Hiatus Hernia In Bariatric Surgery

Intra-operative Diagnosis and Repair

Sleeve and Bypass Different?

IFSO 2023, Napoli

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Why Is This Important?

- Hiatal Hernias found after bariatric surgery may contribute to
  - Reflux
  - Regurgitation
  - Dysphagia*
  - Pain

- This is true for both sleeve and bypass

Preface

- Most studies in the area of reflux and bariatric surgery have limitations
  - Few randomised studies
  - Mostly (retrospective) cohort studies
  - Few strict on objective reflux assessment
  - Heterogenous means of clinical assessment
  - Heterogeneous criteria of “hernia”

Traditional Thinking

- Sleeve is refluxogenic
  - High pressure
  - Loss antireflux mechanisms at Angle His

Preop Hiatal Hernia or Reflux Contraindicates Sleeve?

- RYGB is an anti reflux procedure
  - Low pressure
  - Diversional

Better Option For Reflux
Hiatus Hernia Is Less Important

- (OAGB?) – non diversional

Sleeve And Reflux

- Not All Reflux Is Equal
- Oesophageal Failure vs Correctable Factors
- Correctable Factors
  - Weight
  - Hiatus Hernia

➔ *Not All Reflux Precludes Sleeve Gastrectomy*

Evidence Supporting Hiatal Repair In Sleeve

- Many cohort studies
- Mattar et al[1]
  - Formal posterior repair of hernias
  - Clinical assessment of reflux

Pre op	HH	No HH	Outcome	p Value
Symptoms	89%	76%	Improvement	0.01
No symptoms	7.6%	17%	De novo	0.06 (ns)

- One systematic review[2]
  - Broadly similar outcomes

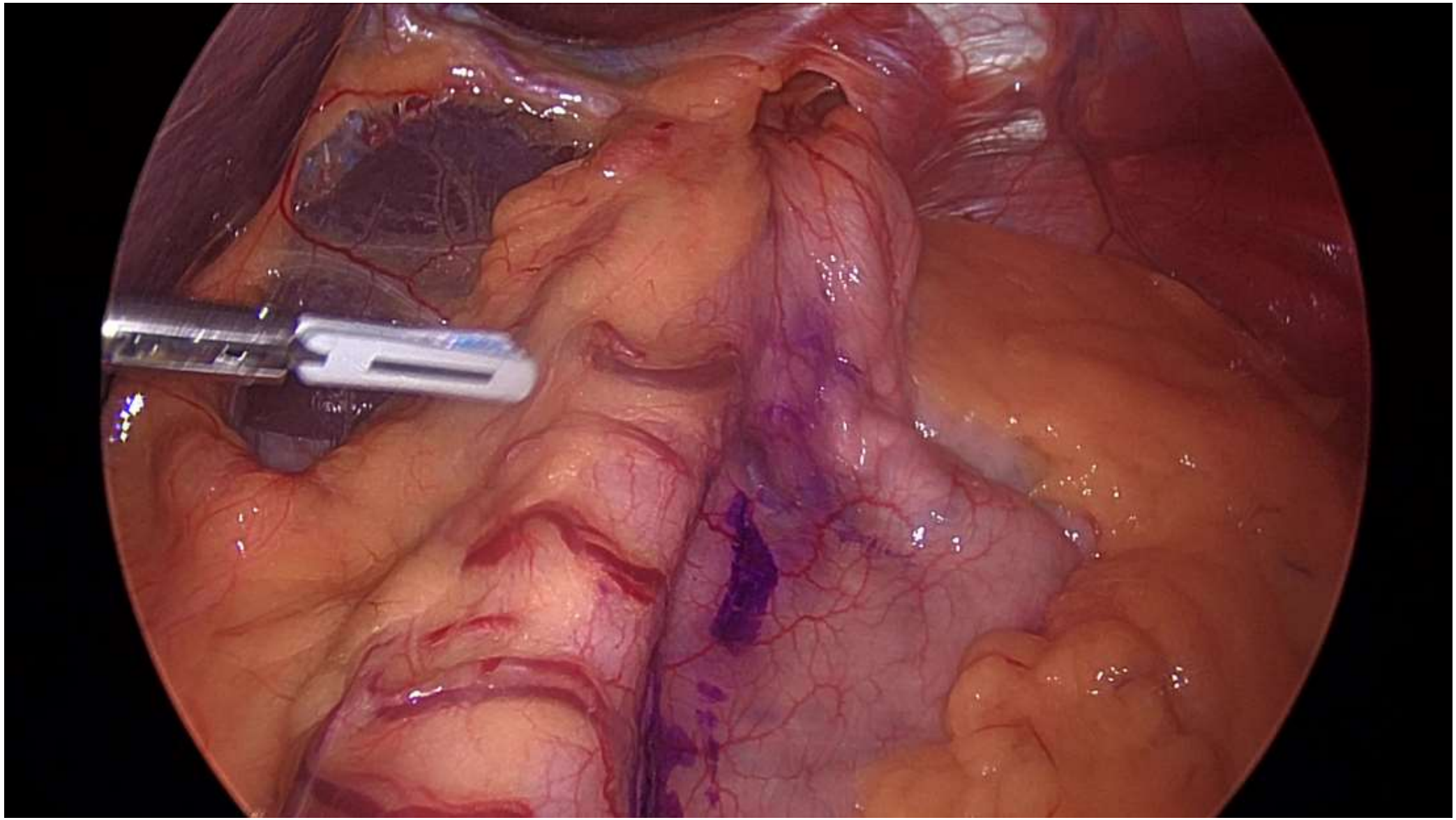
1. The Egyptian Journal of Hospital Medicine (October 2022) Vol. 89, Page 5482- 5487
2. Mahawar et al. OBES SURG (2015) 25:159–166

