



Large Hiatal Hernia in the Bariatric Patient

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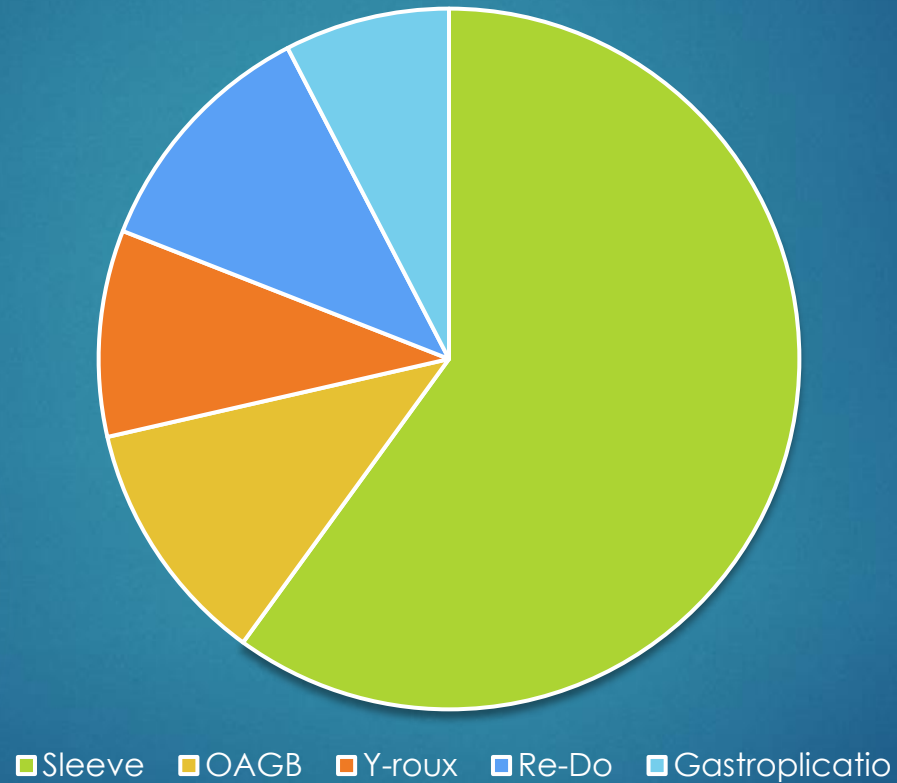


Referenzzentrum
für Hernienchirurgie



No disclosures

Mix of Procedures



Bariatric surgery since 1994, approx. 4800 procedures

What are the options ?

(Large Hernia, planned bariatric intervention)

- ▶ Do not repair the hernia, but do a bariatric operation
- ▶ Do not do a sleeve resection, but repair the hernia
- ▶ Be a hero
- ▶ And do both !



Gastric Band Removal in Revisional Bariatric Surgery, One-Step Versus Two-Step: a Systematic Review and Meta-analysis

Jerry T Dang¹, Noah J Switzer², Jeremy Wu³, Richdeep S Gill⁴, Xinzhe Shi⁵, J r mie Thereaux⁶, Daniel W Birch⁵, Christopher de Gara⁵, Shahzeer Karmali⁵

A systematic and comprehensive search of the literature was conducted. Included studies directly compared one-step and two-step revisional surgery. Eleven studies were included with 1370 patients. Meta-analysis found comparable rates of complications, morbidity, and mortality between one-step and two-step revisions for both RYGB and SG groups. This suggests that immediate or delayed revisional bariatric surgeries are both safe options for LAGB revisions.

Let`s define large Hiatal Hernia

Laparoscopic antireflux surgery: tailoring the hiatal closure to the size of hiatal surface area

F A Granderath ¹, U M Schweiger, R Pointner

Affiliations + expand

PMID: 17103275 DOI: 10.1007/s00464-006-9041-7

Mean calculated HSA in all patients was 5.092 cm². Thirty-two patients (58.2%) with a **smaller hiatal defect (mean HSA = 3.859 cm²)** underwent hiatal closure with simple sutures (mean number of sutures: = 2.0). In 12 patients (21.8%) with a mean HSA of **7.148 cm²**, hiatal closure was performed with a 1 x 3-cm polypropylene mesh in addition to simple sutures. Five patients with a mean HSA of **6.703 cm²** underwent hiatal closure with Parietex mesh, and in the remaining six patients, who had a mean HSA of **8.483 cm²**, the hiatus was closed using BARD Crurasoft mesh.

