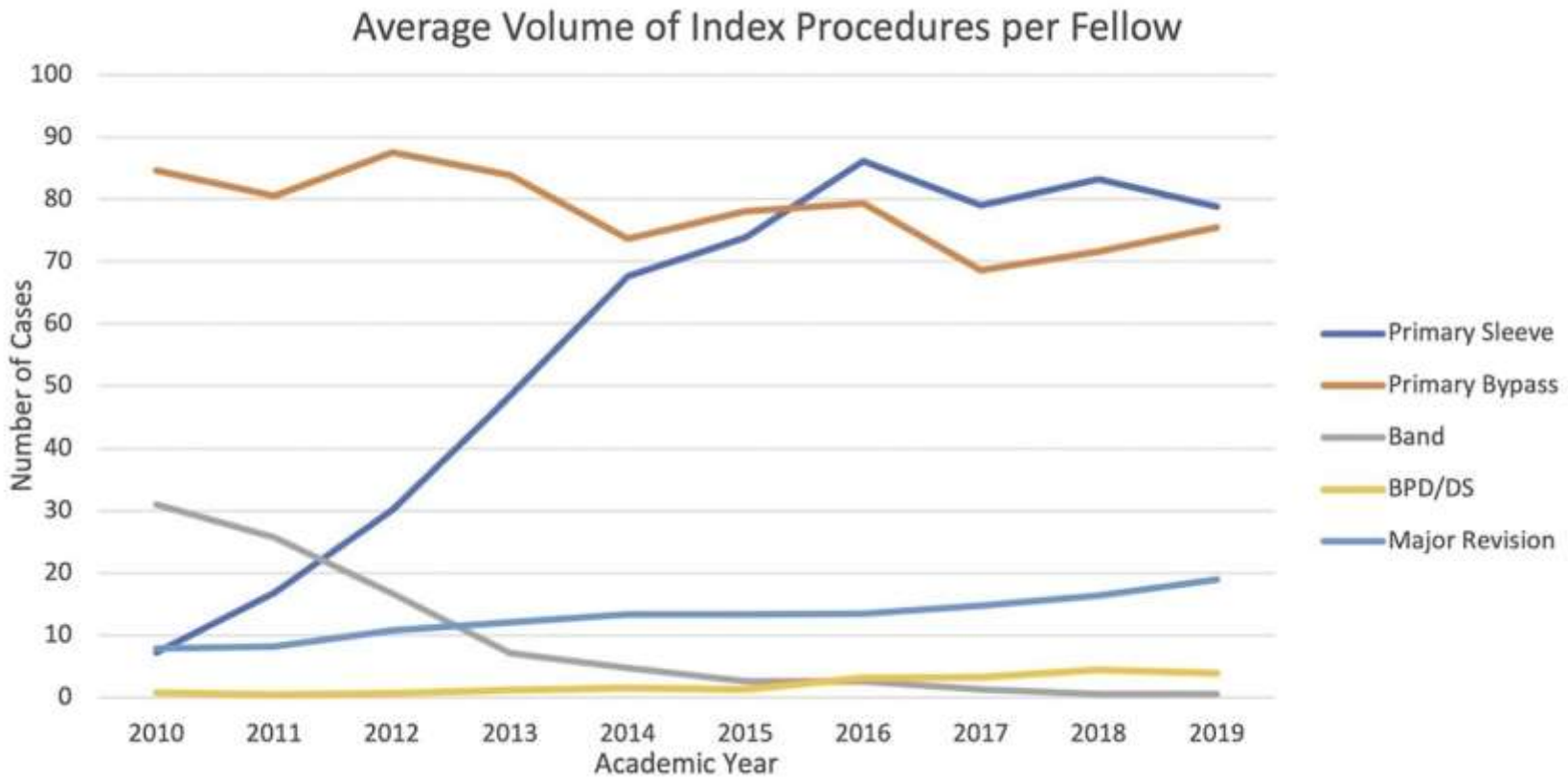


Surgical Endoscopy (2023) 37:4824–4828
https://doi.org/10.1007/s00464-022-09622-y

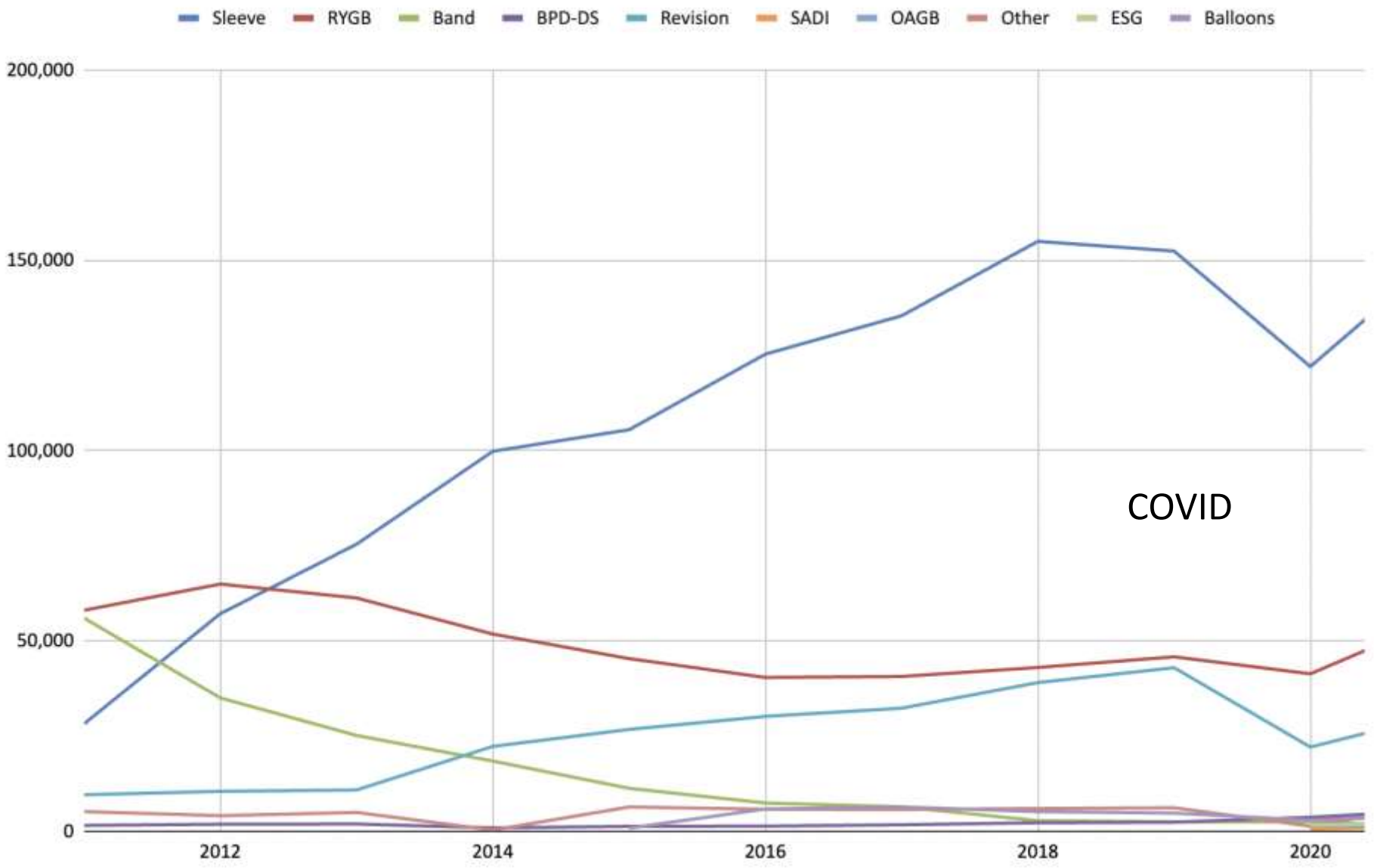
2022 SAGES ORAL

The rising tide of revisional surgery: tracking changes in index cases among bariatric-accredited fellowships

Sara Monfared[1] · Joshua J. Weis[1] · Shinil K. Shah[1] · Daniel J. Scott[1]



Dr. Ramon Vilallonga



	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Sleeve	152,866	122,056	152,413	154,976	135,401	125,318	105,448	99,781	75,359	57,090	28,124
RYGB	56,527	41,280	45,744	42,945	40,574	40,316	45,276	51,724	61,218	64,875	57,986
Band	1,121	2,393	2,375	2,660	6,318	7,310	11,172	18,335	25,060	34,946	55,932
BPD-DS	5,525	3,555	2,272	2,123	1,588	1,236	1,176	772	1,790	1,730	1,422
Revision	31,021	22,022	42,881	38,971	32,238	30,077	26,656	22,195	10,740	10,380	9,480
SADI	1,025	488	–	–	–	–	–	–	–	–	–
OAGB	1,149	1,338	–	–	–	–	–	–	–	–	–
Other	7,339	1,221	6,060	5,847	5,606	5,665	6,272	193	4,833	3,979	5,056
ESG	2,220	1,500	–	–	–	–	–	–	–	–	–
Balloons	4,100	2,800	4,655	5,042	6,280	5,744	700	–	–	–	–
Total	**262,893**	**198,651**	**256,000**	**252,564**	**228,005**	**215,666**	**196,700**	**193,000**	**179,000**	**173,000**	**158,000**

Source: ASMBS database. Available at website.

1. Lack of success in fulfilling a will or purpose
2. The omission of an action expected or required

“Partial response”

- Failure to lose weight
- Excessive weight loss: malnutrition
- Control of comorbidities
- Meeting Patient Expectations
- Impact on quality of expected years of life (QALY)

Revisonal surgery… What for ?

Revisional surgery is heterogeneous and conducted for various indications including reflux, malnutrition, and inadequate weight loss amongst other reasons.

The heterogeneity of available data limits our ability to understand and contextualize the safety of revisional procedures.

- *Hornock S (2021) The safety of additional procedures at the time of revisional bariatric surgery. Surg Endosc 35:3940–3948*
- *Shahwan S, Oochit K, Campbell E, Kourounis G (2022) Reporting of weight loss outcomes in bariatric surgery following introduction of 2015 ASMBS guidelines. Surg Obes Relat Dis 18:1195–1198*
- *Vahibe A, Aizpuru MJ, Sarr MG, Mundi MS, Vierkant RA, McKenzie T, Abu Dayyeh BK, Ghanem OM (2022) Safety and efficacy of revisional surgery as a treatment for malnutrition after bariatric surgery. J Am Coll Surg 236(1):156–166*
- *Mahawar KK (2015) Revisional Roux-en-Y gastric bypass and sleeve gastrectomy: a systematic review of comparative outcomes with respective primary procedures. Obes Surg 25:1271–1280*

While the prevalence of revisional bariatric procedures is increasing, few guidelines outlining patient selection for revisional bariatric surgery exist

- *Chew CAZ, Shabbir A (2017) Revisional bariatric surgery: focus on quality of life. J Obes Metab Syndr*
- *de Gara CJ, Karmali S (2014) The anatomy of a weight recidivism and revision bariatric surgical clinic. Gastroenterol Res Pract*

HIATAL HERNIA ??