Evidence Hiatal Repair & Sleeve Gastrectomy

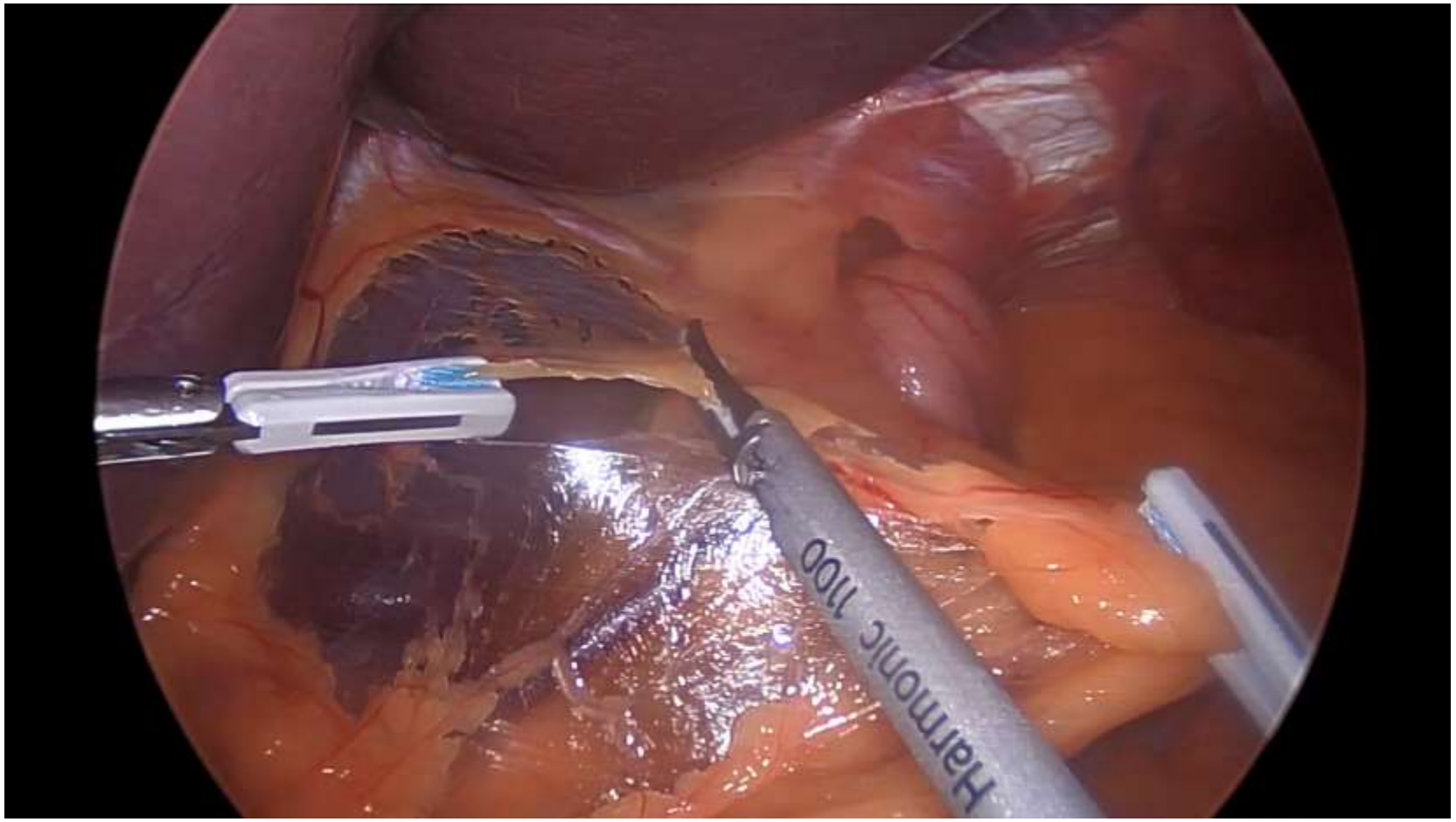
- One Randomised Trial[1] – suggests repair makes no difference…
- 100 patients
- Randomised to Hiatal Repair or Sleeve Alone regardless of hernia status
    - In repair group, complete hiatal dissection and cruroplasty *even if no hernia*
    - Mesh repairs excluded
    - HH > 4cm *in control arm* excluded* (went on to be repaired)
    - Analysed subgroups without revealing significant differences (small numbers)