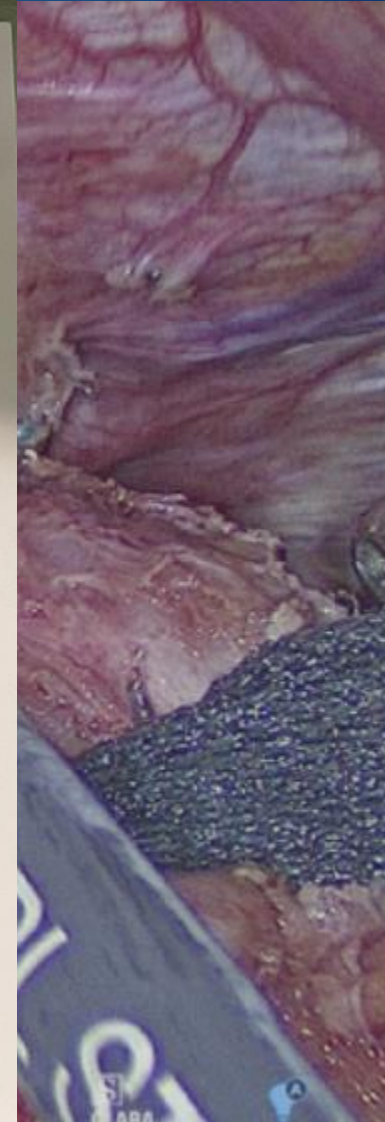
“Hiatal surface” Messung

Hiatal Surface Area

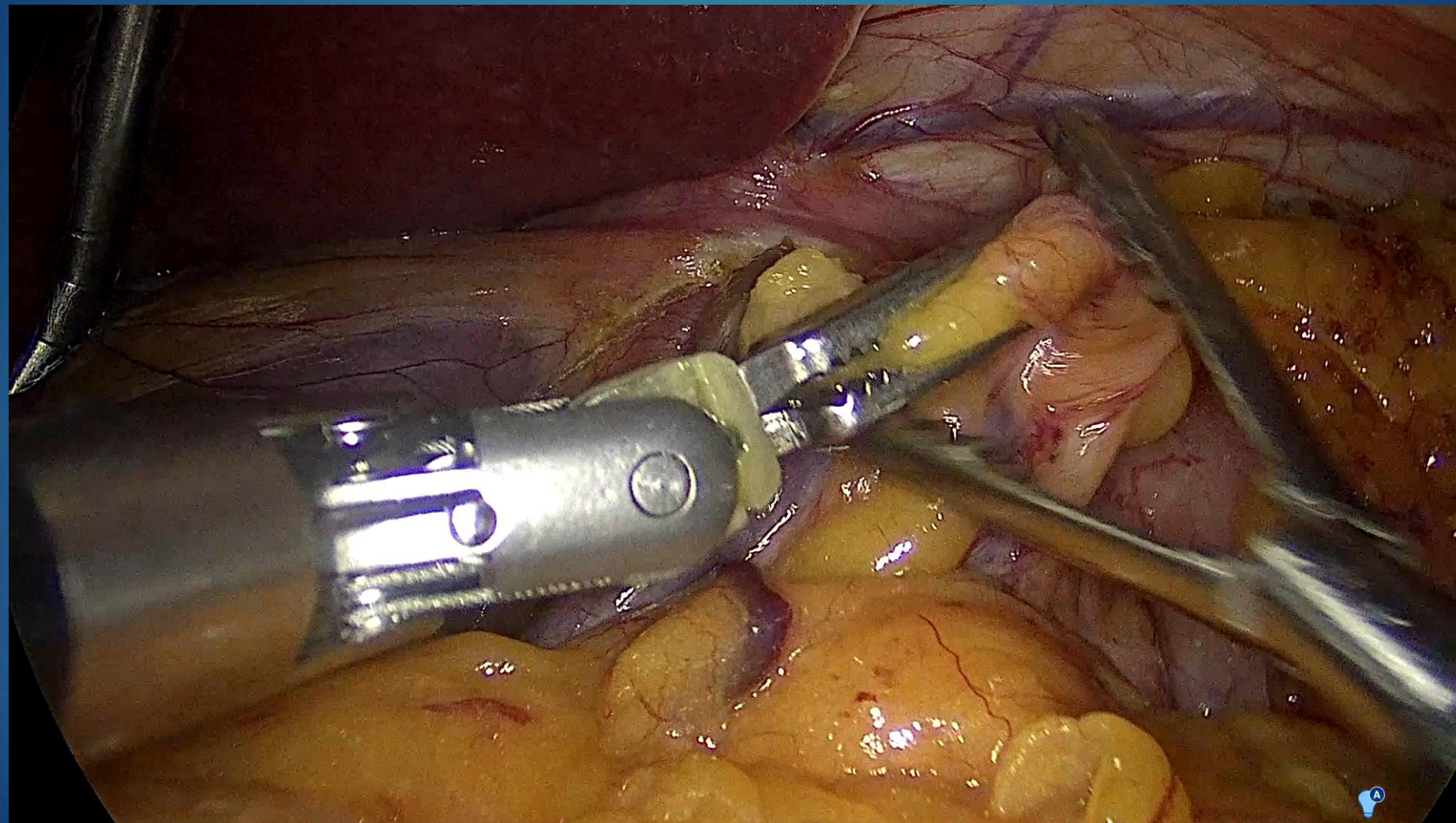
Width of defect

	1	1,5	2	2,5	3	3,5	4	4,5	5	5,5	6	6,5	7	7,5	8
1,00	0,52	0,85	1,57												
1,50	0,76	1,18	1,64	2,22	3,53										
2,00	1,01	1,54	2,09	2,70	3,39	4,26	6,28								
2,50	1,26	1,90	2,57	3,27	4,02	4,85	5,80	7,00	9,82						
3,00	1,51	2,27	3,06	3,87	4,71	5,61	6,57	7,63	8,87	10,44	14,14				
3,50	1,76	2,65	3,55	4,47	5,43	6,41	7,45	8,55	9,75	11,07	12,61	14,58	19,24		
4,00	2,01	3,02	4,04	5,09	6,15	7,25	8,38	9,56	10,80	12,13	13,57	15,17	17,05	19,45	25,13
4,50	2,25	3,39	4,54	5,70	6,88	8,09	9,33	10,60	11,93	13,31	14,78	16,34	18,05	19,95	22,17
5,00	2,50	3,76	5,03	6,32	7,62	8,94	10,29	11,67	13,09	14,56	16,09	17,69	19,38	21,20	23,18
5,50	2,75	4,14	5,53	6,94	8,36	9,80	11,26	12,75	14,27	15,84	17,45	19,12	20,87	22,69	24,63
