

# Concomitant hiatal hernia repair with sleeve gastrectomy: outcomes

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# INTRODUCTION



- SG is known to be associated with de-novo occurrence of GERD.
- It has been observed that up to **10-30%** of SG patients will develop new onset GERD.
- However, this clinical practice remains unclear, as some patients with GERD will actually improve their symptoms after a SG.

Flølo TN, Andersen JR, Kolotkin RL, et al. Five-year out- comes after vertical sleeve gastrectomy for obesity: a pro- spective cohort study. *Obes Surg.* 2020;27(8):1944–1951.

There is an emerging consensus to look for a hiatal hernia at the time of SG and repair it if present.

Results from the last International Consensus Conference on Sleeve Gastrectomy indicated that **84% of bariatric surgeons** look for HH and think it should be repaired if found.

Kichler K, Rosenthal RJ, Demaria E, Higa K. Reoperative surgery for nonresponders and complicated sleeve gastrectomy operations in patients with severe obesity. an international expert panel consensus statement to define best practice guidelines. Surg Obes Relat Dis. 2019;15(2):173–186.h

In a series of **SG with and without HH repair**, a total of 97 patients who received SG+HH repair; 55 of them were diagnosed with HH intra-operatively, despite a full work up pre-operatively.


This indicates the need for adequate inspection of the hiatus at the beginning of the operation.

Soricelli E, Iossa A, Casella G, Abbatini F, Cali B, Basso N. Sleeve gastrectomy and crural repair in obese patients with gastroesophageal reflux disease and/or hiatal hernia. *Surg Obes Relat Dis.* 2013;9(3):356–361.



The aim of this work is to determine the rate of patients with HH, **incidentally** discovered intra-operatively and required HH repair during SG.

And also to share the outcomes as regards to operative time, postoperative GERD and hospital stay

An aerial photograph of a coastal city. In the foreground, a wide, multi-lane road curves along the coast. To the left of the road is a large, modern building with a curved, white, ribbed facade. Behind it is a smaller building with a distinctive, angular, white roof. The city extends inland with various buildings and structures. The sea is visible on the right side of the image, with waves breaking near the shore.

**PATIENTS &  
METHODS**



- RETROSPECTIVE STUDY (1 YEAR)
- 60 COSECUTIVE CASES OF SLEEVE GSTRECTOMY
- FOLLOW-UP 1 year

# Preoperative assessment of SG patients

GERD-HRQL questionnaire

GERD-Health Related Quality of Life Questionnaire (GERD-HRQL)

Instructions: \_\_\_\_\_ Patient ID: \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

0 = Not at all    1 = Often    2 = All the time long!    \_\_\_\_\_ How many months

Scale

0 = No symptoms

1 = Symptoms noticeable but not bothersome

2 = Symptoms noticeable and bothersome but not every day

3 = Symptoms bothersome every day

4 = Symptoms affect daily activities

5 = Symptoms are interfering to do daily activities

Please check the box in the right of each question which best describes your experience over the past 2 weeks

|                                                              |   |   |   |   |   |   |
|--------------------------------------------------------------|---|---|---|---|---|---|
| 1. How bad is the heartburn?                                 | 0 | 1 | 2 | 3 | 4 | 5 |
| 2. Heartburn when lying down?                                | 0 | 1 | 2 | 3 | 4 | 5 |
| 3. Heartburn when standing up?                               | 0 | 1 | 2 | 3 | 4 | 5 |
| 4. Heartburn after meals?                                    | 0 | 1 | 2 | 3 | 4 | 5 |
| 5. Does heartburn change your diet?                          | 0 | 1 | 2 | 3 | 4 | 5 |
| 6. Does heartburn make you feel sleep?                       | 0 | 1 | 2 | 3 | 4 | 5 |
| 7. Do you have difficulty swallowing?                        | 0 | 1 | 2 | 3 | 4 | 5 |
| 8. Do you have pain with swallowing?                         | 0 | 1 | 2 | 3 | 4 | 5 |
| 9. If you take medication, does this affect your daily life? | 0 | 1 | 2 | 3 | 4 | 5 |
| 10. How bad is the regurgitation?                            | 0 | 1 | 2 | 3 | 4 | 5 |
| 11. Regurgitation when lying down?                           | 0 | 1 | 2 | 3 | 4 | 5 |

Barium meal +/-

upper GI endoscopy

If +ve for HH or significant GERD, discussion with the patient to shift to RYGB.

If -ve → I go for sleeve

So, all 60 patients were either asymptomatic or had only mild GERD symptoms with negative findings in barium meal or endoscopy before operation.