➔ The disruption of the hiatus when no hernia may have had a negative effect

1. Snyder et al. Surgery for Obesity and Related Diseases 12 (2016) 1681–1688



Complete Dissection & Repair Principles



- Complete exposure of the pillars
- Complete reduction
- High mediastinal dissection mobilisation of oesophagus
- Stay well anterior
- Protect Vagi
- Posterior closure
- Use peritoneum in closure

Intra Operative Diagnosis

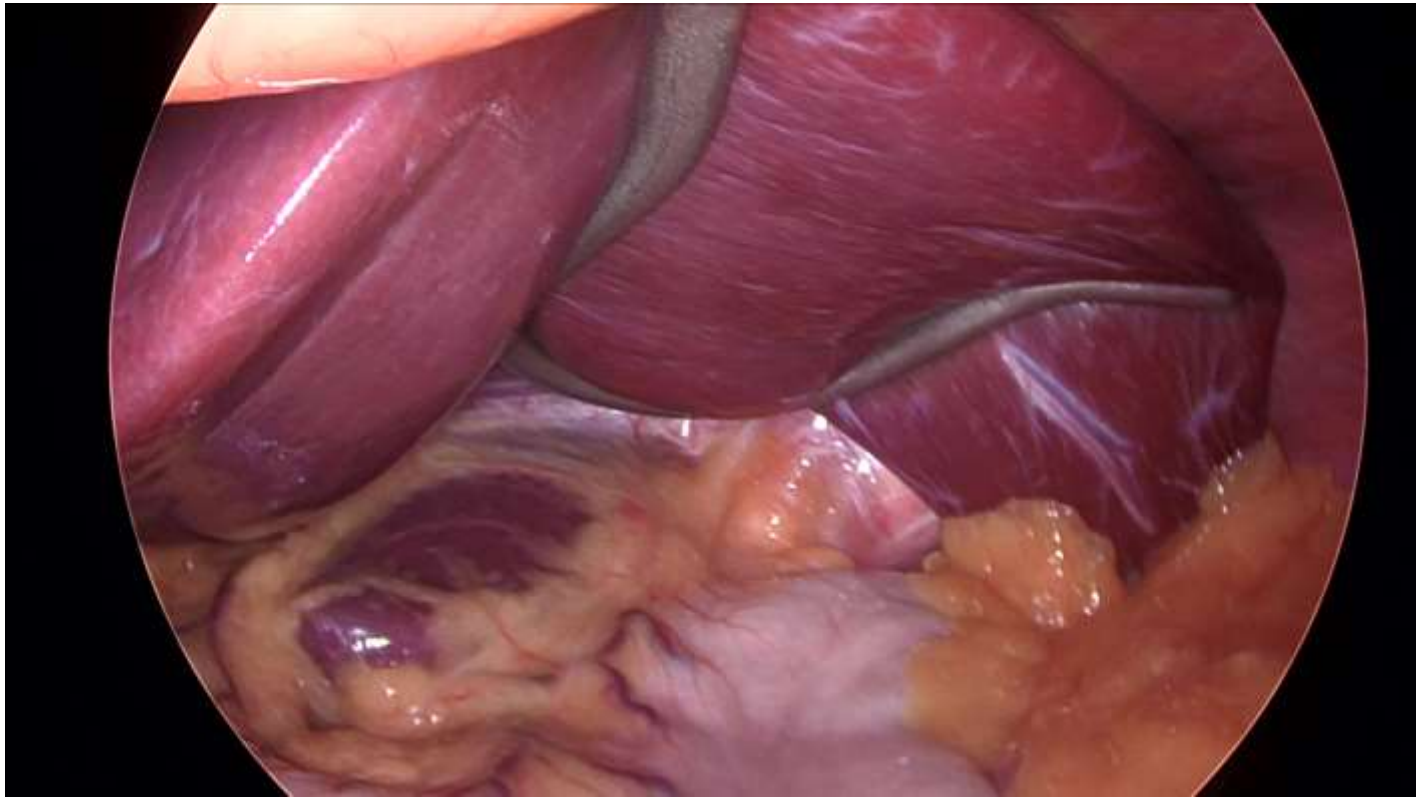
Variations

- Anterior Dimple
- Hiatal laxity
- Anterior Peritoneal Sac / Fat
- Posterior lipoma