6,00	3,00	4,51	6,03	7,56	9,10	10,65	12,23	13,84	15,47	17,14	18,85	20,61	22,42	24,30	26,27
6,50	3,25	4,89	6,53	8,18	9,84	11,52	13,21	14,93	16,68	18,46	20,27	22,12	24,02	25,98	28,01
7,00	3,50	5,26	7,02	8,80	10,58	12,38	14,20	16,03	17,90	19,78	21,70	23,66	25,66	27,70	29,80
7,50	3,75	5,63	7,52	9,42	11,33	13,25	15,18	17,14	19,12	21,12	23,15	25,21	27,31	29,45	31,64
8,00	4,00	6,01	8,02	10,04	12,07	14,11	16,17	18,25	20,34	22,46	24,60	26,77	28,98	31,22	33,51
8,50	4,25	6,38	8,52	10,66	12,82	14,98	17,16	19,36	21,57	23,80	26,06	28,35	30,66	33,01	35,40
9,00	4,50	6,76	9,02	11,29	13,56	15,85	18,15	20,47	22,80	25,15	27,53	29,93	32,35	34,81	37,30
9,50	4,75	7,13	9,52	11,91	14,31	16,72	19,14	21,58	24,03	26,50	29,00	31,51	34,05	36,62	39,22
10,00	5,00	7,51	10,02	12,53	15,06	17,59	20,14	22,69	25,27	27,86	30,47	33,10	35,76	38,44	41,15