Surgical Endoscopy
https://doi.org/10.1007/s00464-019-06937-1

The first consensus statement on revisional bariatric surgery using a modified Delphi approach

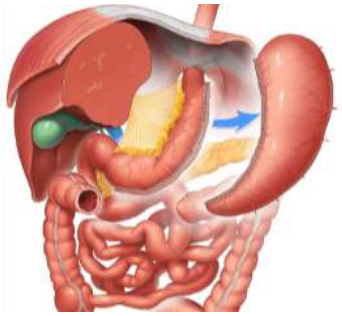
Kamal K. Mahawar[1] · Jacques M. Himpens[2] · Scott A. Shikora[3] · Almino C. Ramos[4] · Antonio Torres[5] · Shaw Somers[6] · Bruno Dillemans[7] · Luigi Angrisani[8] · Jan Willem M. Greve[9,10] · Jean-Marc Chevallier[11] · Pradeep Chowbey[12] · Maurizio De Luca[13] · Rudolf Weiner[14] · Gerhard Prager[15] · Ramon Vilallonga[16] · Marco Adamo[17] · Nasser Sakran[18] · Lilian Kow[19] · Mufazzal Lakdawala[20] · Jerome Dargent[21] · Abdelrahman Nimeri[22] · Peter K. Small[1]

OAGB is an acceptable RBS option after SG	84.3 (59/70)
BPD/DS is an acceptable RBS option after SG	81.4 (57/70)
SADI-S is an acceptable RBS option after SG	88.5 (62/70)

No reference to the Hiatus

Types of revisions

- Revisión of GBP → Pouch migration into the thorax

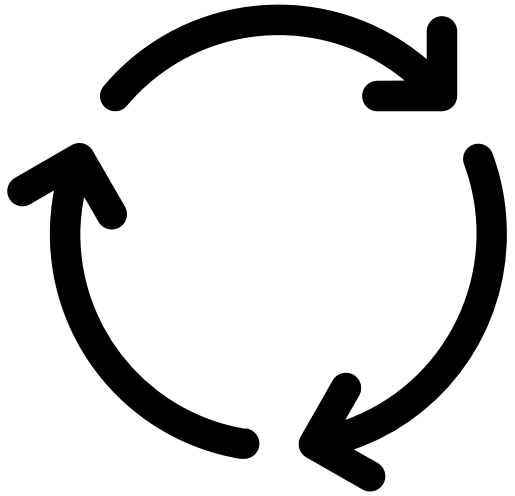


- Revisión of SG/SADI-S/DS (…) → GERD ?? Hiatal hernia? Weight regain or insufficient weight loss ??

- Revision of LAGB → GERD ? Hiatal hernia ? With or without insufficient weight loss

- Nissen Funduplication to other procedure.

GERD, OBESITY AND HIATUS HERNIA: the relationship



- Mechanisms for the development of GERD:

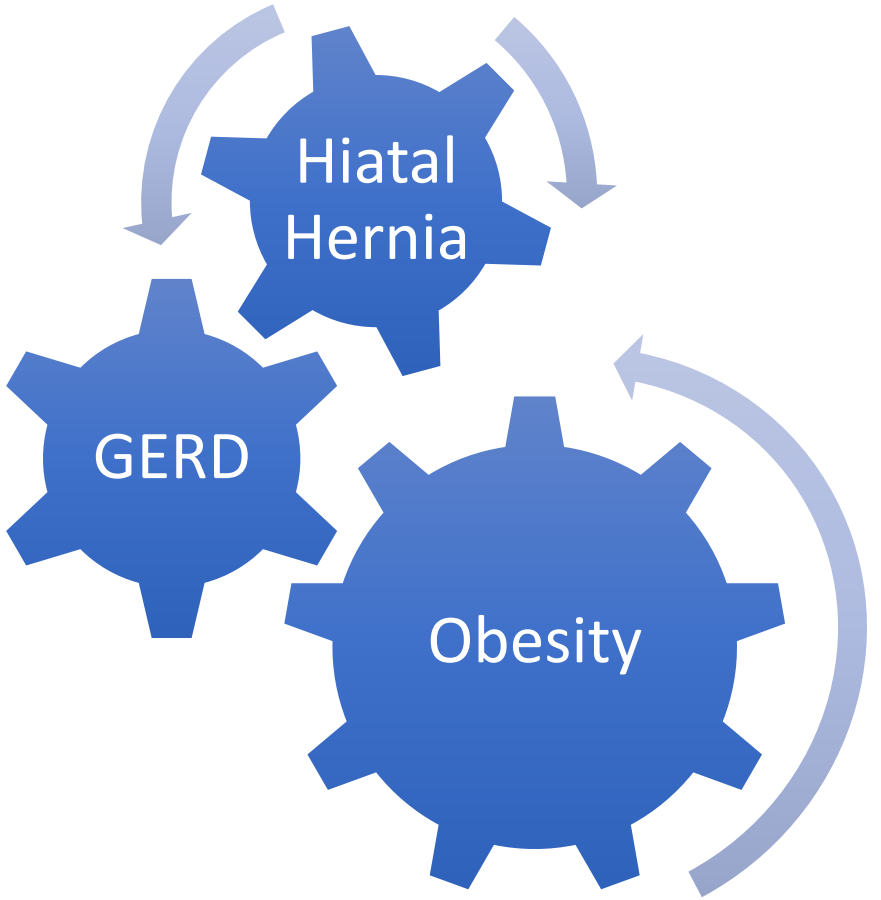
- Increased intra-abdominal pressure, as occurs in obese individuals
- Dysmotility of the tubular esophagus
- Lower esophageal sphincter (LES) dysfunction

GERD, OBESITY & HIATAL HERNIA: relació

- The presence of HH is very common in obese patients. Can still be present after the primary surgery

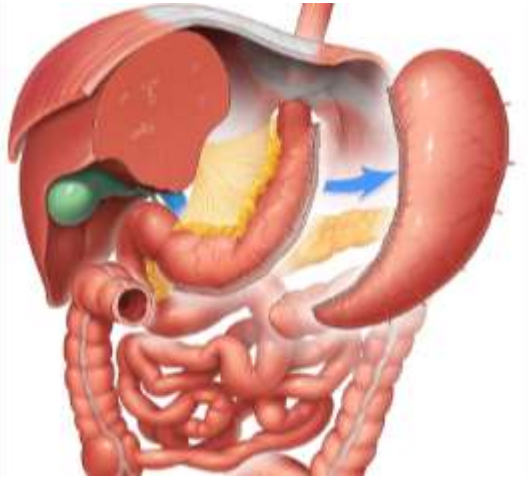
- Obesity is considered an independent risk factor for GERD. (Weight los impact ??)

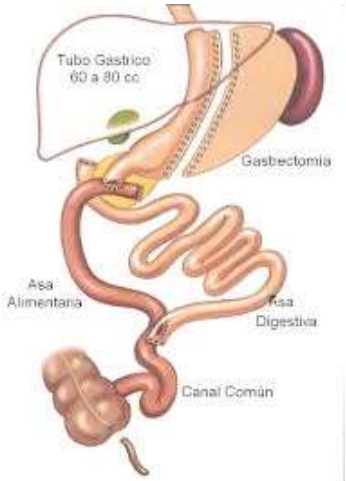
- A higher BMI causes an increase in the prevalence of GERD by increasing the risk of developing HH



Risk of not repairing it during the first procedure. ::> Recurrence ?
Increased hernia after weight loss specially for SG. (?)

Primary Surgery and Corrective Surgery



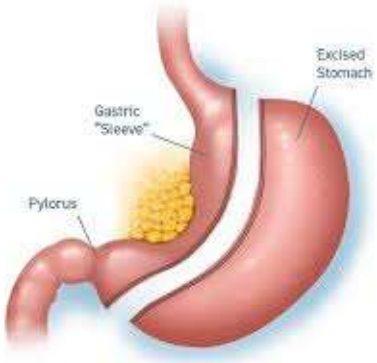


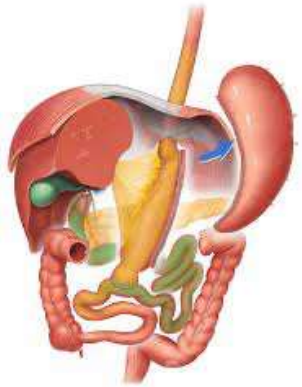
Before revisonal surgery....

Evaluate the patient: what is the most important problem for the patient (can be different from the surgeon's perspective)

-> STRATEGY is mandatory

- FGS
- pHmetry
- Manometry
- EGD swallow
- CT volumetry with 3D reconstruction





Sabry K,. J Laparoendosc Adv Surg Tech A. 2022
Vilallonga R, Medicina (Kaunas). 2021.

Management.
Quantify the disease with diagnostic tests

Diabetes Mellitus

Insuline

IMC

Liver steatosis

Age

Hiatal Hernia ? Preoperative Diagnosis. Intraoperative diagnosis ?

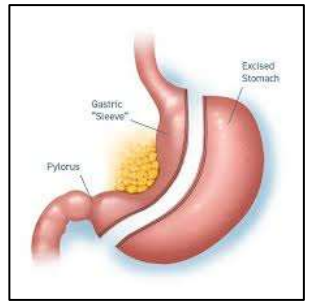
SOAS

Esophagitis

Barret

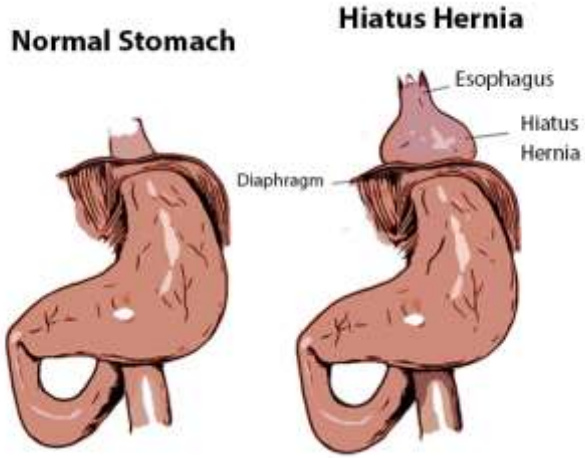
Dr. Ramon Vilallonga

Debated issue about GERD in bariatric surgery is the presence of hiatal hernia



Improvement in GERD symptoms when hiatal hernia is diagnosed and repaired

NO Improvement in GERD symptoms when hiatal hernia is diagnosed and repaired



Hendricks L et al . Surg Obes Relat Dis 12:511–517.
Moon RC et al. Surg Obes Relat Dis 11:546–551.
Stenard F et al. World J gastroenterol 21(36):1034810357.
Braghettol et al. .Dis Esophagus.

