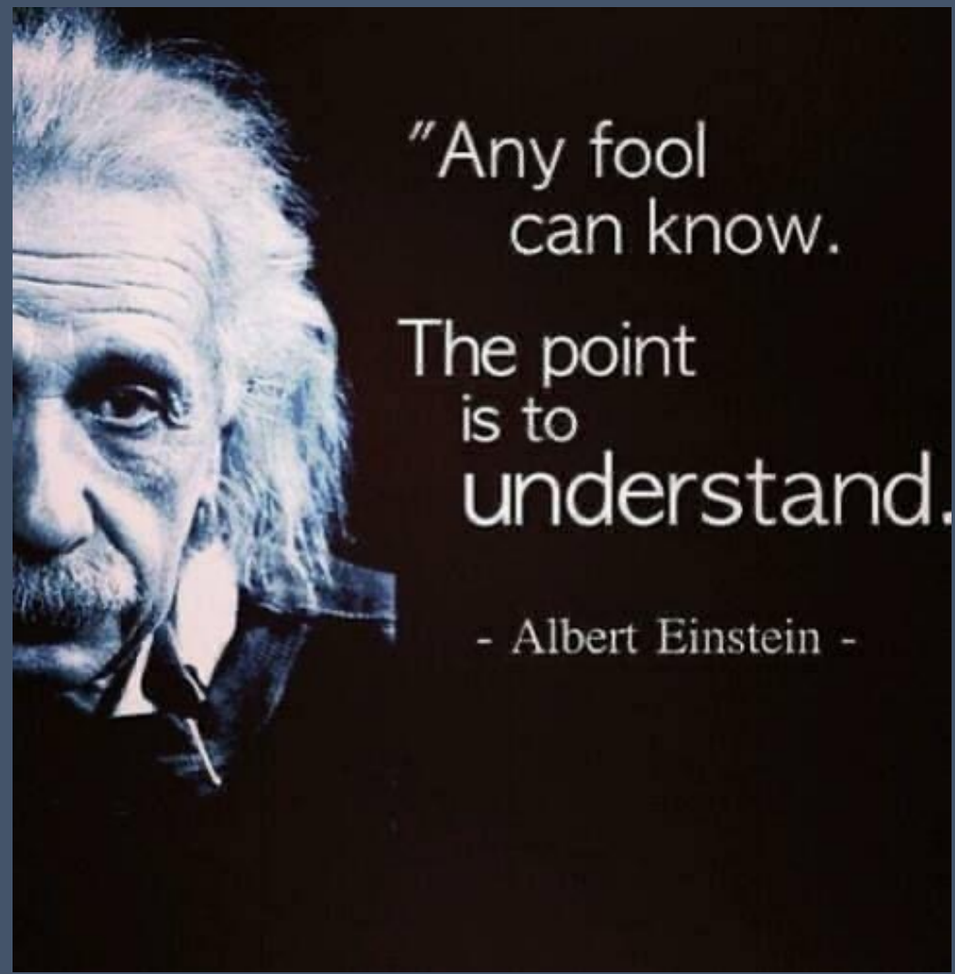

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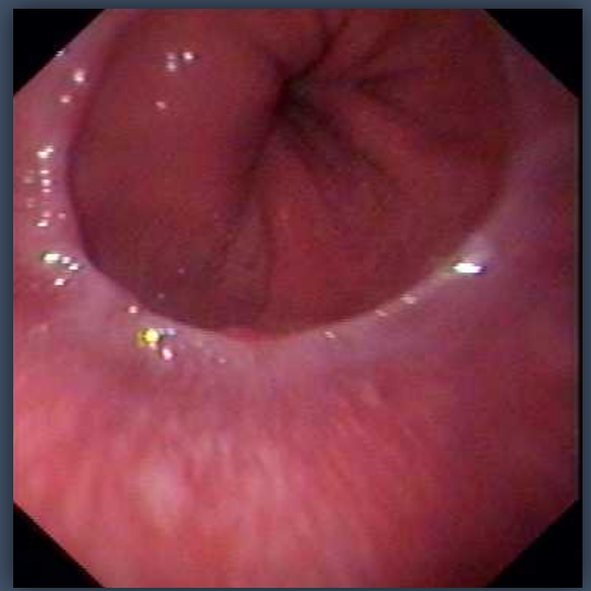
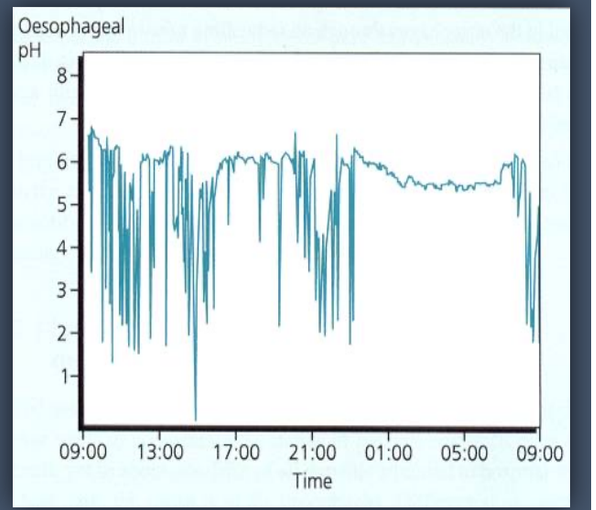
REDO ANTIRIFLUX SURGERY