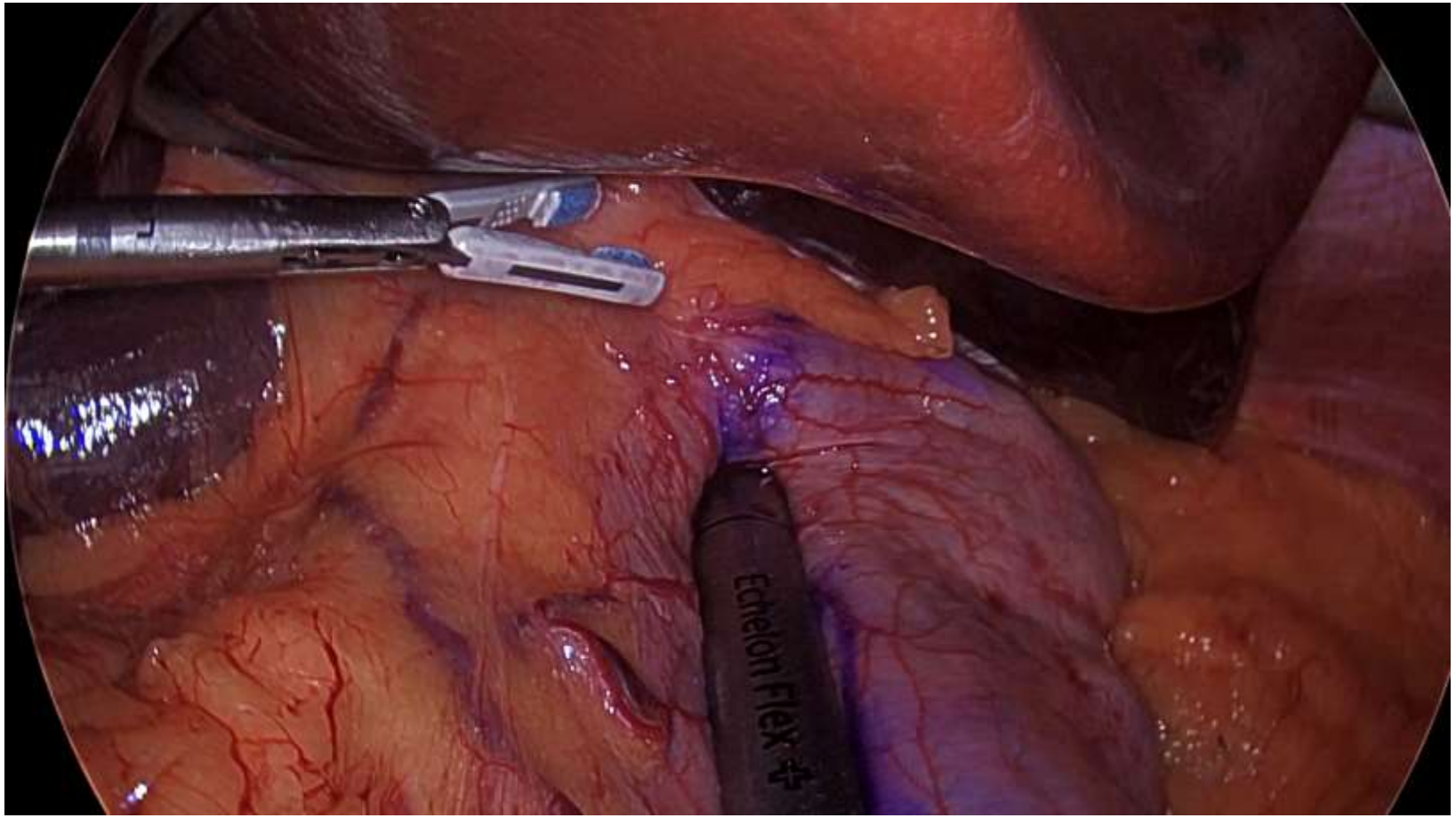
Spectrum Of Disease
No Standardisation
Minimal Evidence

Anterior Dimple

- Anterior Hiatal Dissection
  - ? Unnecessary
  - May disrupt phreno-oesophageal ligament
  - May reveal hiatal laxity
- Anterior Cruroplasty?



Lax Hiatus / Preperitoneal Sac



Evidence Against Anterior Hiatal Repair Alone

- Ghaferi et al 2023 analysis of statewide data base
  - 11,000 sleeve patients / 4015 concomitant HH repair
  - Posterior repair improved symptoms c.f baseline
  - Anterior repair no benefit & (possibly worse)