INDEX COPERNICUS INTERNATIONAL

META-ANALYSIS

Hiatal hernia repair during laparoscopic sleeve gastrectomy: systematic review and meta-analysis on gastroesophageal reflux disease symptoms changes

Plastyka przepukliny roztworu przełykowego podczas laparoskopowej rękawowej resekcji żołądka: przegląd systematyczny z meta-analiza na temat refluksu żołądkowo-przełykowego

Authors' Contribution:
A – Study Design
B – Data Collection
C – Statistical Analysis
D – Manuscript Preparation
E – Literature Search
F – Funds Collection

Piotr Małczak[1ACDEF], Magdalena Pisarska-Adamczyk[1B], Piotr Zarzycki[1B], Michał Wysocki[2D], Piotr Major[3AEF]

[1]Department of Medical Education, Jagiellonian University Medical College, Cracow, Poland
[2]Department of General Surgery and Surgical Oncology, Ludwik Rydygier Memorial Hospital in Cracow, Poland; Head: prof. Andrzej Budzyński MD PhD
[3]2nd Department of General Surgery, Jagiellonian University Medical College, Cracow, Poland; Head: prof. Andrzej Matyja MD PhD

Study or Subgroup	LSG + HHR Events	LSG + HHR Total	LSG Events	LSG Total	Weight	Risk Ratio M-H, Random, 95% CI	Year
Soricelli 2012	0	56	60	262	10.6%	0.04 [0.00, 0.61]	2012
Santonicola 2014	11	48	11	62	34.0%	1.29 [0.61, 2.72]	2014
Snyder 2016	3	5	1	4	18.1%	2.40 [0.38, 15.14]	2016
Aridi 2017	12	30	24	52	37.2%	0.87 [0.51, 1.47]	2017
Lasnibat 2017	0	0	5	23		Not estimable	2017
Total (95% CI)		**139**		**403**	**100.0%**	**0.86 [0.30, 2.45]**	
Total events	26		101				

Heterogeneity: $Tau^2 = 0.70$; $Chi^2 = 11.10$, df = 3 (P = 0.01); $I^2 = 73\%$

Test for overall effect: Z = 0.29 (P = 0.77)

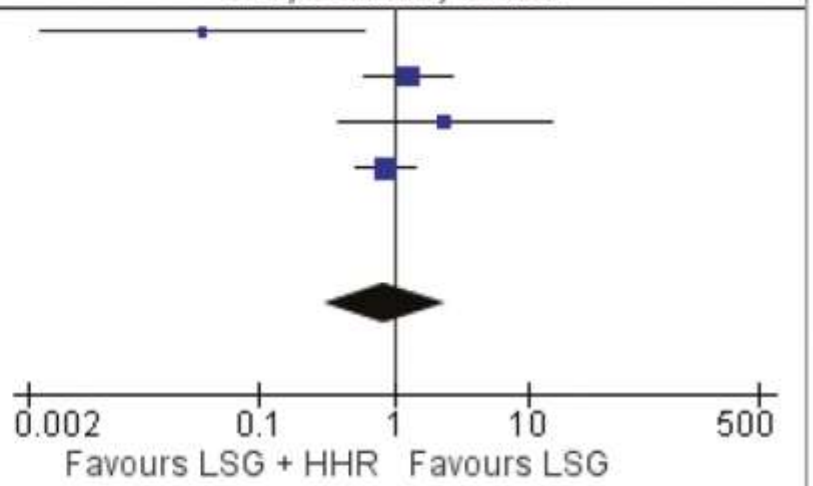


Fig. 3. Pooled estimates of "de-novo" GERD comparing LSG with HHR and LSG alone. CI confidence interval, df degrees of freedom.

There are no differences in GERD between hiatal hernia repair during sleeve gastrectomy in comparison to sleeve gastrectomy alone. More high-quality studies are required to fully evaluate this subject.

SLEEVE GASTRECTOMY & GERD: INCIDÈNCIA

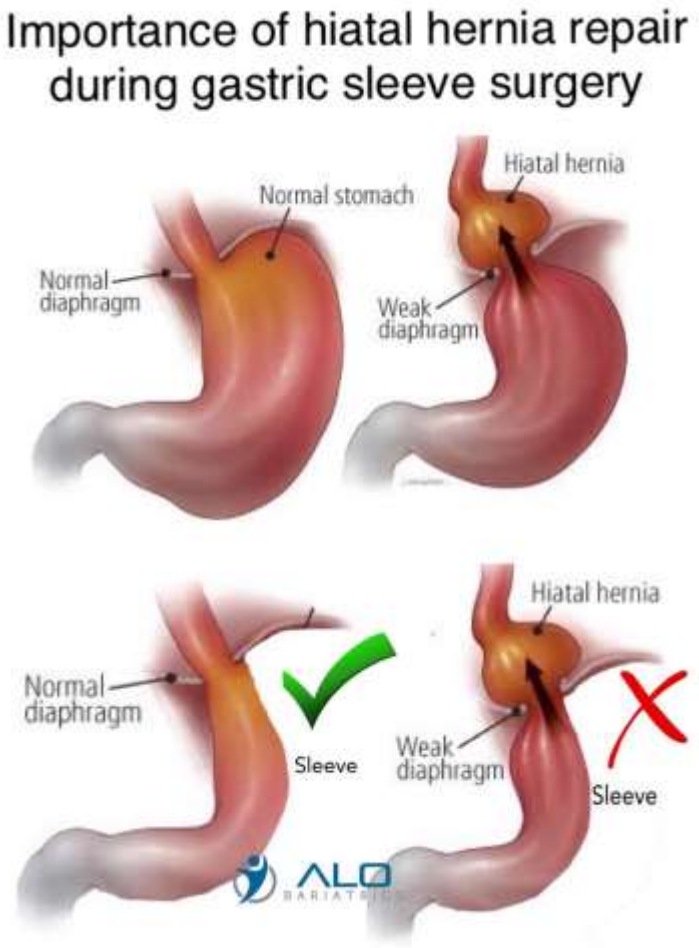
Hindawi Publishing Corporation
Journal of Obesity
Volume 2013, Article ID 741097, 6 pages
http://dx.doi.org/10.1155/2013/741097

Hindawi

Review Article

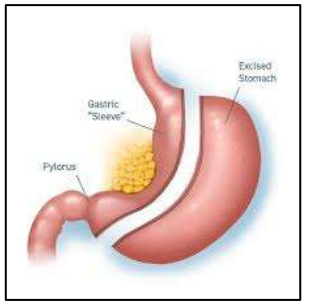
Sleeve Gastrectomy and Gastroesophageal Reflux Disease

Michael Laffin,[1] Johnny Chau,[1] Richdeep S. Gill,[1] Daniel W. Birch,[2] and Shahzeer Karmali[2]



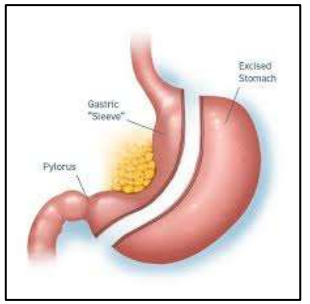
IFSO NAPOLI 2023

SLEEVE GASTRECTOMY & GERD

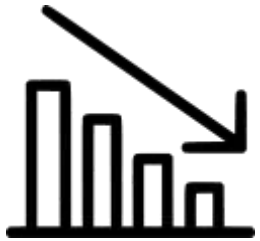


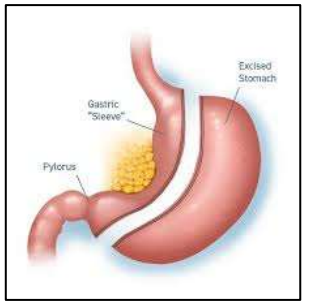
Proposed mechanisms for increased GERD after SG	Reference
Hypotension of the lower esophageal sphincter	Braghetto et al. [48]
Blunting of the angle of His	Himpens et al. [49]
Decreased gastric compliance and volume (leading to increased gastric pressure)	yehoshua et al. [50]
Decreased gastric emptying	Himpens et al. [49], Melissas et al. [32]
Decreased plasma ghrelin (dysmotility)	Nahata et al. [51]
Gastric sleeve shape	Lazoura et al. [52]
Increase in hiatal hernia	Baumann et al. [53]
Neofundus	Himpens et al. [40]

SLEEVE GASTRECTOMY & GERD



Proposed mechanisms for decreased GERD after SG	Reference
Accelerated gastric emptying	Melissas et al. [54], Shah et al. [55]
Decreased abdominal obesity	Pandolfino et al. [17]
Increased long-term gastric compliance	Karamanakos et al. [34]
Restoration of the angle of His	Himpens et al. [49]
Decreased acid production	
Gastric sleeve shape	Lazoura et al. [52]
Decreased wall tension	Santoro [56]