- **Dr. Roy Patankar**
- **Mumbai**

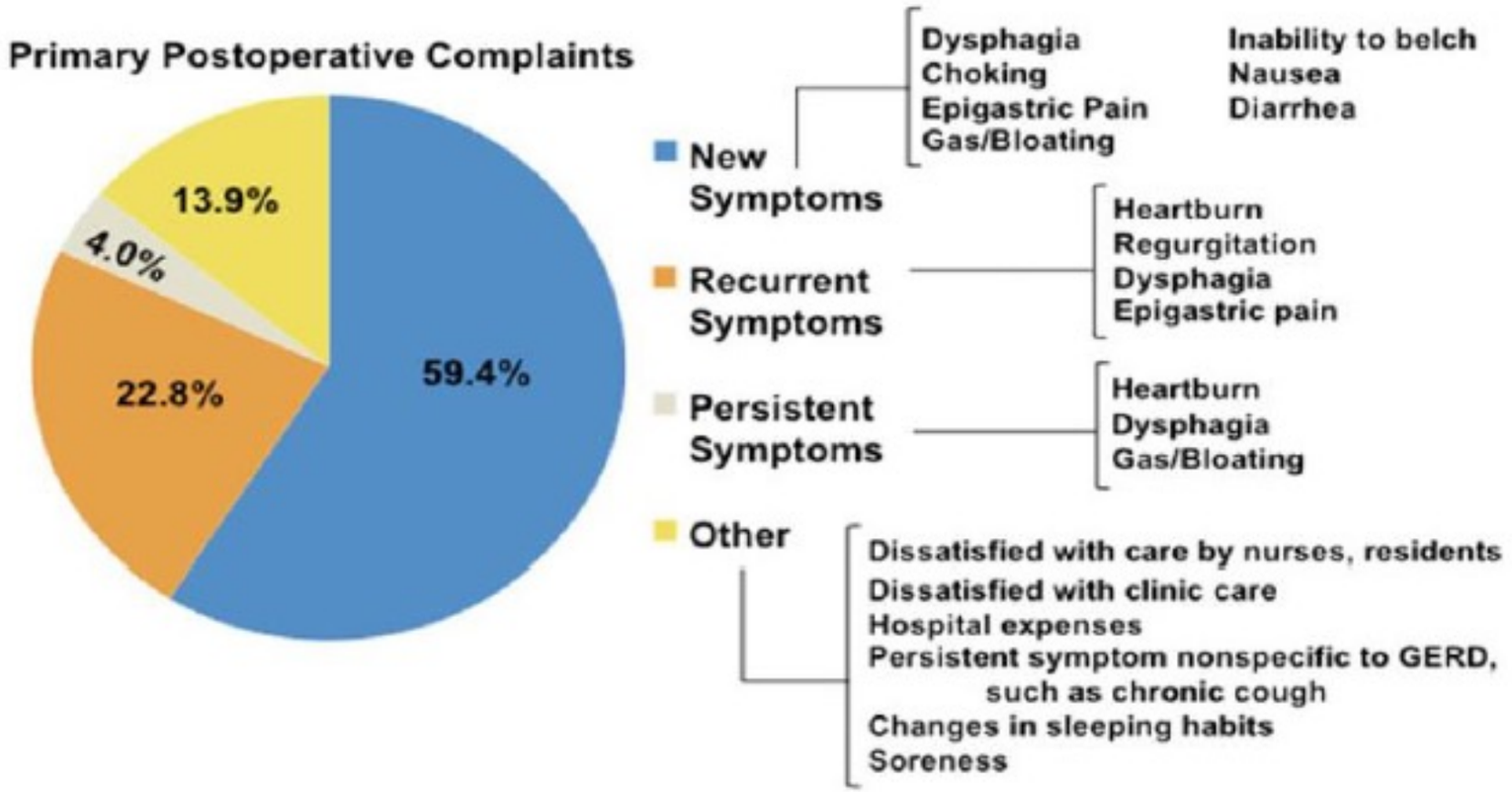
Anti-Reflux Surgery - Failure Happens

- **Anti-reflux Surgery Failure**
  - **- 2 - 30 %**
  - **- Redo or back on PPI**