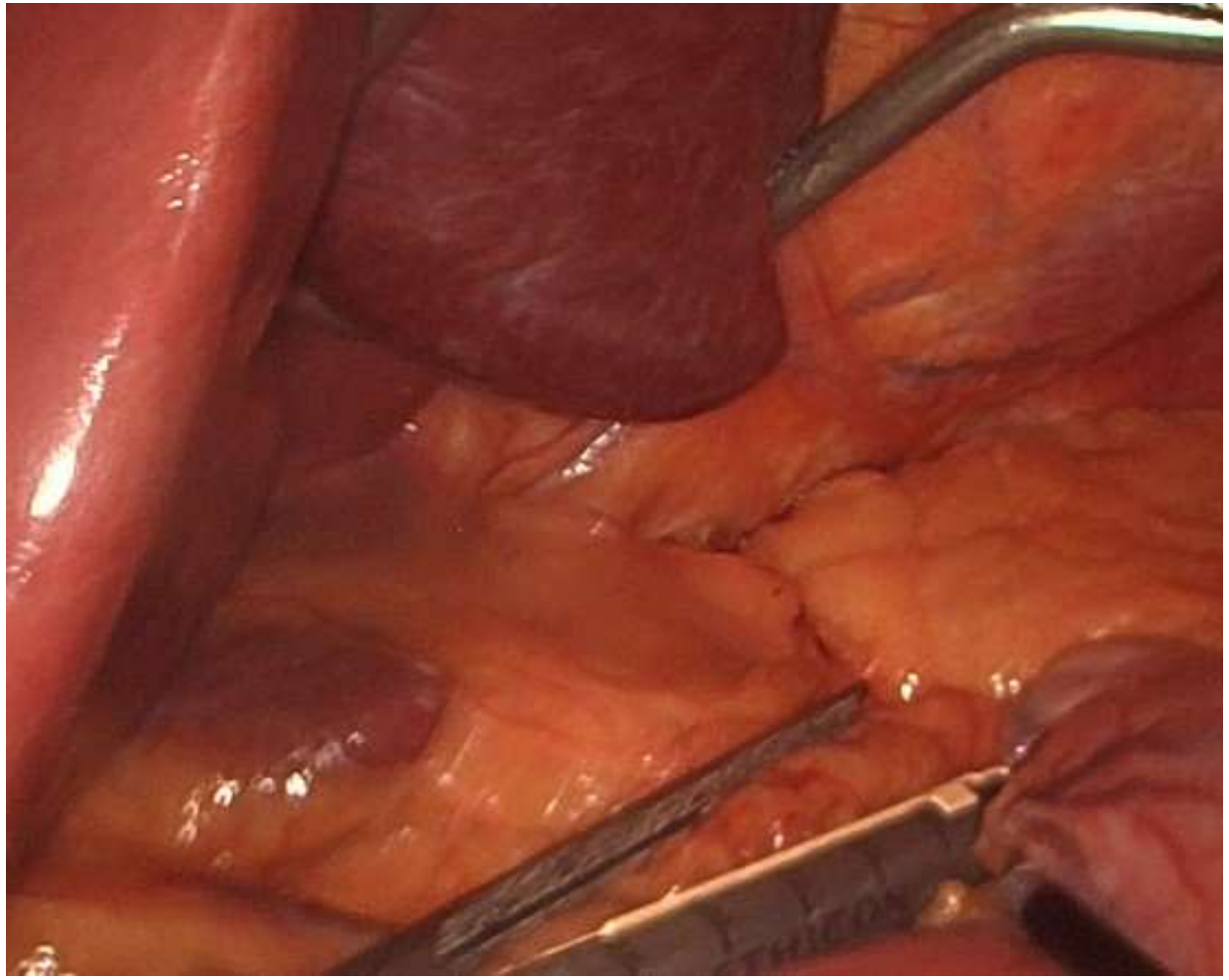
However

- No data on hernia anatomy

1. Surg Obes Relat Dis. 2023 Jun;19(6):619-625

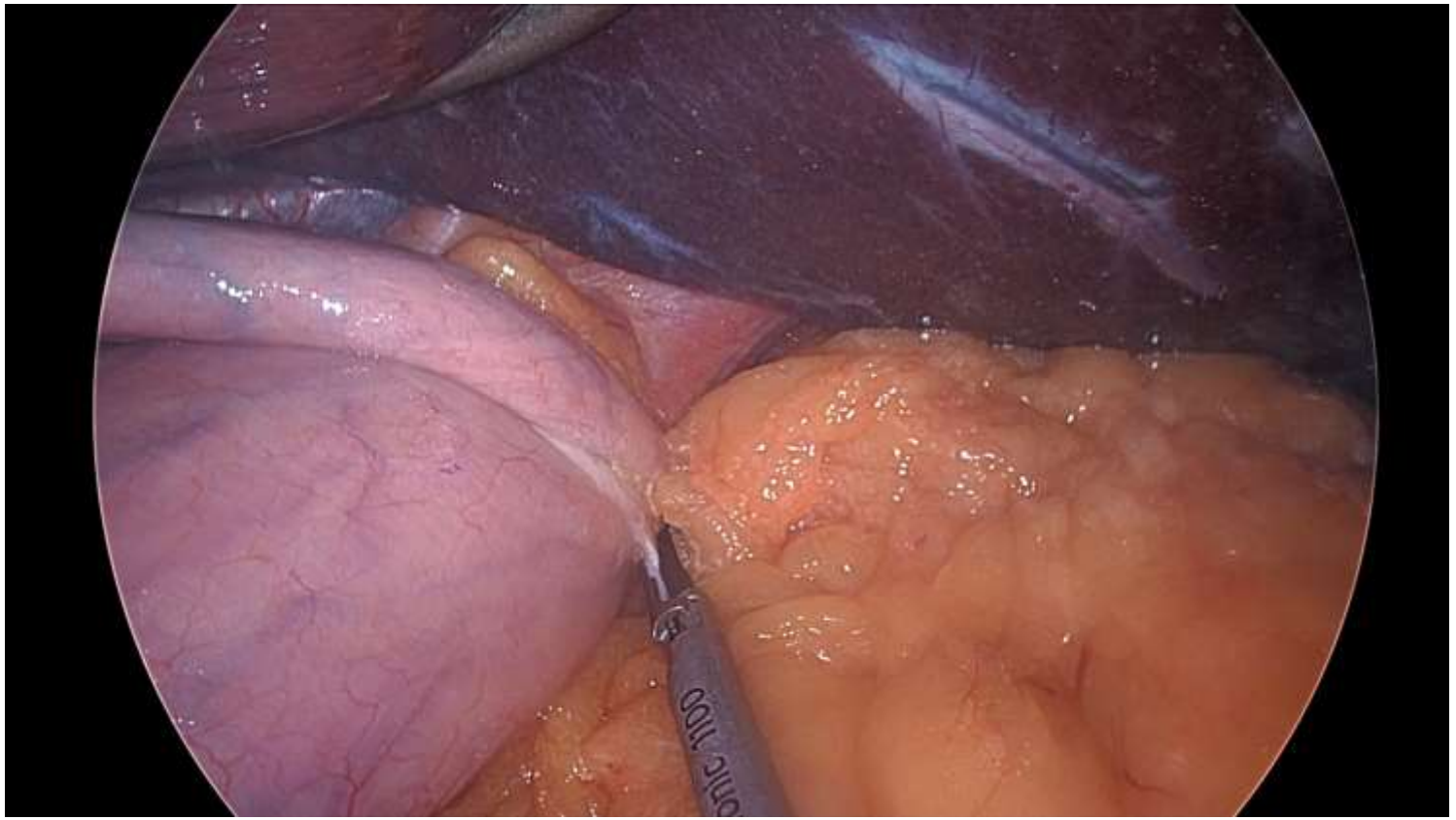
Not Always Obvious

- Pericardial Fat Pad Obscures
- Wish to avoid disruption of hiatus unless hernia present
- Hernia may be hidden
- How to assess?