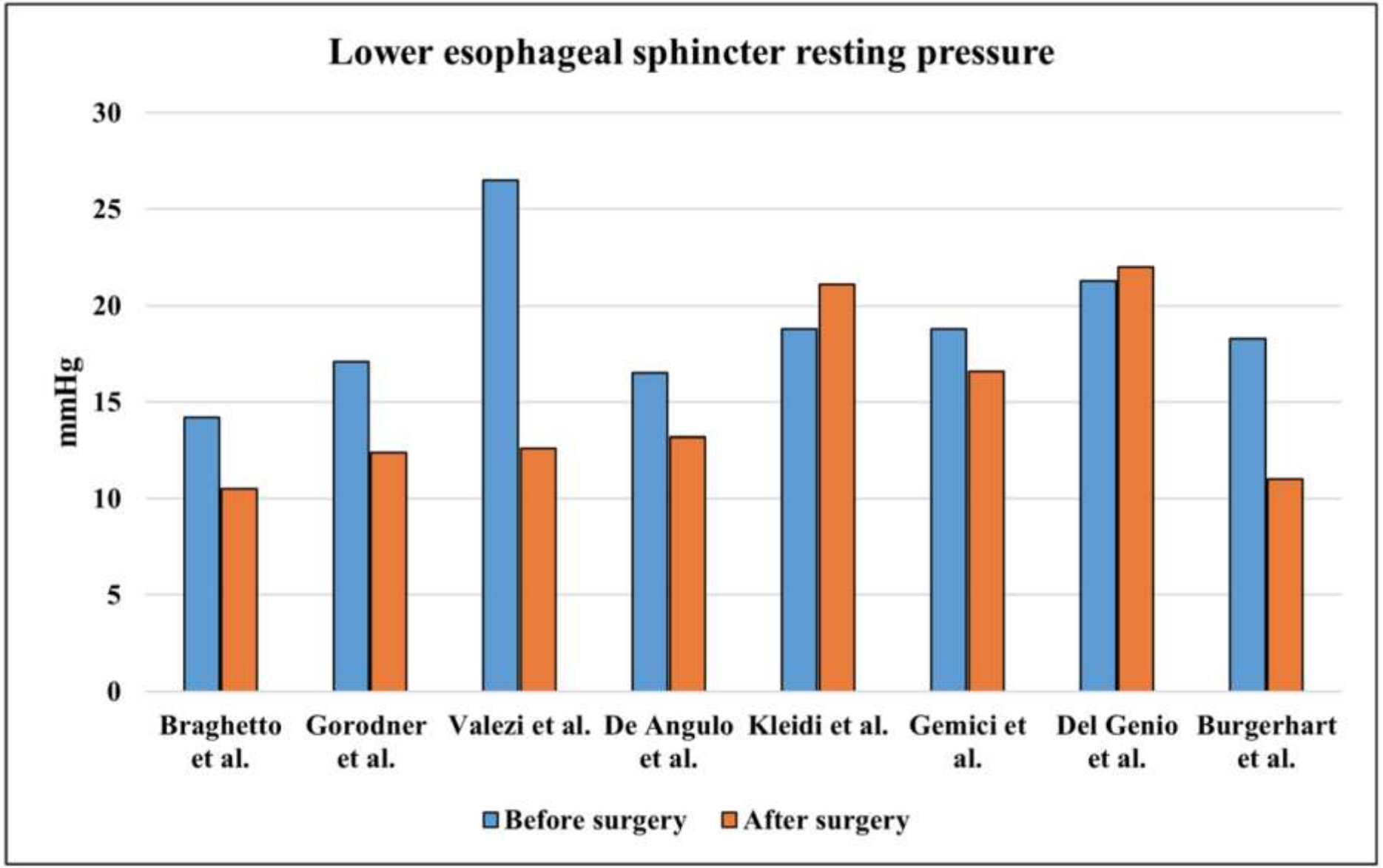
Langenbeck's Archives of Surgery
https://doi.org/10.1007/s00423-021-02171-3

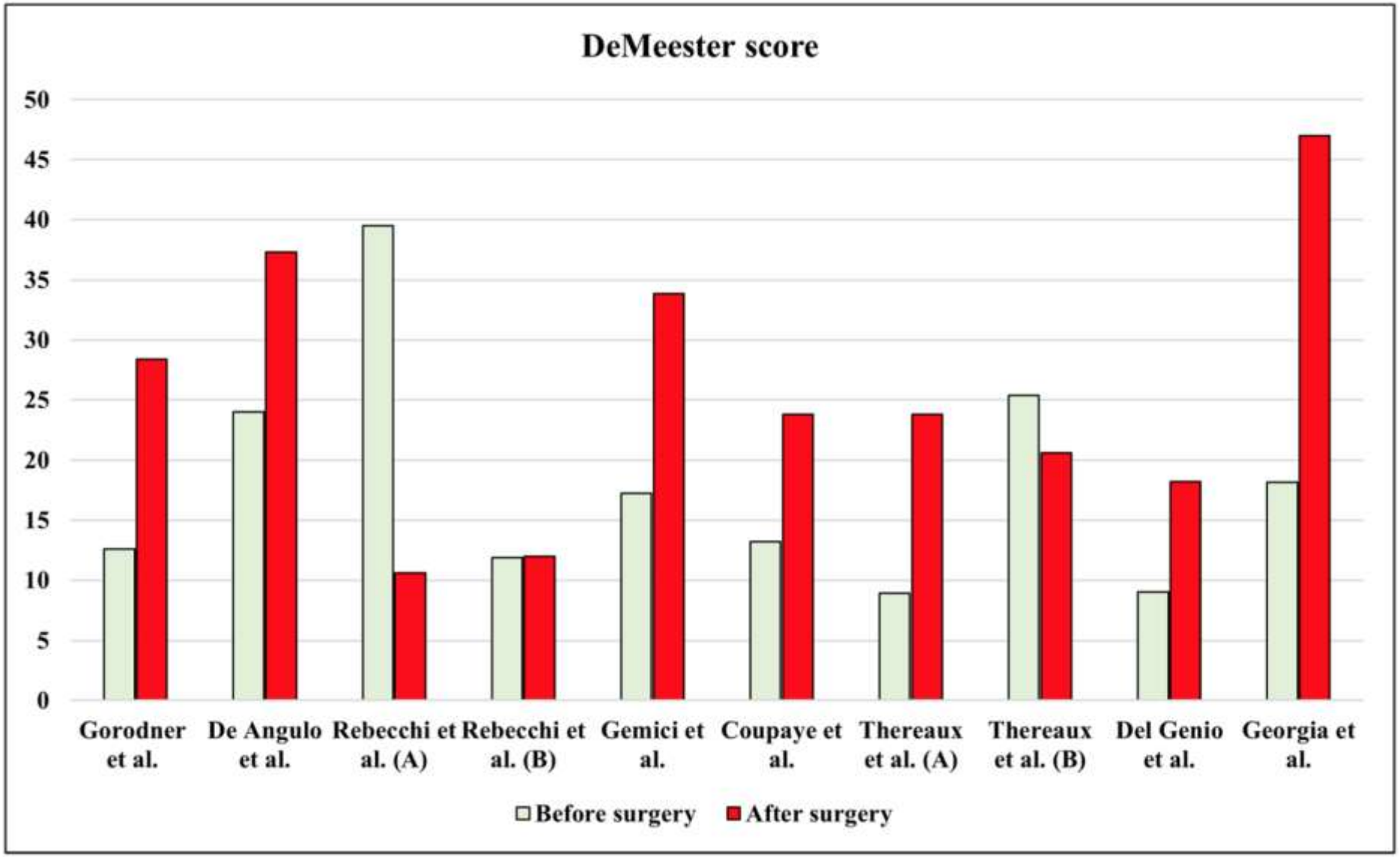
REVIEW ARTICLE

Check for updates

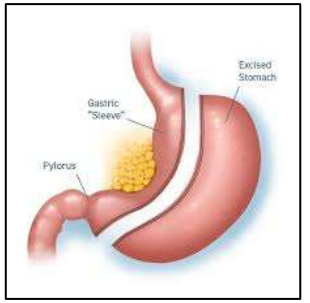
Manometric and pH-monitoring changes after laparoscopic sleeve gastrectomy: a systematic review

Andrea Balla[1] · Francesca Meoli[1] · Livia Palmieri[1] · Diletta Corallino[1] · Maria Carlotta Sacchi[2] · Emanuela Ribichini[2] · Diego Coletta[3] · Annamaria Pronio[4] · Danilo Badiali[2] · Alessandro M. Paganini[1]


Lower esophageal sphincter resting pressure
mmHg
30
25
20
15
10
5
0
Braghetto et al.
Gorodner et al.
Valezi et al.
De Angulo et al.
Kleidi et al.
Gemici et al.
Del Genio et al.
Burgerhart et al.
Before surgery
After surgery


DeMeester score
50
45
40
35
30
25
20
15
10
5
0
Gorodner et al.
De Angulo et al.
Rebecchi et al. (A)
Rebecchi et al. (B)
Gemici et al.
Coupaye et al.
Thereaux et al. (A)
Thereaux et al. (B)
Del Genio et al.
Georgia et al.
Before surgery
After surgery

Worsening of the GERD, with a discharge de novo prevalence.



The pathophysiology of GERD ?? some functional/motility alterations involving peristalsis of the esophageal body, the EGJ, or both occur after surgery, → difficult to define.

A new anatomical EGJ was formed after LSG, and the new pressure or pressure gradient could influence the pathophysiology of reflux. – Hiatal Hernia ?

Functional tests do not appear to be able to identify predictors of the development of GERD or which patients will develop GERD after LSG more readily.

Obesity Surgery (2020) 30:1360–1367
https://doi.org/10.1007/s11695-019-04286-5

ORIGINAL CONTRIBUTIONS

Predictive Factors of Gastroesophageal Reflux Disease in Bariatric Surgery: a Controlled Trial Comparing Sleeve Gastrectomy with Gastric Bypass

Daniel Navarini[1,2,3,4] · Carlos Augusto S. Madalosso[1,2,3,5] · Alexandre P. Tognon[2] · Fernando Fornari[2,3] · Fábio R. Barão[3] · Richard R. Gurski[4]

To evaluate the impact of laparoscopic sleeve gastrectomy (LSG) or laparoscopic Roux-en-Y gastric bypass (LRYGB) on gastroesophageal reflux disease (GERD) in patients with obesity.