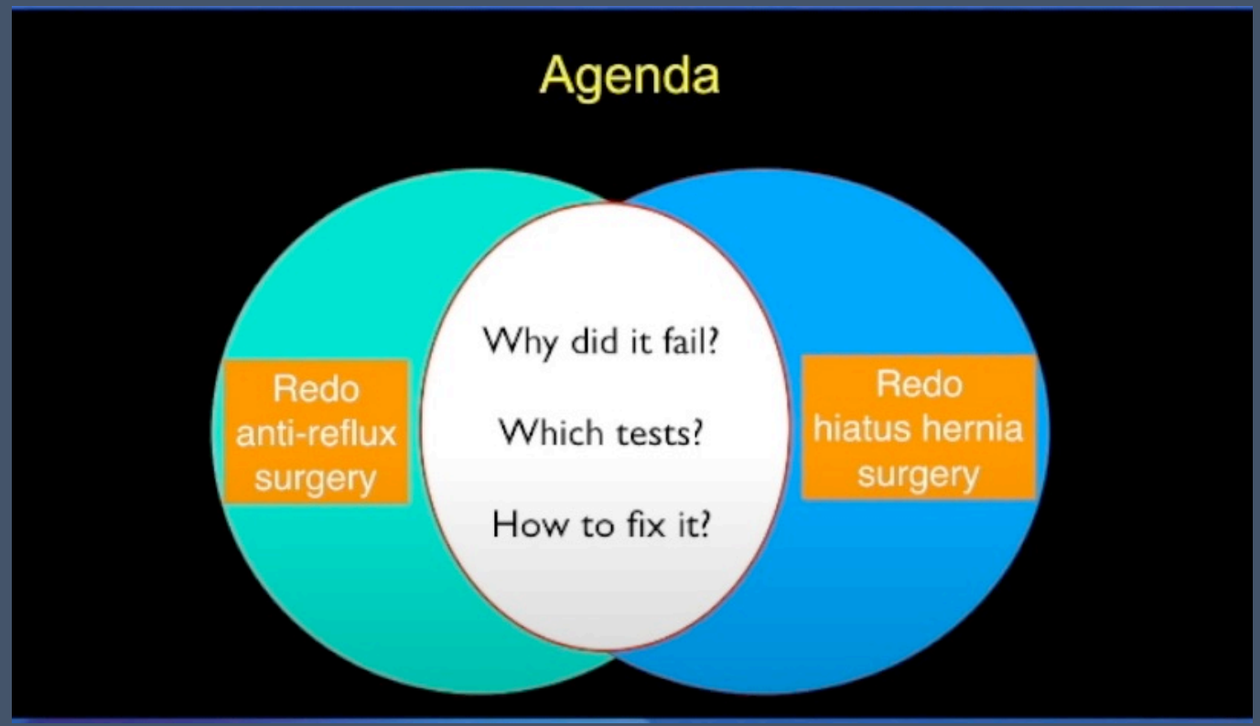
Antiporda M, Jackson C, Smith CD, Thomas M, Elli EF, Bowers SP. Strategies for surgical remediation of the multi-fundoplication failure patient. Surgical endoscopy. 2019 May 15;33(5):1474-81.