Length of defect



Giant hernia with BMI 43, HSA 12 cm²



Five Year Follow-up of a Randomized Controlled Trial of Laparoscopic Repair of Very Large Hiatus Hernia With Sutures Versus Absorbable Versus Nonabsorbable Mesh

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A recurrent hernia (any size) was identified in 39.3% after suture repair, 56.7% – absorbable mesh, and 42.9% – nonabsorbable mesh ($P < 0.371$). Clinical outcomes were similar at 5 years, except chest pain, diarrhea, and bloat symptoms which were more common after repair with absorbable mesh

TABLE 1. Radiology and

Barium Meal Radiology

Studied

Hiatus hernia – any size

Hiatus hernia – 2 cm+

Endoscopy

Studied

Hiatus hernia – any size

Hiatus hernia – 2 cm+

Barium Meal and Endoscopy

Underwent Barium meal or endoscopy

Hiatus hernia – any size (Barium meal outcome prioritized)

Hiatus hernia – 2 cm+ (Barium meal outcome prioritized)

n = 20 (52.6%)

8 (40.0%)

1 (2.5%)

n = 28 (73.7%)

11 (39.3%)

1 (3.6%)

n = 26 (65.0%)

15 (57.7%)

6 (23.1%)

n = 30 (75.0%)

17 (56.7%)

4 (13.3%)

n = 20 (48.8%)

8 (40.0%)

0 (0.0%)

n = 27 (65.9%)

15 (55.6%)

4 (14.8%)

n = 28 (68.3%)

12 (42.9%)

4 (14.3%)

TiMesh

P-value

0.564

0.377

0.443

0.236

0.371

0.347

All data expressed as n (%).

> Minerva Surg. 2021 Feb;76(1):33-42. doi: 10.23736/S2724-5691.20.08503-X. Epub 2020 Oct 2.

Concomitant hiatal hernia repair during bariatric surgery: does the reinforcement make the difference?

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Affiliations + expand

PMID: 33006451 DOI: 10.23736/S2724-5691.20.08503-X

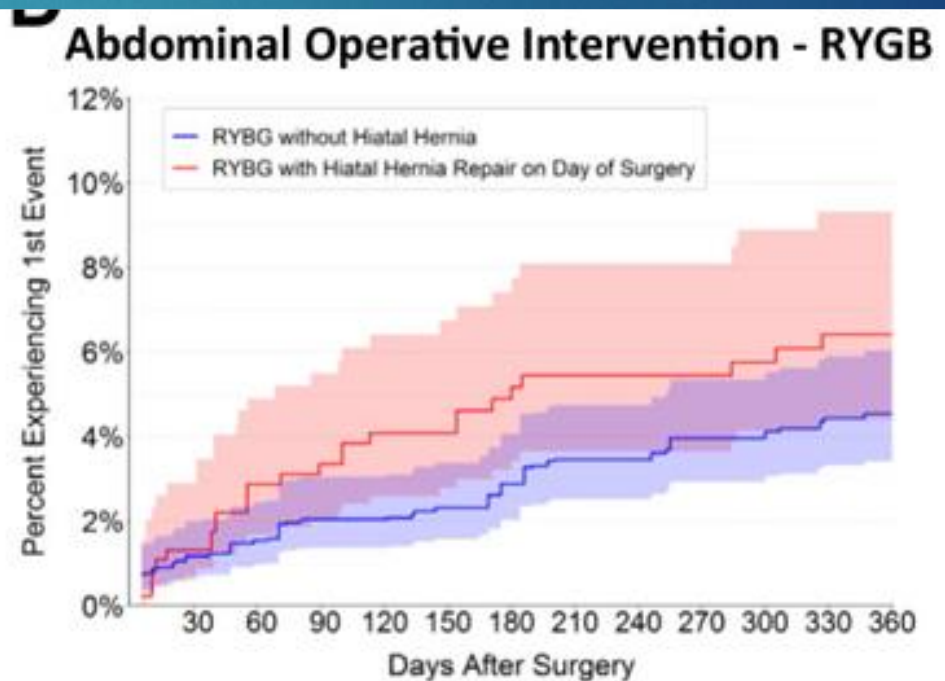
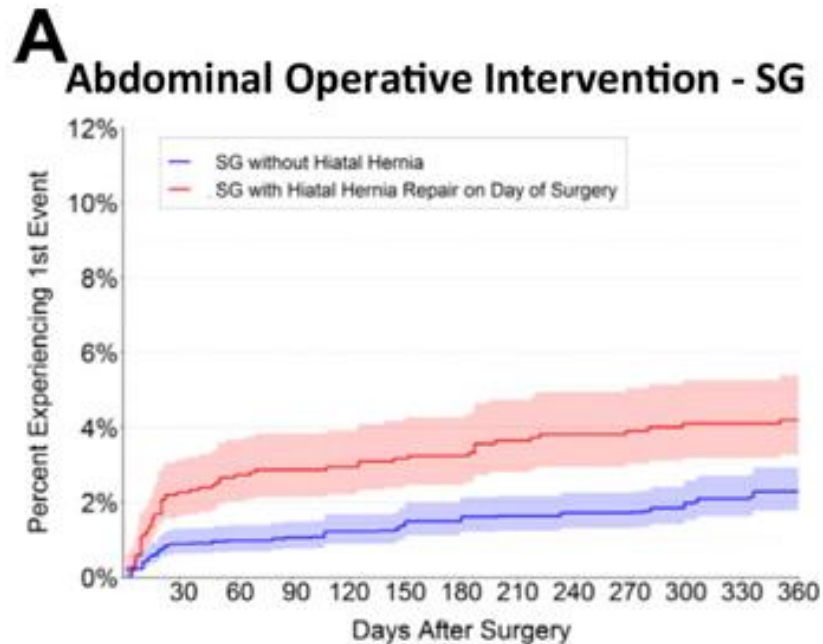
A total of 250 patients undergone bariatric surgery and concomitant HHR (13%). Simple PC (group A, 151 patients) was performed during 130 LSG, 5 re-sleeves and 16 gastric bypasses; mean BMI 43.4 ± 5.8 kg/m², HSA mean size 3.4 ± 2 cm². Reinforced PC (group B) was performed in 99 cases:

Failure of hiatal reconstruction:

12 cases after suture only (8%), 4 with reinforcement (4%)

Concurrent hiatal hernia repair and bariatric surgery: outcomes after sleeve gastrectomy and Roux-en-Y gastric bypass

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> Am Surg. 2023 Feb;89(2):293-299. doi: 10.1177/00031348211023450. Epub 2021 May 31.

Outcomes of Bariatric Surgery With Concomitant Hiatal Hernia Repair Using an Absorbable Tissue Matrix

Michael W Love¹, Daniel F Verna¹, Shanu N Kothari¹, John D Scott¹

Results: A total of 420 patients were reviewed. Hiatal BTM reinforcement, recurrence, and postoperative proton pump inhibitor use were reported by type of operation. Recurrence was higher in gastric bypass patients who underwent hiatal hernia repair with suture cruroplasty alone vs. those who also underwent hiatal BTM reinforcement (7.1% vs. 3.7%, $P = .52$) and significantly higher in gastric sleeve patients who underwent hiatal hernia repair with suture cruroplasty alone vs. those who also underwent hiatal BTM reinforcement (7.1% vs. .5%, $P = .01$). No patient required reoperation for hiatal hernia recurrence.

Large Hiatal Hernia Repair with Urinary Bladder Matrix Graft Reinforcement and Concomitant Sleeve Gastrectomy