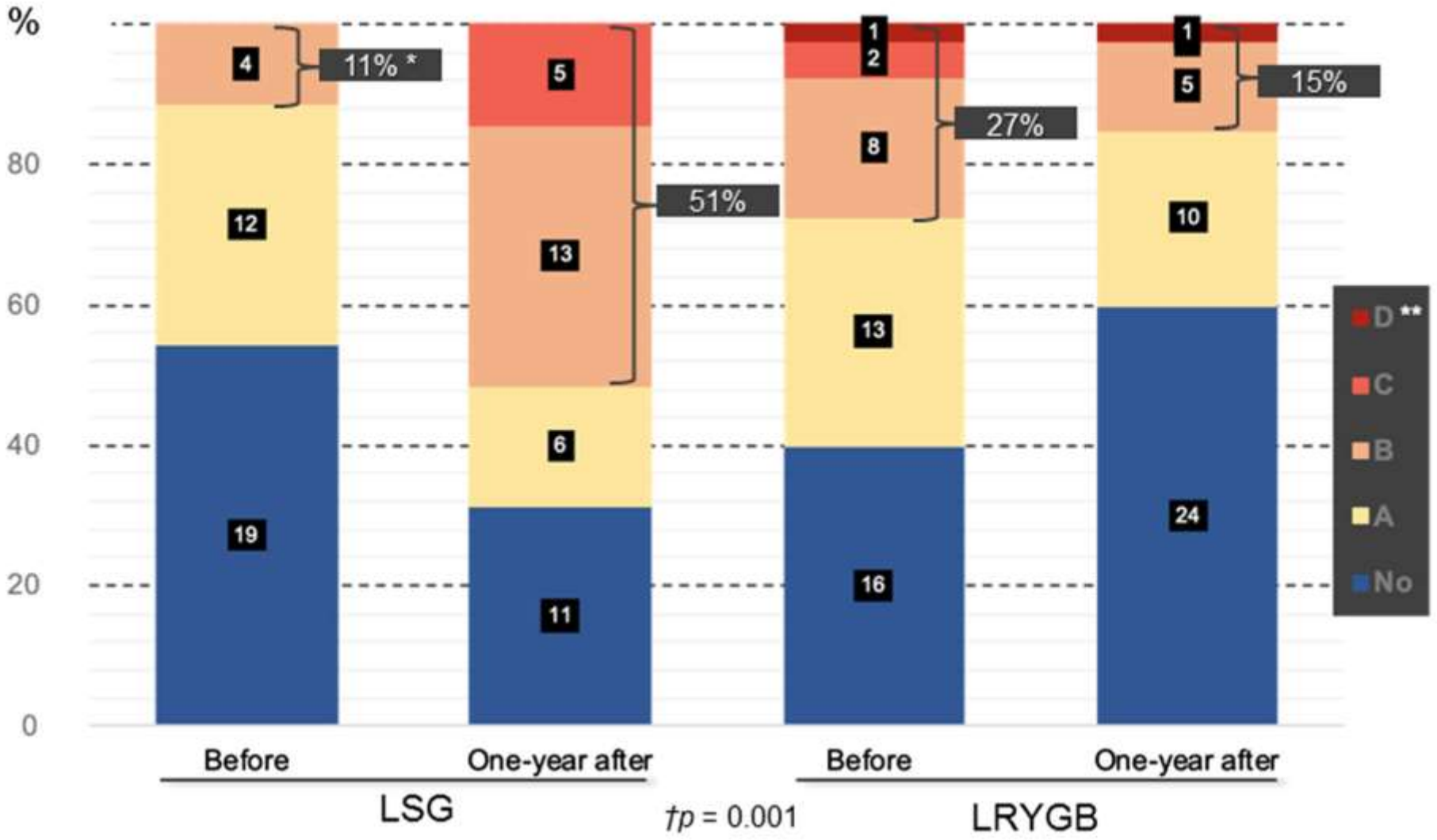
	LSG ($n = 35$)	LRYGB ($n = 40$)	p
Typical GERD symptoms, n (%)	13 (37)	26 (65)	0.016
Reflux esophagitis (≥ B), n (%)	4 (11)	11 (27)	0.083
Hiatal hernia at X-ray, n (%)	11 (31)	20 (50)	0.103
LES pressure*, median (IQR)	12.3 (6–17.4)	9.4 (5–14.6)	0.222
DEA*, median (IQR)	92.1 (76.8–102.2)	84 (67.8–107.5)	0.497
Esophageal TAE, median (IQR)	2.3 (0.6–5.2)	3.2 (1.2–8.3)	0.295
DeMeester score, median (IQR)	10.2 (3.5–19.4)	10.8 (5.0–29.2)	0.288
GERD, n (%)	7 (20)	16 (40)	0.061

GERD, gastroesophageal reflux disease; *LES*, lower esophageal sphincter (mmHg); *DEA*, distal esophageal amplitude (mmHg); *TAE*, total acid exposure; *LRYGB*, laparoscopic Roux-en-Y gastric bypass; *LSG*, laparoscopic

x2

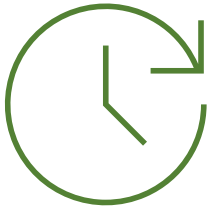
	LSG ($n = 35$)	LRYGB ($n = 40$)	p
Typical GERD symptoms, n (%)	14 (40)	4 (10)	0.002
Reflux esophagitis (≥ B), n (%)	18 (51.4)	6 (15)	0.001
Hiatal hernia at X-ray, n (%)	21 (60)	7 (17)	< 0.001
LES pressure*, median (IQR)	10.0 (4.3–15.5)	9.9 (5.8–19.1)	0.640
DEA*, median (IQR)	76.3 (52.5–100.8)	92.9 (57.5–109.4)	0.142
Esophageal TAE, median (IQR)	8.8 (4.2–17.5)	1.2 (0.3–4.2)	< 0.001
DeMeester score, median (IQR)	34.6 (18.8–61.9)	4.7 (1.7–18.8)	< 0.001
GERD, n (%)	26 (74)	10 (25)	< 0.001

GERD, gastroesophageal reflux disease; *LES*, lower esophageal sphincter; *DEA*, distal esophageal amplitude; *TAE*, total acid exposure; *LRYGB*, laparoscopic Roux-en-Y gastric bypass; *LSG*, laparoscopic sleeve gastrectomy;
* Expressed in mmHg


%
80
60
40
20
0
4
11% *
12
19
5
51%
13
6
11
1
2
27%
8
13
16
1
5
15%
10
24
D **
C
B
A
No
Before
One-year after
LSG
tp = 0.001
Before
One-year after
LRYGB

Predictors of Reflux Esophagitis and GERD at 1-Year Follow-up.

- LSG technique (the strongest predictor)
- Preoperative esophagitis (grades B, C, and D)
- Age (100% increment for each 10 life-year)



When included in the model, post-operative hiatal hernia also was an independent predictor (OR = 5.2, 95%CI 1.4–18.7; p = 0.012).

Obesity Surgery
https://doi.org/10.1007/s11695-023-06784-z

ORIGINAL CONTRIBUTIONS

Revisional Roux-en-Y Gastric Bypass After Sleeve Gastrectomy for Gastro-esophageal Reflux Disease and or Insufficient Weight-Loss: a Comparative Study

Clément Destan[1,2,3] · Clément Baratte[1] · Adriana Torcivia[1] · Christophe Brevart[2,3] · Brice Malgras[2,3] · Karine Clément[4,5] · Christine Poitou[4,5] · Jean-Michel Oppert[4] · Judith Aron-Wisnewsky[4,5] · Laurent Genser[1,5]

Received: 18 May 2023 / Revised: 26 July 2023 / Accepted: 10 August 2023

4 patients (8.7%) presented a hiatal hernia before SG Versus N = 16 (34.7%; p < 0.01) prior to revision to R-RYGB.

Investigation for presence of hiatal hernia before and after SG.

At the time of R-RYGB, all hiatal hernias measured less than 2 cm and only required reduction without hiatus repair.

	Total ($n=46$)	RGERD group ($n=25$)	WLF group ($n=21$)	p
Age (years)*	47 (±10.5)	45 (±10.9)	49.3 (±9.7)	0.2
Gender, M/F, *n* (%)	5(10.9)/41(89.1)	1(4)/24 (96)	4(19)/17 (81)	0.2
History of AGB, *n* (%)	8 (17.4)	2 (8)	6 (28.6)	0.2
At SG				
Weight (kg)*	134 (±22)	127 (±19)	144 (±23)	<0.05
BMI (kg/m^2)*	48.7 (±6.7)	47.6 (±6)	50.2 (±7.6)	0.3
Hiatal hernia, *n* (%)	4 (8.7)	2 (8)	2 (9.5)	*NS*
At R-RYGB				
Delay between SG and conversion (months)*	44.8 (±27.5)	31.2 (±23.5)	61.1 (±23)	<0.001
Weight (kg)*	111.7 (±28.8)	92.2 (±17.4)	134.9 (±21.7)	<0.001
BMI (kg/m^2)*	40.7 (±9.7)	34.7 (±6.1)	47.8 (±8.4)	<0.001
%TWL (from SG to R-RYGB)	19 (±14.8)	27 (±11.6)	7.2 (±12.5)	<0.001
%EWL (from SG to R-RYGB)	40.2 (±32)	44.7 (±26.3)	14.1 (±19)	<0.001
DM, *n* (%)	5 (10.8)	1 (4)	4 (19)	0.2
HT, *n* (%)	16 (34.7)	6 (24)	10 (47.6)	0.1
DL, *n* (%)	11 (23.9)	3 (12)	8 (38)	0.08
OSAS, *n* (%)	27 (58.7)	11 (44)	16 (76.1)	<0.05
JC, *n* (%)	30 (65.2)	16 (64)	14 (66.6)	*NS*
Pre-operative endoscopy				
Normal, *n* (%)	29 (63)	11 (44)	18 (85.7)	<0.01
Oesophagitis, *n* (%)	16 (34.7)	13 (52)	3 (14.2)	<0.05
Barretts' esophagus, *n* (%)	1 (4)	1 (4)	0	*NS*
Hiatal hernia, *n* (%)	16 (34.7)	11 (44)	5 (23.8)	0.2
Number of obesity-related comorbidities, per patient*	1.9 (±1.4)	1.5 (±1.2)	2.4 (±1.5)	<0.05
ASA score ≥3, *n* (%)	12 (26)	2 (8)	10 (47.6)	<0.01

All RGERD-group patients became asymptomatic at 12 months post-conversion without any need for PPI medication. Furthermore, we observed no recurrence of GERD during follow-up,

Same results to the literature.

- *Parmar CD, Mahawar KK, Boyle M, et al. Conversion of Sleeve Gastrectomy to Roux-en-Y Gastric Bypass is Effective for Gastro- Oesophageal Reflux Disease but not for Further Weight Loss. Obes Surg. 2017;27:1651–8.*

- *Iannelli A, Debs T, Martini F, et al. Laparoscopic conversion of sleeve gastrectomy to Roux-en-Y gastric bypass: indications and preliminary results. Surg Obes Related Dis. 2016;12:1533–8.*

	R-RYGB without history of AGB ($n=38$)	R-RYGB with history of AGB ($n=8$)	p
Age (years)*	47 (±10.8)	47 (±9.3)	*NS*
Gender, M/F, n (%)	3(7.9)/35(92.1)	2(25)/6(75)	0.2
Data pre-SG			
Hiatal hernia, n (%)	2 (5.2)	2 (25)	0.1
Weight, kg*	134 (±19)	135 (±34)	*NS*
BMI, kg/m^{2}*	48.6 (±5.9)	49 (±10)	*NS*
Data pre-conversion			
Time SG-conversion (months)*	46.1 (±28.1)	38.8 (±25.1)	0.5
Hiatal hernia, n (%)	13 (34.2)	3(37.5)	*NS*
GERD, n (%)	30 (78.9)	4 (50)	0.2
Weight, kg*	110.4 (±28.4)	117.6 (±32.1)	0.5
BMI, kg/m^{2}*	40.2 (±9.4)	42.8 (±11.5)	0.6
Super obese rate (BMI > 50), n (%)	7 (18.4)	2 (25)	0.6
Co-morbidities related to obesity, per patient*	1.9 (±1.4)	1.7 (±1.1)	*NS*
ASA score ≥ 3, n (%)	9 (23.6)	3 (37.5)	0.6
Data post-conversion			

No differences if the GBP came from a AGB or not

No data on the hiatal repair during the first procedure.