# Intraoperatively

- **8 cases** (13%) had incidentally discovered HH > 2 cm, with part of gastric fundus sliding upwards → SG+HH repair
- **5 cases** (8%) had only wide hiatus with intact phreno-esophageal ligament and all gastric fundus is intra-abdominal → SLEEVE ONLY
- **47 cases** (79%) had normal hiatus during routine inspection → SLEEVE ONLY

# HH repair during SG

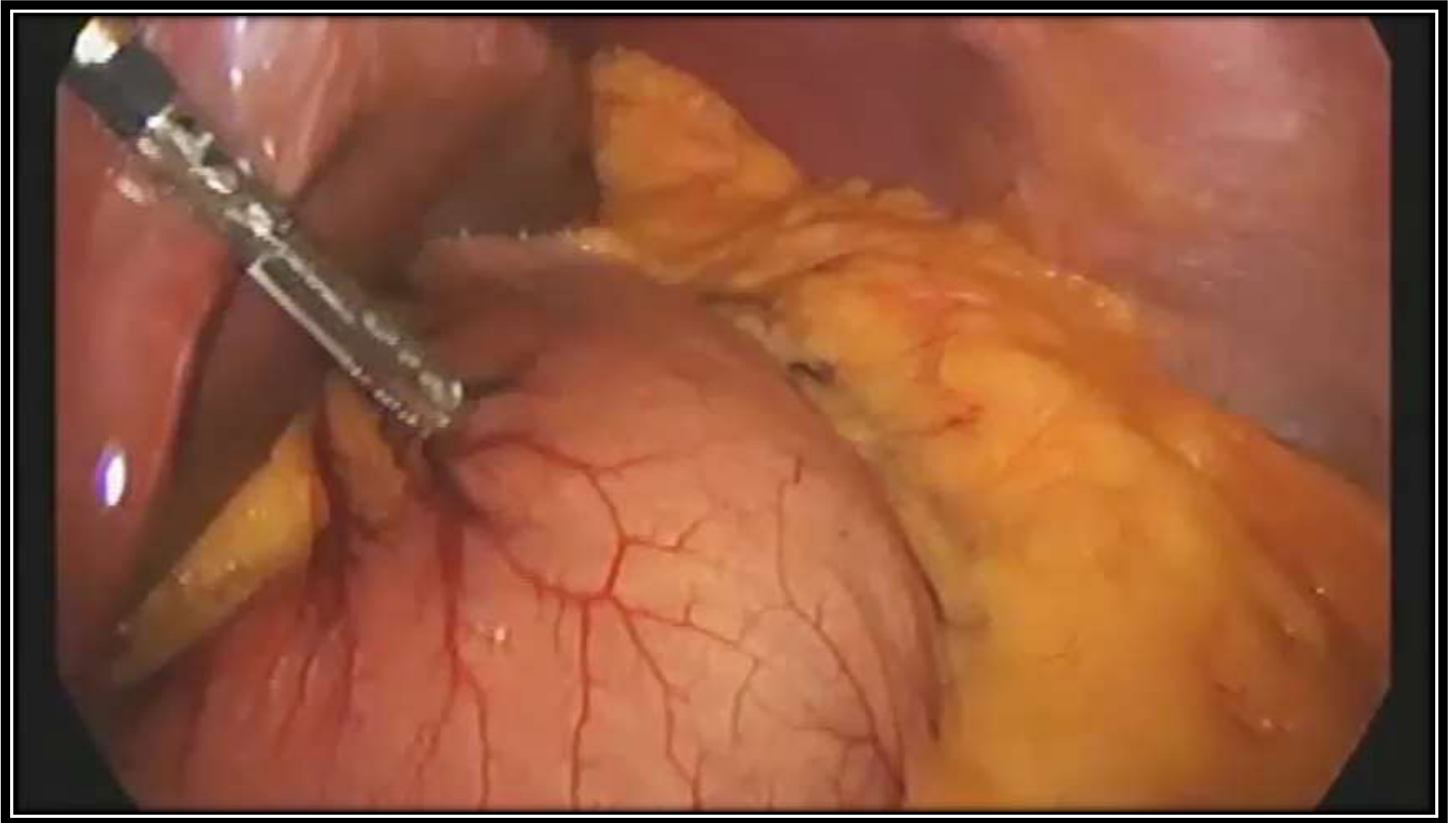
A formal HH repair should include:

- 1- Complete mobilization of the GE junction.
- 2- Mediastinal mobilization of the esophagus.
- 3- Resection of the hernial sac.
- 4- Cruroplasty (posterior +/- anterior).

 Omentopexy

 Cardiopexy

# SG+HH repair



# OUTCOMES



# Outcomes

Operative time

Longer in SG+HH repair (20-30 min)

Length of hospital stay

The same in both groups



# Outcomes

Postoperative symptoms

More pain in SG+HH repair

Surgical emphysema (spontaneous relief)

No difference in vomiting or food intolerance

# GERD-HRQL questionnaire

- 0/8 patients with SG+HH repair
- 2/5 patients (with wide hiatus) not repaired had de-novo GERD symptoms
- 7/47 (15%) patients (with no HH intraoperatively) had SG only had de-novo GERD symptoms

All patients with **de-novo GERD symptoms** are controlled with PPIs and none had intolerable GERD requiring further intervention.

# Limitations

- Small sample size.
- Retrospective nature of the study.
- Short follow-up period

# CONCLUSION



# conclusion

- Intraoperative incidental HH is not an uncommon finding during SG despite adequate preoperative assessment.
- It should be repaired if found to avoid incomplete fundus resection, postoperative GERD or intra-thoracic sleeve migration.

# conclusion

- SG+HH repair **has accepted outcome** as regards to postoperative GERD symptoms.
- Bigger sample size and randomized studies are needed **to evaluate if SG+HH repair may be an option** to patients having HH diagnosed preoperatively undergoing bariatric surgery.

**THANK YOU**