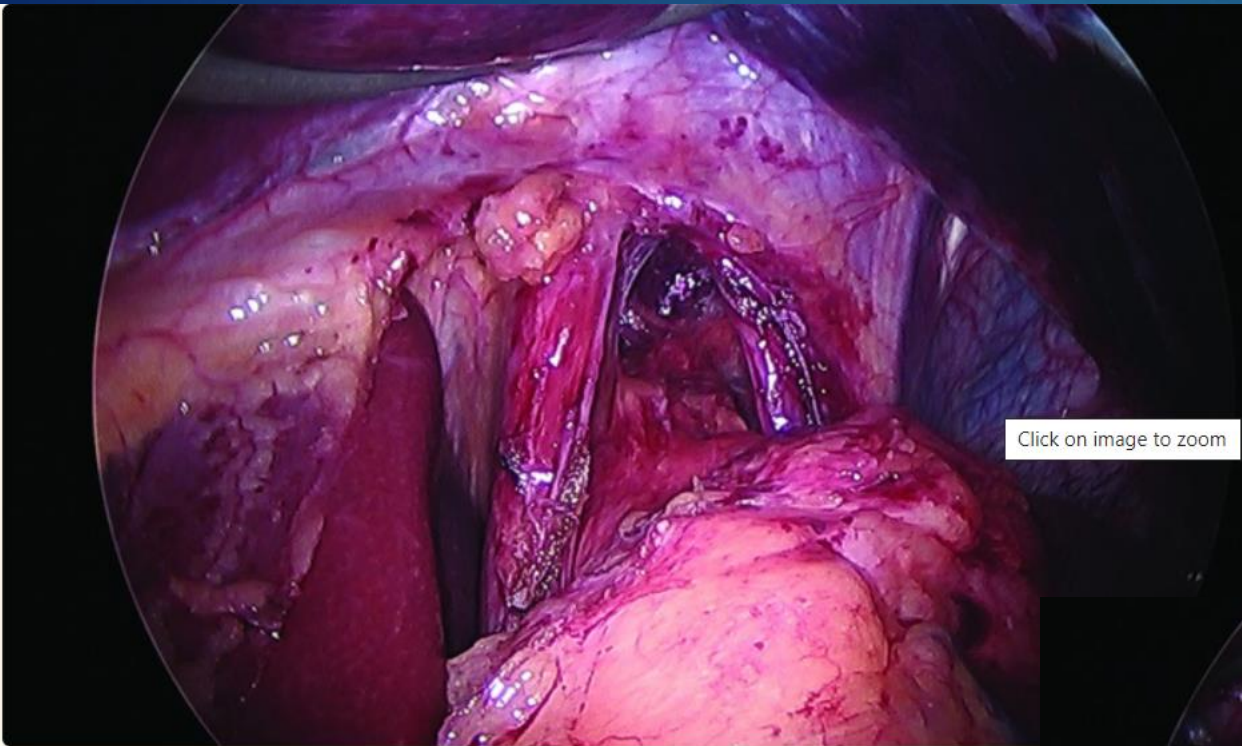
[Kent C. Sasse](#), MD, MPH, FACS, FACRS, [✉] [Jonathan Gevorkian](#), MS, BS, [Rachel Lambin](#), BS, [Rami Afshar](#), PA-C, [Amv Gardner](#), PA-C, [Aradhana Mehta](#), MPH, BS, [John-Henry Lambin](#), BS, and [Austin Shinaqawa](#), BS

Methods:

This study reports the results of a retrospective chart review of 32 cases of large hiatal hernia repair utilizing both primary crural repair and UBM reinforcement concomitant with laparoscopic sleeve gastrectomy by a single surgeon. Hernia diameter averaged 6 cm (range 4–9 cm). After an average of 1 year followup, 30 patients were assessed for subjective symptoms of gastroesophageal reflux (GERD) using the Gastroesophageal Reflux Disease-Health Related Quality of Life (GERD-HRQL) score. Twenty patients were evaluated with either upper gastrointestinal (GI) series, endoscopy, or both.

Results:

Each repair was successful and completed laparoscopically concomitant with sleeve gastrectomy. Anterior and posterior cruroplasty was performed using interrupted 0-Ethibond suture using the Endostitch device. The UBM graft exhibited favorable handling characteristics placed as a keyhole geometry sutured to the crura with absorbable suture. A careful chart review was undertaken to assess for complications. There have been no reoperations. After a median of 12 months (range, 4–27 months) of followup, an assessment of recurrences or long-term complications was completed. Median GERD-HRQL score was 6, with a range of 0 to 64 (of possible 75), indicating very low-level reflux symptomatology. Follow-up upper GI radiographs or endoscopy were obtained in 20 cases and show intact repairs.