Table 4 GERD-related outcomes stratified by indication after conversion

	Total ($n=46$)	RGERD group ($n=25$)	WLF group ($n=21$)	p
Before SG, n (%)				
GERD symptoms	9 (20)	7 (28)	2 (10)	0.2
PPI use	4 (9)	4 (16)	0	*NS*
Before R-RYGB, n (%)				
GERD symptoms	34 (74)	25 (100)	9 (43)	<0.001
PPI use	30 (65)	25 (100)	5 (24)	<0.001
End of follow-up, n (%)				
GERD symptoms	2 (4)	0	2 (9)	0.2
PPI use	1 (2)	0	1 (5)	0.4

GERD, refractory gastroesophageal reflux disease; *WLF*, weight loss failure; *SG*, sleeve gastrectomy; *R-RYGB*, revisional Roux-en-Y gastric bypass; *PPI*, proton pump inhibitors

During the revisonal surgery....

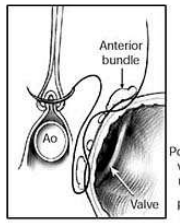
-> STRATEGY is mandatory

- Standard hiatoplasty if it is first time to review and there are hiatal hernia exams showing possible defect

- Other “procedures”

Valid for Sleeve /GBP

BARIATRIC SURGERY & GERD: Failed strategy



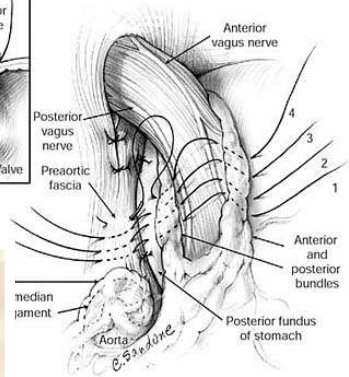
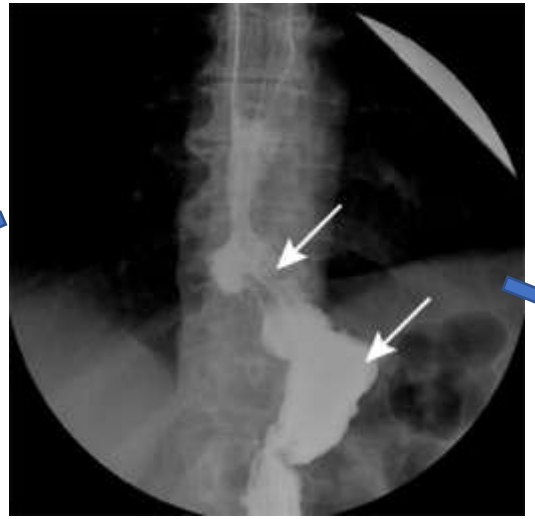
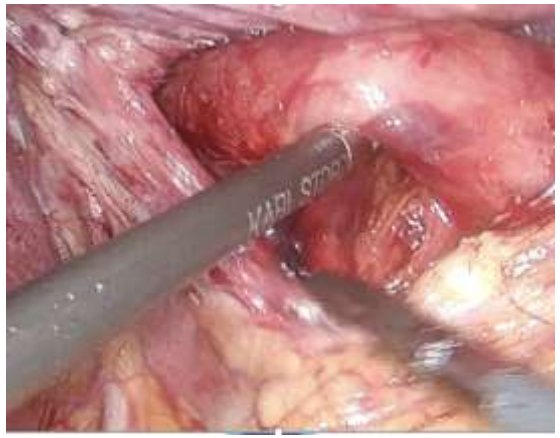


Fig. 3 The remainder of the ligamentum teres was fixed over itself with four to six stitches





Always

Antecolic Limb

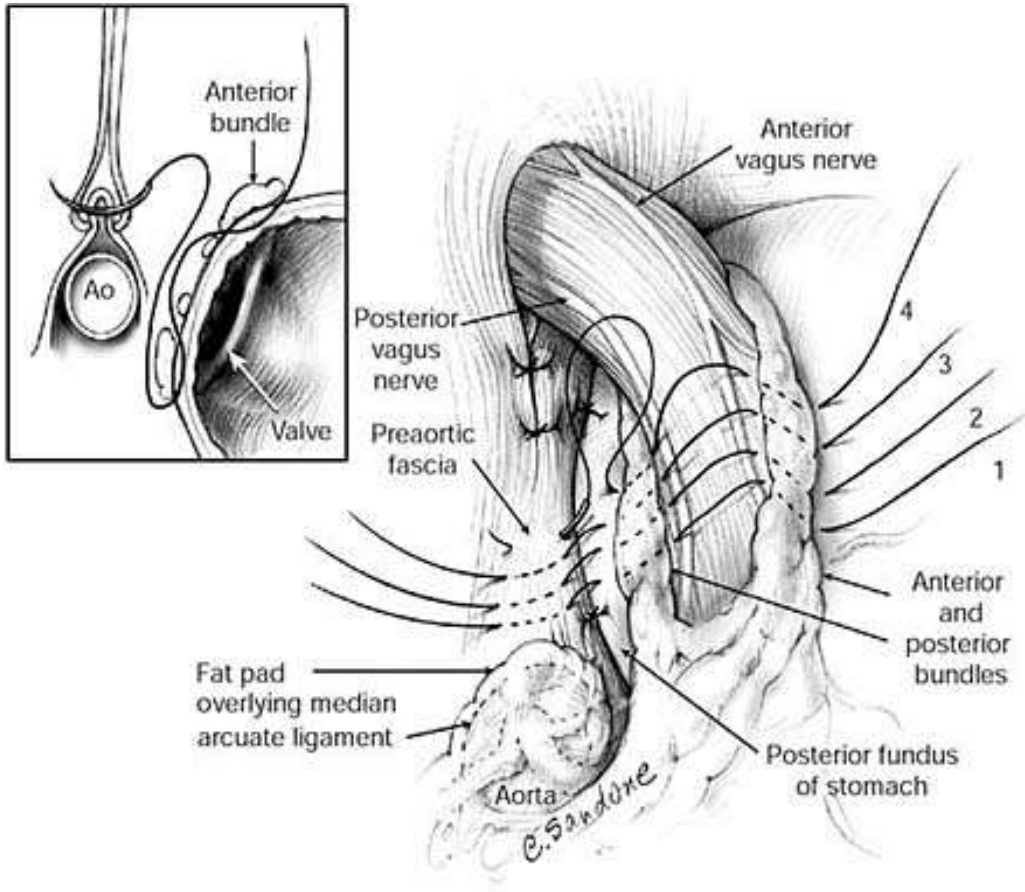
Hill Procedure – STAGED STRATEGY

OBES SURG (2016) 26:910–912
DOI 10.1007/s11695-016-2076-5

VIDEO SUBMISSION

Technique of Hill's Gastropexy Combined with Sleeve Gastrectomy for Patients with Morbid Obesity and Gastroesophageal Reflux Disease or Hiatal Hernia

Andrés Sánchez-Pernaute[1] · Pablo Talavera[1] · Elia Pérez-Aguirre[1] · Inmaculada Domínguez-Serrano[1] · Miguel Ángel Rubio[2] · Antonio Torres[1]



Ligamentum Teres Cardiopexy– STAGED STRATEGY

Obesity Surgery (2019) 29:3765–3768
https://doi.org/10.1007/s11695-019-03990-6

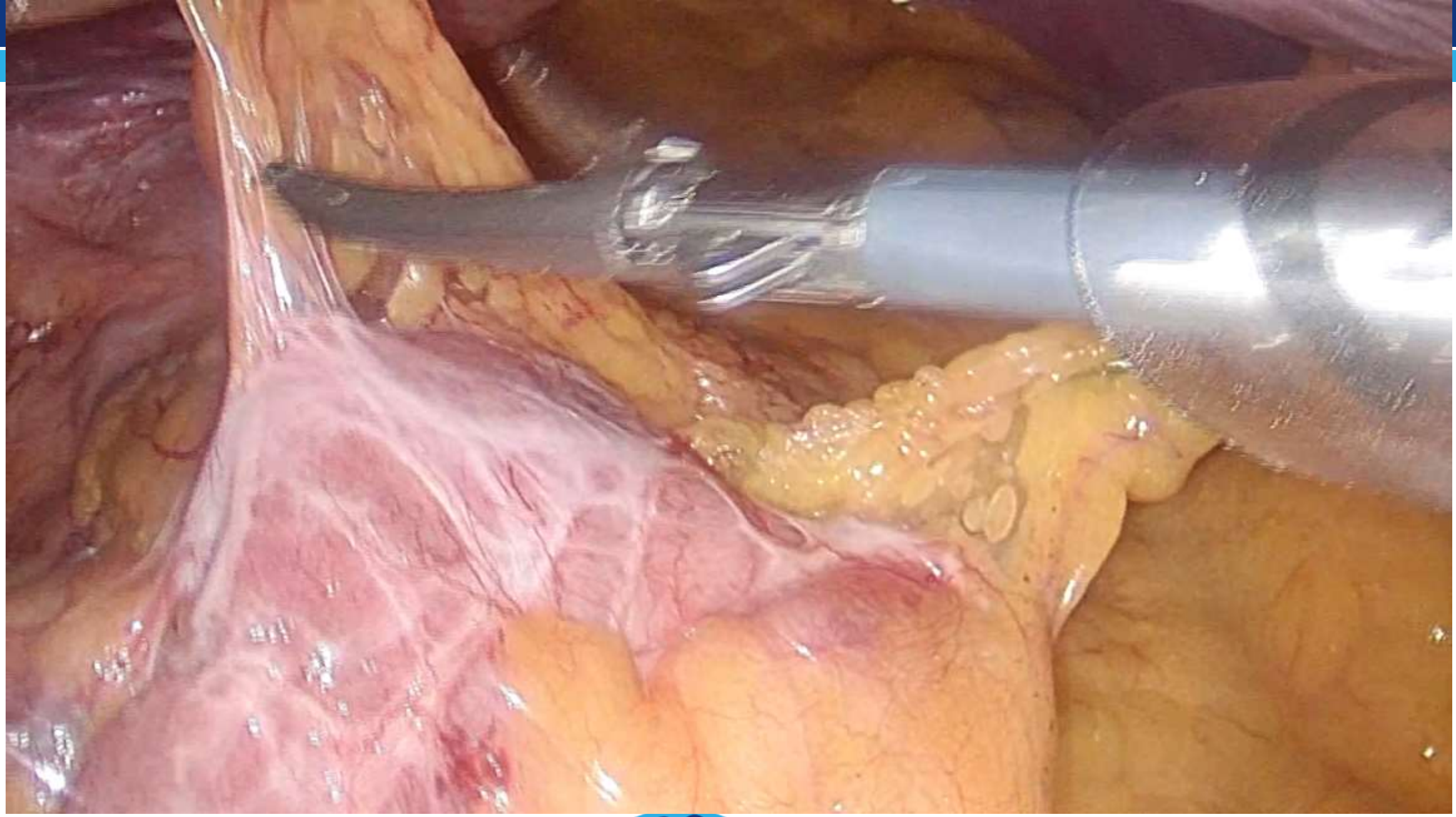
BRIEF COMMUNICATION

Ligamentum Teres Cardiopexy as a Late Alternative for Gastroesophageal Reflux Disease in a Patient with Previous Reversal of Gastric Bypass to Sleeve Gastrectomy and Hiatal Hernia Repair