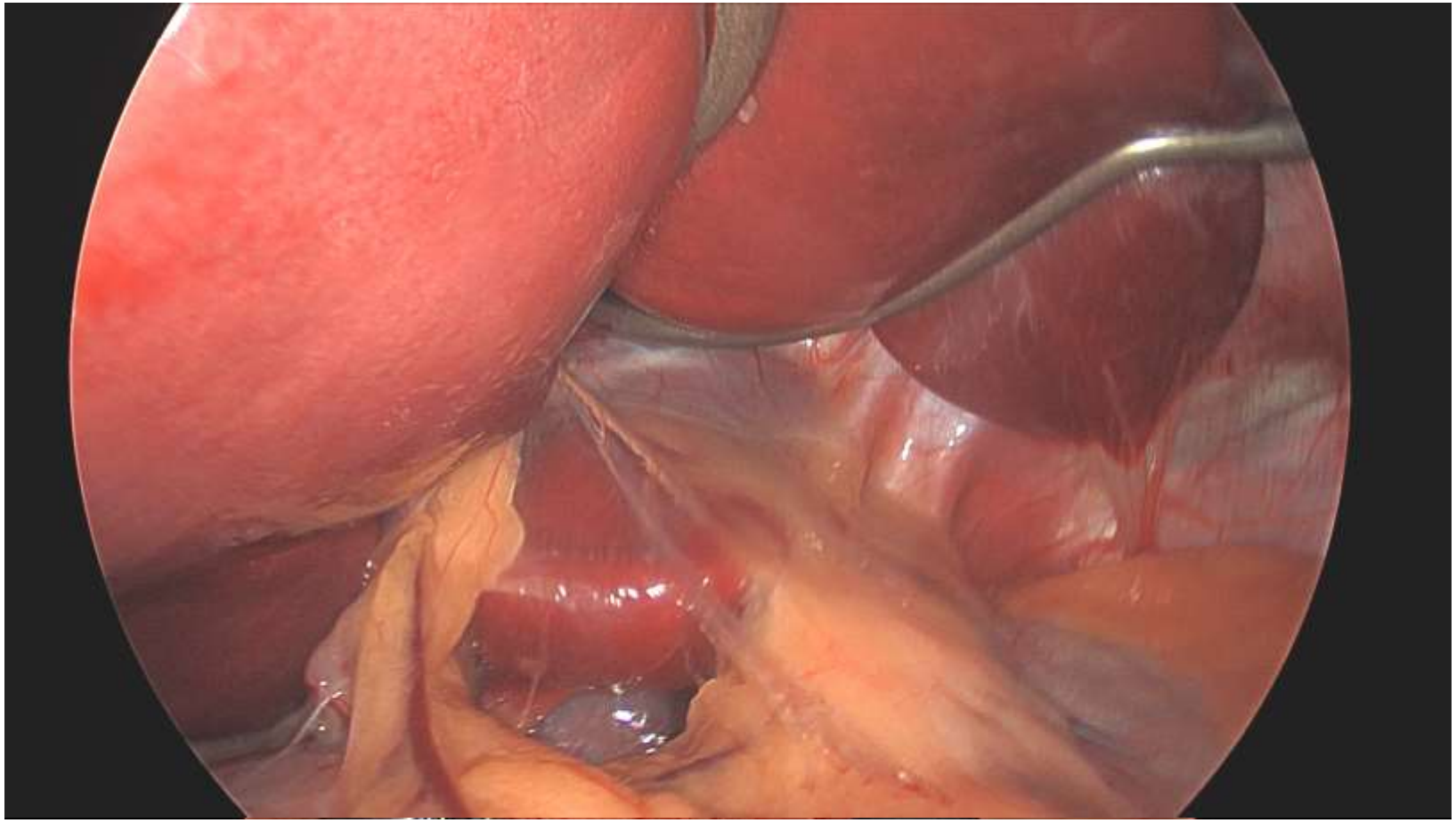
How To Assess – Minimalist Approaches

- During dissection at the left crus can assess posterior hiatus



How To Assess – Minimalist Approaches

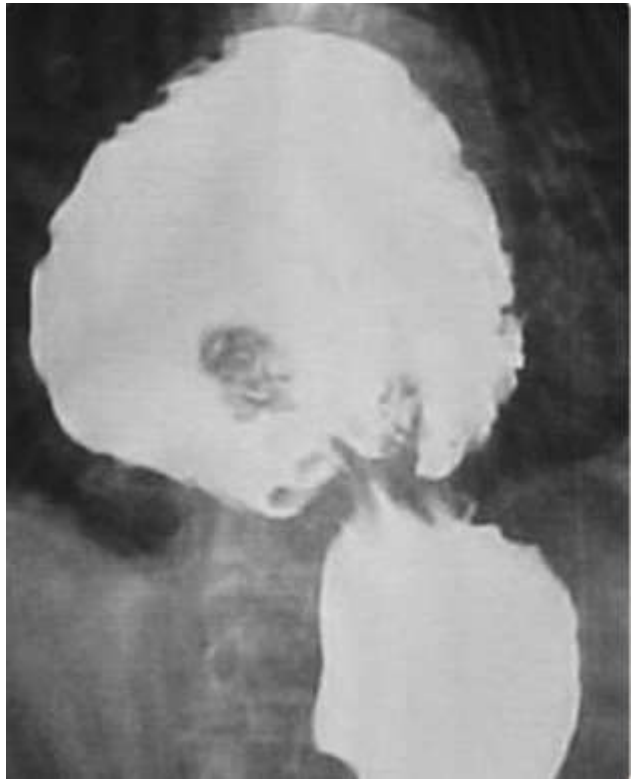
- Open Pars Flaccida and assess laxity of right crus



How Big Is Too Big?

- The larger the hernia, the more tendency to recurrence
  - >6cm concerning
- The key is high mediastinal oesophageal mobilization
- The “Giant” Hiatus Hernia
  - 30% recurrence rate
- Probably precludes sleeve gastrectomy

→ RYGB better



My Own Data Sleeve

- My Approach
  - Preoperative endoscopy for symptomatic patients
  - Exclusion of patients with severe reflux or non weight related reflux (RYGB offered)
  - Attention to hiatus as described
  - Formal posterior repair with complete dissection for hernia
  - If lax hiatus / anterior sac and no posterior component – anterior cruroplasty
  - Careful sleeve technique: 36Fr bougie, complete dissection GOJ – Pylorus, equatorial staple line, antrectomy, avoid incisura, omentopexy

- 1398 Sleeves
- 10% on PPI
- 4 patients with severe reflux requiring conversion to RYGB (0.2%)

Is Bypass Different?

- 169 patients >5 years post surgery
  - Clinical
  - Endoscopy
  - pH

	Post Sleeve	Post Bypass
Reflux Symptoms	51%	11%
Oesophagitis	27%	6%
pH	Higher Mean Acid Exposure	

  - Surgical technique not documented
  - Note quite high reflux rates for sleeve

Bettina K. Wolnerhanssen et al. / Surgery for Obesity and Related Diseases 19 (2023) 707–716

Reflux After RYGB

- May be more common than thought
  - Nationwide Swedish Cohort Study[1]
  - 2454 participants RYGB with pre op reflux (based on PPI prescription data)
  - Followed median 4.6 years
  - Reflux recurred in 48.8% within 2 years

  - No surgical info re technique
  - No data re HH repair or not
  - Deduced reflux based on PPI prescription patterns

1. Holmberg et al. Aliment Pharmacol Ther. 2019;50:159–166.

Hiatus Hernia Plays A Role In Post Bypass Reflux

- Motolo et al[1]
  - 32 patients reflux after RYGB
  - 28 had HH repair (87%) to correct symptoms
  - Only 2 had a HH repair at their previous index RYGB (?unexplored)