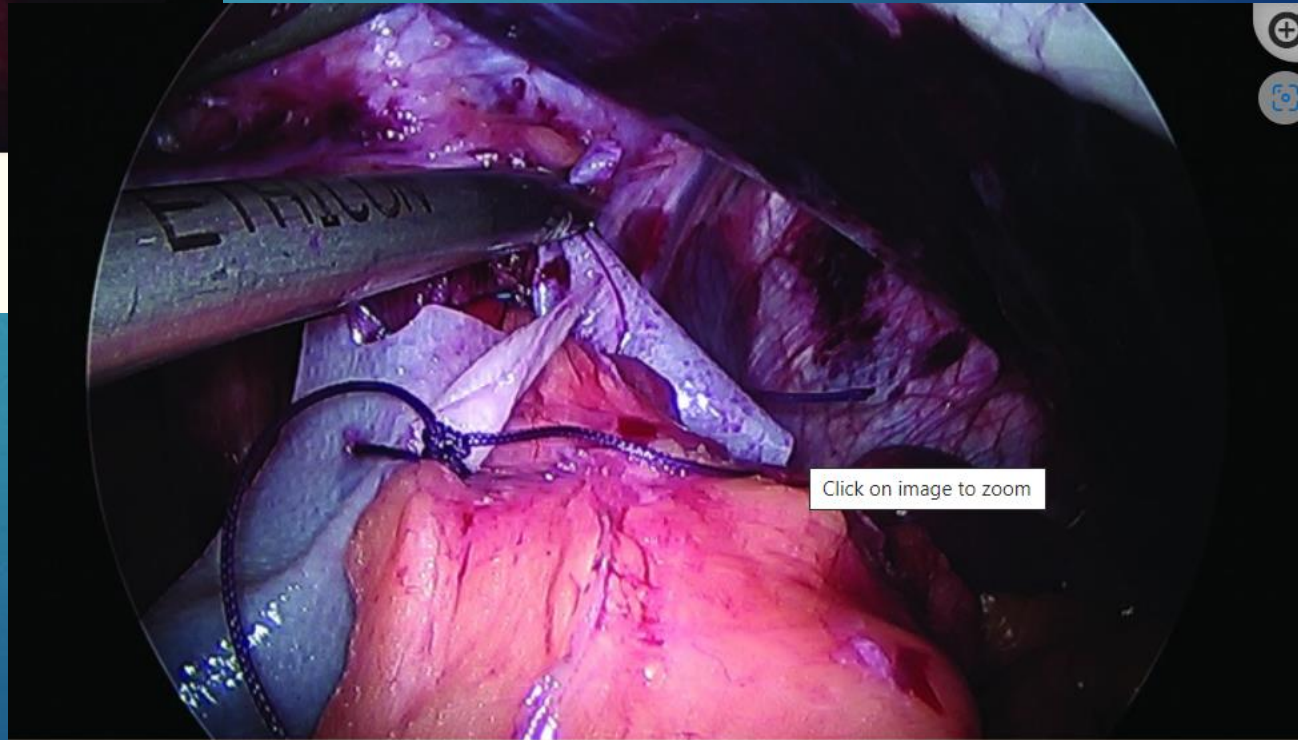


Click on image to zoom



Figure 1.

Hiatal hernia defect exposed and 2-3 cm intra-abdominal esophagus freed.



Click on image to zoom



➤ [Surgery](#). 2015 Oct;158(4):911-6; discussion 916-8. doi: 10.1016/j.surg.2015.06.036. Epub 2015 Aug 1.

The incidence of hiatal hernia and technical feasibility of repair during bariatric surgery

Mena Boules¹, Ricard Corcelles², Alfredo D Gueron¹, Matthew Dong¹, Christopher R Daigle³, Kevin El-Hayek⁴, Phillip R Schauer³, Stacy A Brethauer³, John Rodriguez⁵, Matthew Kroh⁶