Ramon Vilallonga[1] · Sergi Sanchez-Cordero[2] · Piero Alberti[3] · Ruth Blanco-Colino[3] · Amador Garcia Ruiz de Gordejuela[1] · Enric Caubet[1] · Oscar Gonzalez[1] · Renato Roriz-Silva[4] · Manel Armengol[3] · José Manuel Fort[1]

Fig. 3 The remainder of the ligamentum teres was fixed over itself with four to six stitches

1,20



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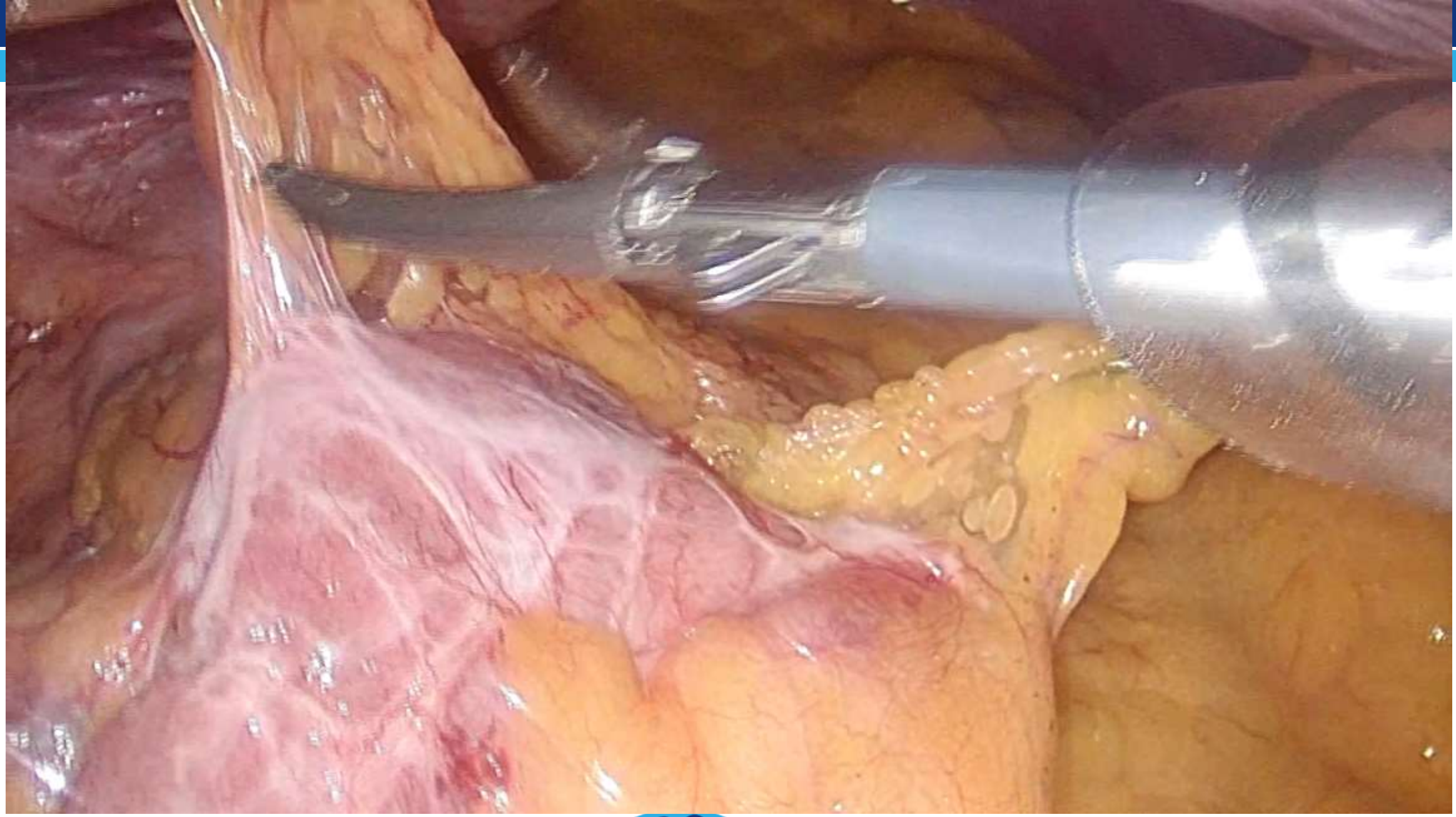


Obesity Surgery (2021) 31:4100–4106
https://doi.org/10.1007/s11695-021-05541-4

ORIGINAL CONTRIBUTIONS

Outcomes of Conversion from Sleeve Gastrectomy to Roux-en-Y Gastric Bypass Due to GERD—a Retrospective Analysis of 35 Patients

Anna Curell[1,2] · Marc Beisani[3] · Amador García Ruiz de Gordejuela[4] · Ramon Vilallonga[4] · Mireia Verdaguer Tremolosa[1] · Óscar González López[4] · Enric Caubet Busquet[4] · José Manuel Fort López-Barajas[4]

Ongoing review >90 patients

Table 1. Demographic data of patients before SG and before conversion to RYGB

	Before SG	Before Conversion to RYGB
Age (years)	47.9 (20-62)	48.6 (20-66)
BMI (kg/m²)	44.2 (35-53)	31.4 (19.7-43.4)
Hypertension	12 (37.5%)	7 (22.6%)
Type 2 Diabetes	4 (12.5%)	2 (6.5%)
Sleep Apnea	20 (62.5%)	3 (9.7%)
Dyslipidemia	13 (40.6%)	6 (19.4%)
H. pylori	6 (18.8%)	0

SG: Sleeve gastrectomy; RYGB: Roux-en-Y gastric bypass

GV A BPG PER SIMPTOMES PÈVIS.

Table 2. Patients' workup at different stages

	Before SG	After SG	After RYGB ± hiatoplasty
GERD symptoms	0/35 (0%)	35/35 (100%)	9/35 (26%)
GERD disease*	0/35 (0%)	22/35 (62.9%)	1/35 (2.9%)
Upper endoscopy			
- Hiatal hernia	9/28 (32%)	14/31 (45%)	5/23 (22%)
- Esophagitis ≥B	2/28 (7%)	12/31 (39%)	2/23 (9%)
- Barret's esophagus	0/28 (0%)	3/31 (10%)	0/23 (0%)
Barium swallow			
- Hiatal hernia	--	24/31 (77%)	7/14 (50%)
- Twisting	--	10/31 (32%)	--
- Stenosis	--	11/31 (35%)	--
- Fundus dilation	--	6/31 (19%)	--
pHmetry			
- DeMeester >16	--	20/20 (100%)	1/5 (20%)
Manometry			
- Hiatal hernia	--	5/24 (21%)	0/7 (0%)
- Hypotonic LES	--	17/24 (71%)	4/7 (57%)

SG: Sleeve gastrectomy; RYGB: Roux-en-Y gastric bypass; GERD: Gastroesophageal reflux disease; LES: Low esophageal sphincter; *GERD Disease defined by Lyon Criteria.

Not systematic review of the Hiatus

ELSEVIER

SURGERY FOR OBESITY AND RELATED DISEASES

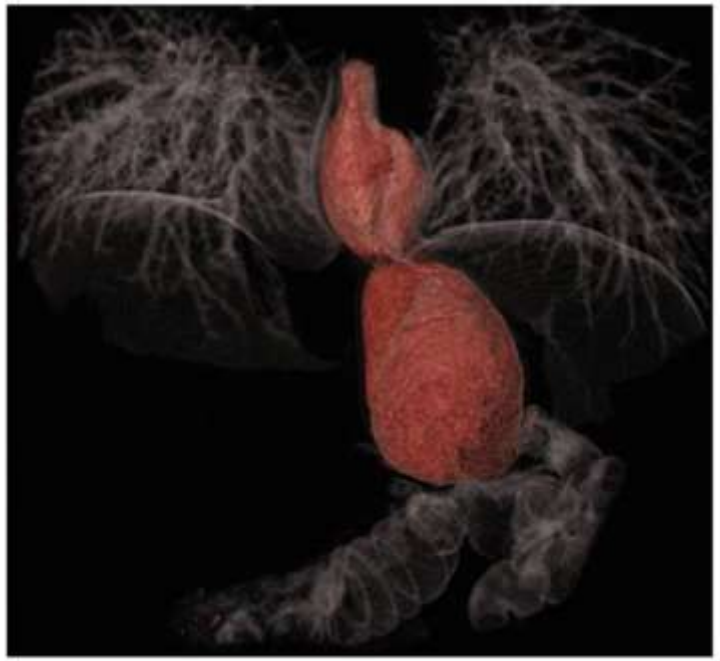
Surgery for Obesity and Related Diseases 19 (2023) 492–499

Original article

Intrathoracic pouch migration in one-anastomosis gastric bypass with and without hiatoplasty: A 3-dimensional-computed tomography volumetry study

Daniel M. Felsenreich, M.D., Ph.D.[a], Michael A. Arnoldner, M.D.[b], Lukas Wintersteller[a], Arpad Mrekva, M.D.[b], Julia Jedamzik, M.D.[a], Jakob Eichelter, M.D.[a], Felix B. Langer, M.D.[a], Gerhard Prager, M.D.[a,*]

[a]*Division of Visceral Surgery, Department of General Surgery, Medical University of Vienna, Vienna, Austria*
[b]*Division of General and Pediatric Radiology, Department of Biomedical Imaging and Image-Guided Therapy, Medical University of Vienna, Vienna,*



Intrathoracic pouch migration

GERD in patients undergoing OAGB without/with hiatoplasty

	All patients (n = 50)	OAGB without hiatoplasty (n = 25)	OAGB with hiatoplasty (n = 25)	*P* value
GERD (%)	14 (28%)	6 (24%)	8 (32%)	.538

OAGB = one-anastomosis gastric bypass; GERD = gastroesophageal reflux disease.