1. Motolo et al. ABCD Arq Bras Cir Dig 2021;34(3):e1614

HH and RYGB

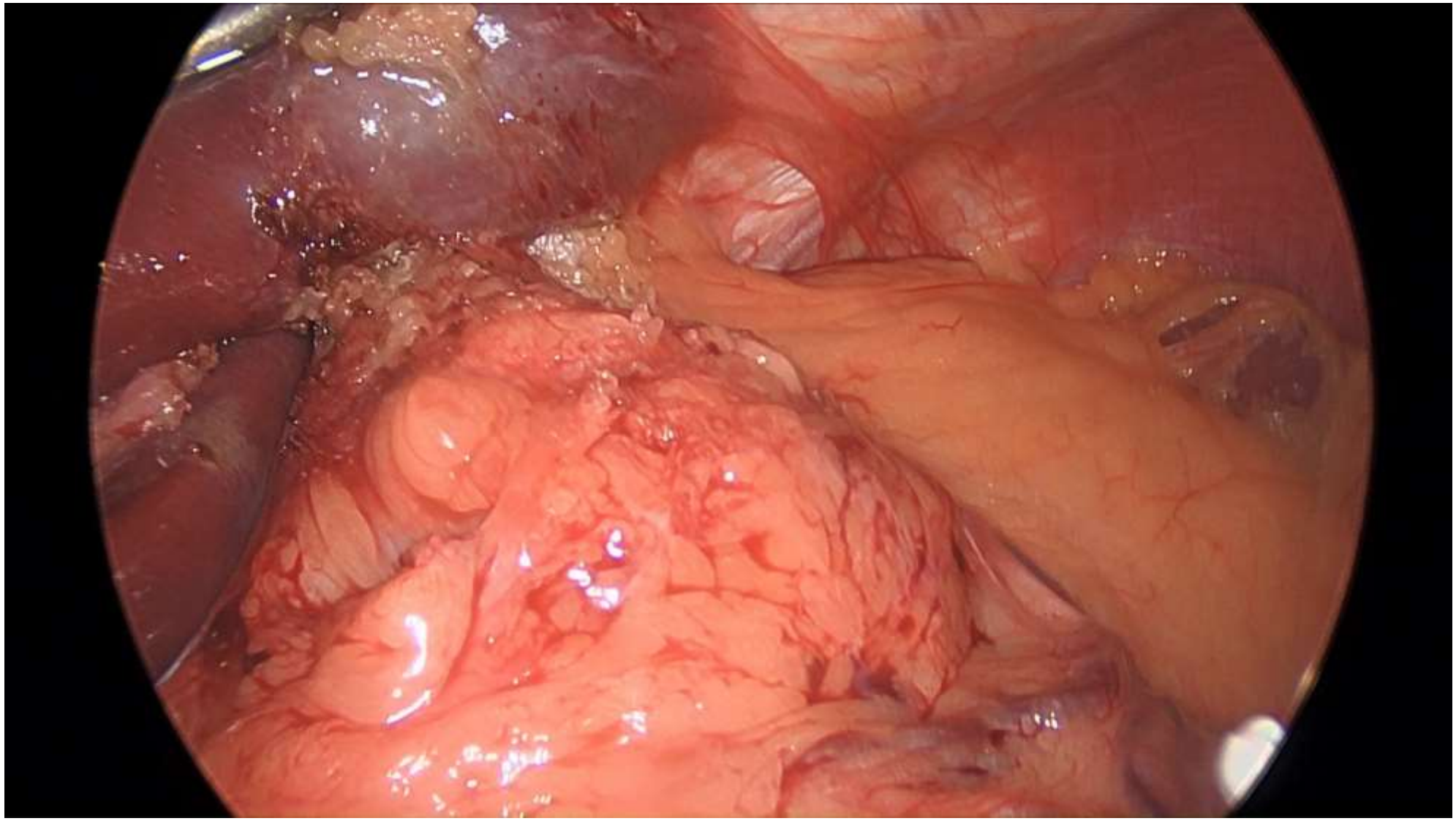
- 38 patients post RYGB with symptoms
  - HB
  - Regurgitation
  - Pain
  - Dysphagia
- Studied with
  - Imaging
  - Endoscopy
  - pH / Manometry
- Hiatal hernia was the most frequent finding observed in 15 (39.5%) patients
- Often associated stricture

BRAGHETTO et al. ABCD Arq Bras Cir Dig 2022;35:e1657

Hiatal Hernia Repair In Bypass

- Little precise data to inform need for repair
- Belief that RYGB solves reflux may lead to under exploration of the hiatus in most studies and in clinical practice
- Data on reflux after Bypass suggests HH is important
- Recommend low threshold for hiatal exploration and repair
- Potentially may be more aggressive than in sleeve since performing diversion and have low pressure system

Revision Cases – always dissect the hiatus



Conclusions

- Hiatal Exploration & appropriate repair is important in both sleeve and bypass
- Index of suspicion preoperatively can help guide “aggressiveness”
- In sleeve, minimalist assessment at the left crus may prevent unnecessary exploration
- In bypass one may err on side of more frequent dissection potentially
- Formal repair involves complete dissection and posterior repair

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