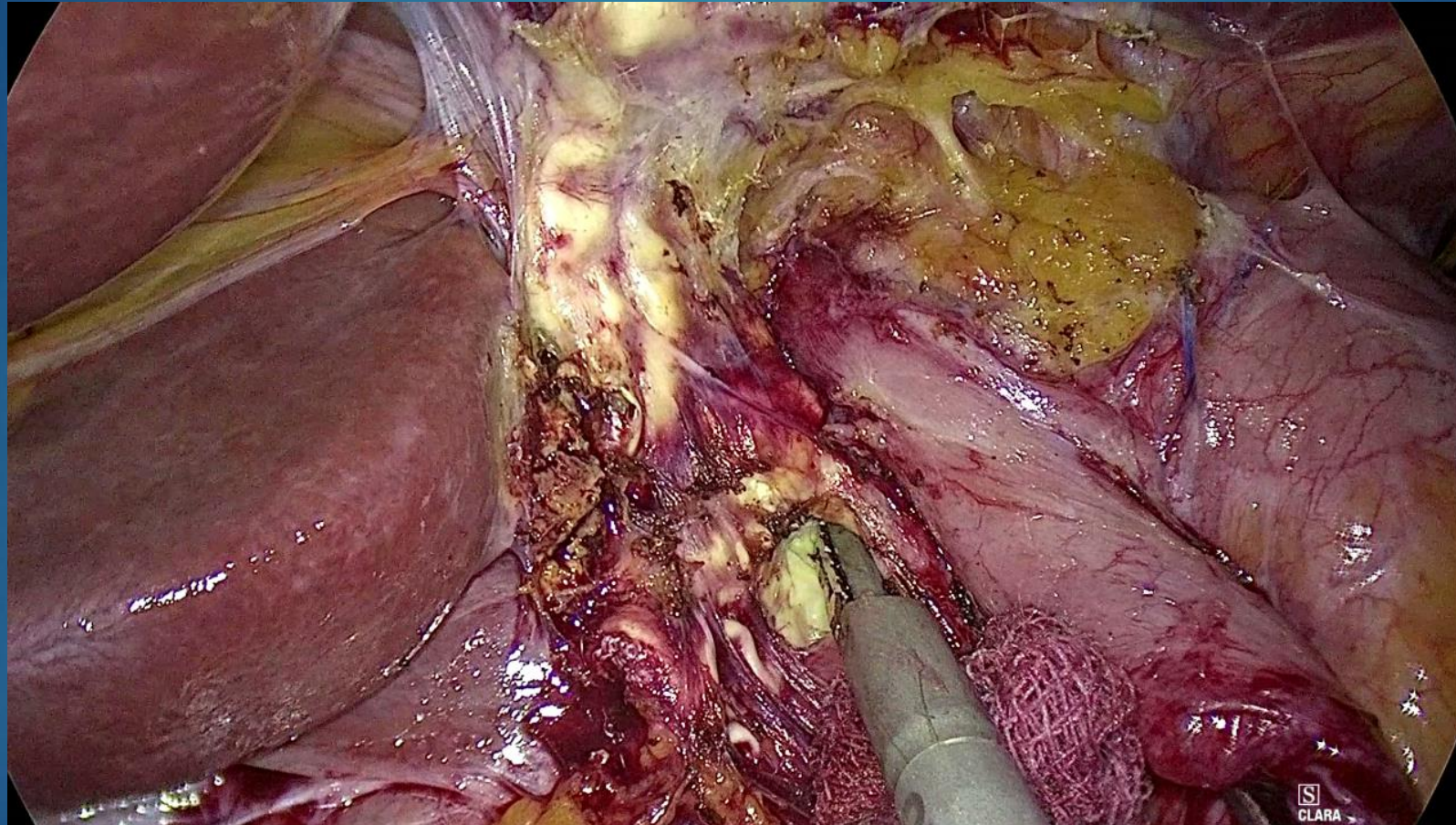
- ▶ 83 patients operated concomitantly
- ▶ 61 y-roux bypass, 22 sleeve resections
- ▶ 61% of the hernias were diagnosed intraoperatively
- ▶ Only 7 mesh placements, all received hiatal reconstruction

- ▶ At 12 month PPI Medication was reduced from 84% to 51%

Sleeve-Toupet



Permanent mesh - Revision



What can go wrong ?

Near Death Experience | Strangulated Hiatal Hernia & Ruptured Esophagus



8:33 / 10:44

Video player controls: play, next, volume, progress bar, settings, full screen.

The video shows a man in a blue shirt with his hands clasped over his chest, likely demonstrating the symptoms of a strangulated hiatal hernia and ruptured esophagus. The video player interface includes a title, a progress bar at 8:33 / 10:44, and standard playback controls.

My Conclusions

- ▶ The outcome of “giant hiatal hernia” repair is unsatisfactory as is it is and should only be burdened with a concomitant bariatric procedure in selected cases where the anatomy and the tissue quality does allow it
- ▶ “Two stage approach” is in all other situations my approach
- ▶ The primary operation is directed towards the main clinical problem
- ▶ Augmentation is recommended, however without permanent implants
- ▶ Concomitant closure of a small symptomatic hiatal hernia is supported by the data.

Thank you for your attention!



Evangelina Krebs Z