BARIATRIC SURGERY & GERD

OBES SURG (2016) 26:718–720
DOI 10.1007/s11695-016-2116-1

REVIEW ARTICLE

The Improvement of Gastroesophageal Reflux Disease and Barrett's after Bariatric Surgery

Tammy L. Kindel[1] · Dmitry Oleynikov[2]

About **31 %** of obese patients undergoing a laparoscopic Nissen fundoplication (LNF) or trans-thoracic Belsey-Mark IV had an operative recurrence compared to an **8 %** recurrence rate in over-weight patients (BMI 25–30) and **4.5 %** in normal patients

bariatric surgery has become the gold-standard treatment of morbidly obese patients with GERD

National study > 500 cases,
Obesity Class 1, NF versus GBP

Obesity Surgery (2020) 30:3135–3153
https://doi.org/10.1007/s11695-020-04720-z

REVIEW

IFSO Position Statement on the Role of Esophago-Gastro-Duodenal Endoscopy Prior to and after Bariatric and Metabolic Surgery Procedures

Wendy A. Brown[1] · Yazmin Johari Halim Shah[1] · George Balalis[1] · Ahmad Bashir[1] · Almino Ramos[1] · Lilian Kow[1] · Miguel Herrera[1] · Scott Shikora[1] · Guilherme M. Campos[1] · Jacques Himpens[1] · Kelvin Higa[1]

ELSEVIER

Surgery for Obesity and Related Diseases 17 (2021) 837–847

SURGERY FOR OBESITY AND RELATED DISEASES

ASMBS Guidelines/Statements

ASMBS position statement on the rationale for performance of upper gastrointestinal endoscopy before and after metabolic and bariatric surgery

Guilherme M. Campos, M.D., Ph.D., F.A.S.M.B.S., F.A.C.S.[a,*], Guilherme S. Mazzini, M.D., Ph.D.[a], Maria S. Altieri, M.D., M.S.[b], Salvatore Docimo, Jr., D.O., F.A.S.M.B.S., F.A.C.S.[c], Eric J. DeMaria, M.D., F.A.S.M.B.S., F.A.C.S.[b], Ann M. Rogers, M.D., F.A.S.M.B.S., F.A.C.S.[d], On behalf of the Clinical Issues Committee of the American Society for Metabolic and Bariatric Surgery

[a]*Division of Bariatric and Gastrointestinal Surgery, Department of Surgery, Virginia Commonwealth University, Richmond, Virginia*
[b]*Division of General and Specialty Surgery, Department of Surgery, East Carolina University, Greenville, North Carolina*
[c]*Division of General and Gastrointestinal Surgery, Stony Brook University, Stony Brook, New York*
[d]*Division of Minimally Invasive Surgery/Bariatrics, The Pennsylvania State University, Hershey, Pennsylvania*

Received 10 March 2021; accepted 13 March 2021

BARIATRIC SURGERY, ENDOSCOPY & GERD

Memorandum of Understanding
Between and Among
The Society of American Gastrointestinal and Endoscopic Surgeons;
American Society for Gastrointestinal Endoscopy
American Society for Metabolic and Bariatric Surgery
European Association of Endoscopic Surgery
Society for Surgery of the Alimentary Tract
Society of Thoracic Surgeons

This Memorandum of Understanding (MOU) is hereby made and entered into by, between, and among the Society of American Gastrointestinal and Endoscopic Surgeons ("SAGES"), American Society for Gastrointestinal Endoscopy ("ASGE"), American Society for Metabolic and Bariatric Surgery ("ASMBS"), European Association of Endoscopic Surgery ("EAES"), Society for Surgery of the Alimentary Tract ("SSAT"), and Society of Thoracic Surgeons ("STS") (collectively referred to as "the Parties").

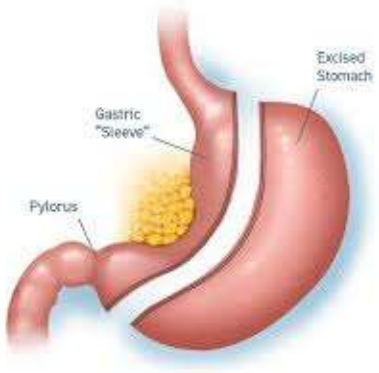
The purpose of this MOU is to document a desire on the part of the signatories to jointly organize and conduct a consensus development conference on medical, endoscopic, and surgical management and appropriate indications for gastroesophageal reflux disease (GERD).

Dr. Vilallonga (EAES)
Dra. Rita Rodriguez (EAES)

Before surgery.... Evaluate the patient:

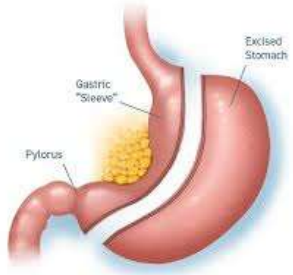
STRATEGY

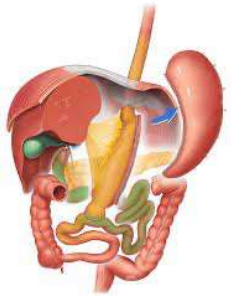
Antecolic Limb



Follow up necessary and specially for **SG**

Hiatal Hernia ??





Symptoms study, weight and revision of previous technique
Routine endoscopy after SG*

TEGD (Pouch herniation, stenosis, candy cane..) FGS (Esophagitis, stenosis..)

Renastomosis
Pouch trimmming
Hiatoplasty
Re-hiatoplasty
Funduplicature

Hill Pexy
Teres cardiopexy

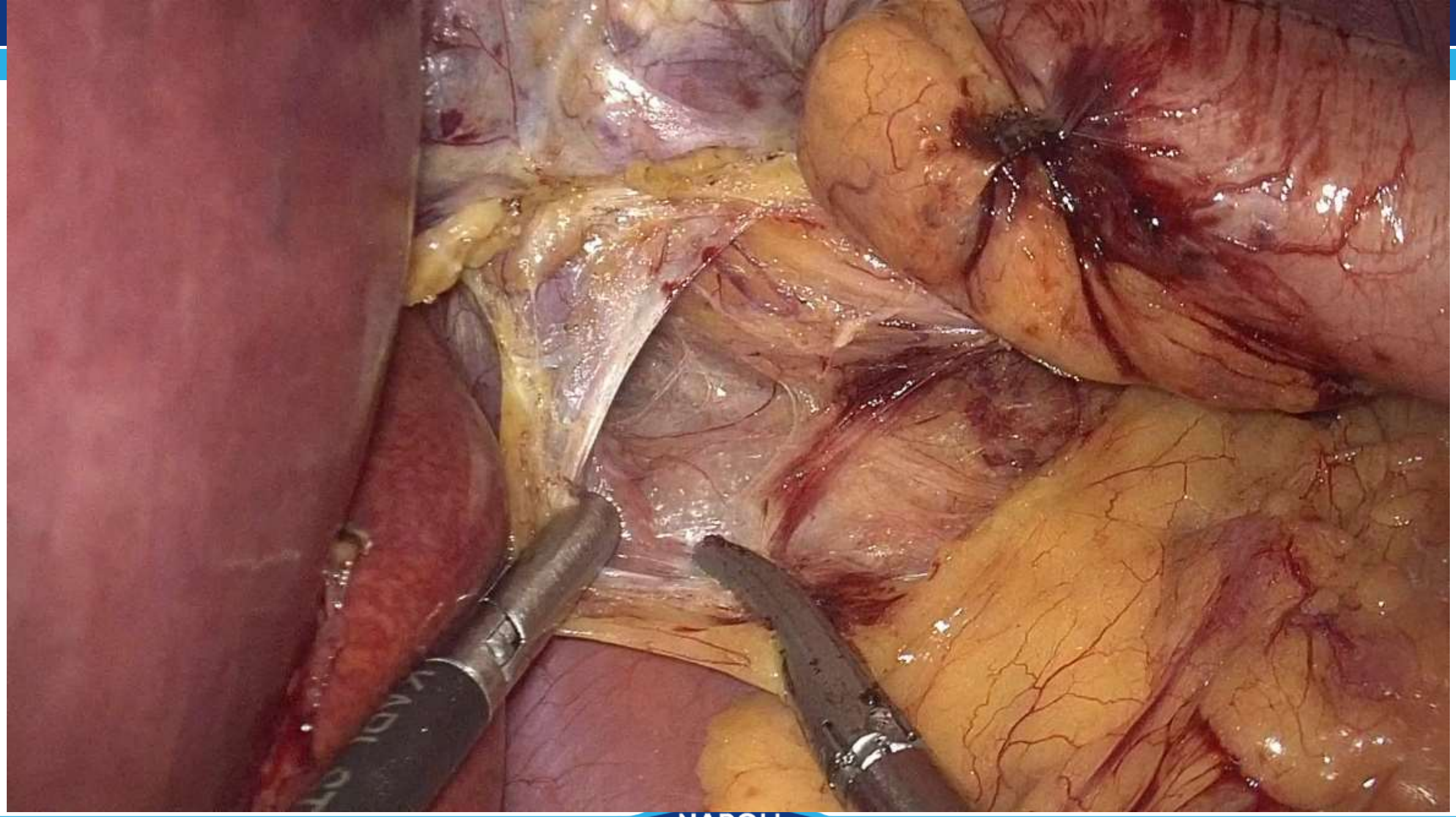
TEGD (pouch herniation, stenosis…)
FGS (Esphoagitis, stenosis anasto.
pHmetry i Manometry

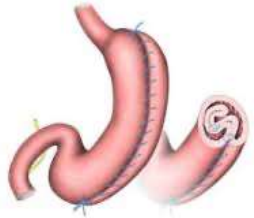
Corrective procedure – Conversion procedure

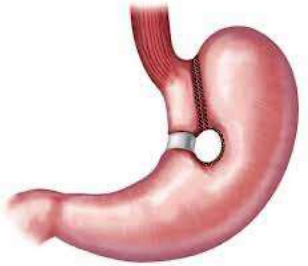
Hiatoplasty
+ Hill pexy
+ Teres Cardiopexy
+/- Resleeve (?)

Conversion SG to GBP (+/- Resizing)
Conversion of SADI-S to GBP
+ Hiatoplasty

Hill pexy
Teres Cardiopexy







Symptoms study, weight and revision of previous technique
Routine endoscopy after SG*

TEGD (stenosis, CC…)
FGS (Esophagitis, stenosis..)

Corrective procedure
Conversion procedure

Remove band
Conversion to GBP (SG?)

TEGD (pouch herniation, stenossi..)
FGS (Esophagitis, stenosis anasto.
pHmetry i Manometry (reflux type)

Hiatoplasty
+ Hill pexy
+ Teres Cardiopexy

Conversion to GBP

+ Hiatoplasty

“always” review your Hiatal Hernia ??

NAPOLI 2023

1’20

Robotic Conversion of One Anastomosis Gastric Bypass to Roux-en-y Gastric Bypass due to Gastroesophageal Reflux Reluctant to Medical Treatment

OAGB

1’20

Robotic Conversion of One Anastomosis Gastric Bypass to Roux-en-y Gastric Bypass due to Gastroesophageal Reflux Reluctant to Medical Treatment

OAGB

Conclusions

- Revisional surgery accounts for 15-20%.
- HH, GERD atipical symptoms after specially SG and less often GBP
- Accurate primary surgery and also consider the primary hiatal hernia repair
- Need to investigate the GERD and the anatomy at the revisonal surgery
- **Repair a Hiatal hernia always and comsider other alternatives.**