HARVARD MEDICAL SCHOOL

Dissatisfied patients after surgery



HARVARD MEDICAL SCHOOL



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Failed ARS – Keys to Success

- **Know patterns of failure**
- **Diagnostic work-up**
- **Patient selection**
- **Intraoperative management**

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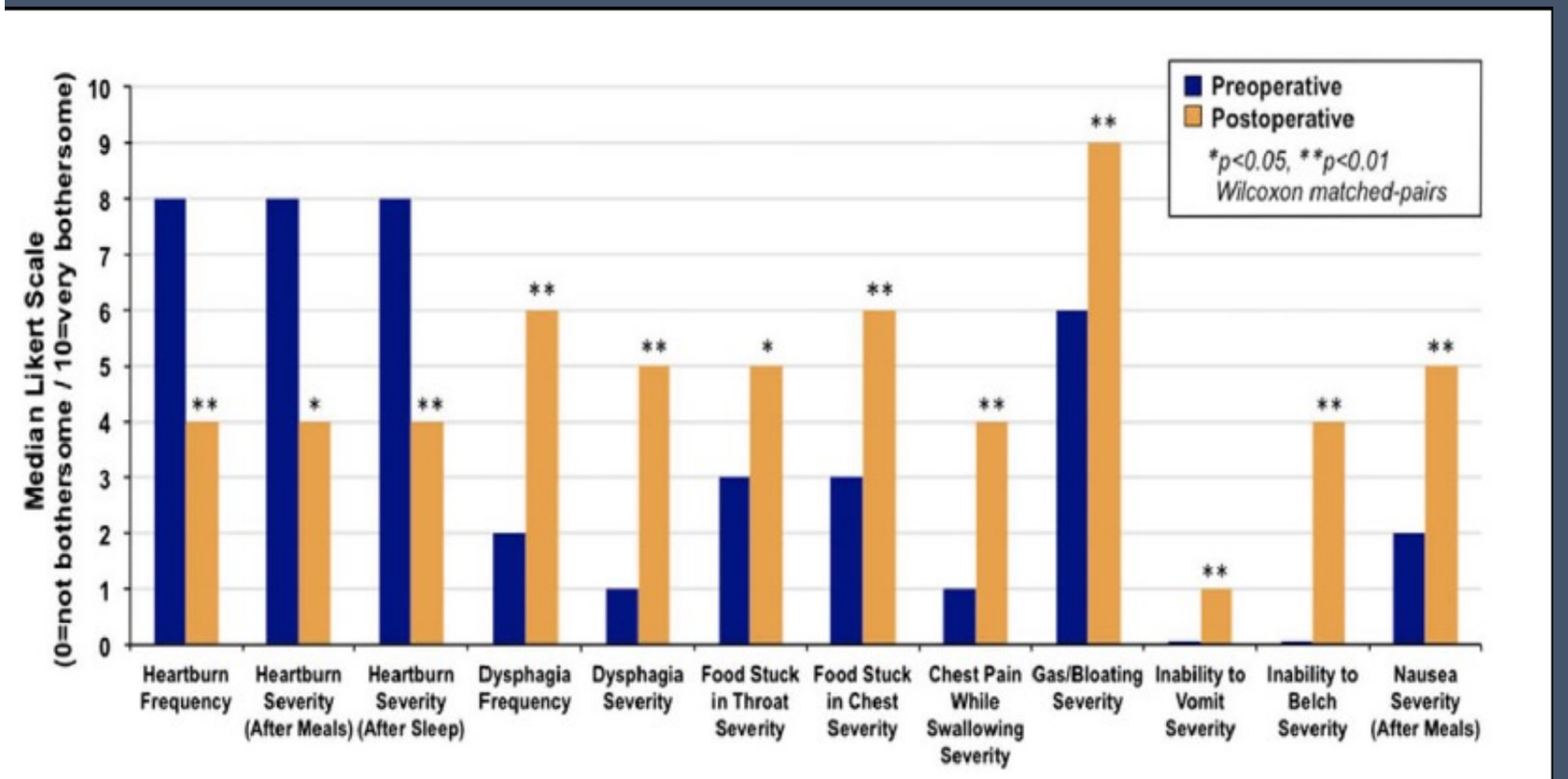
Failed Anti-reflux Surgery

- **What is Failure?**
  - **Recurrence of reflux symptoms or development of new foregut symptoms**
  - **Anatomical failure**
  - **Clinical failure**

Change in symptoms after surgery



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DONNING KRUGER EFFECT

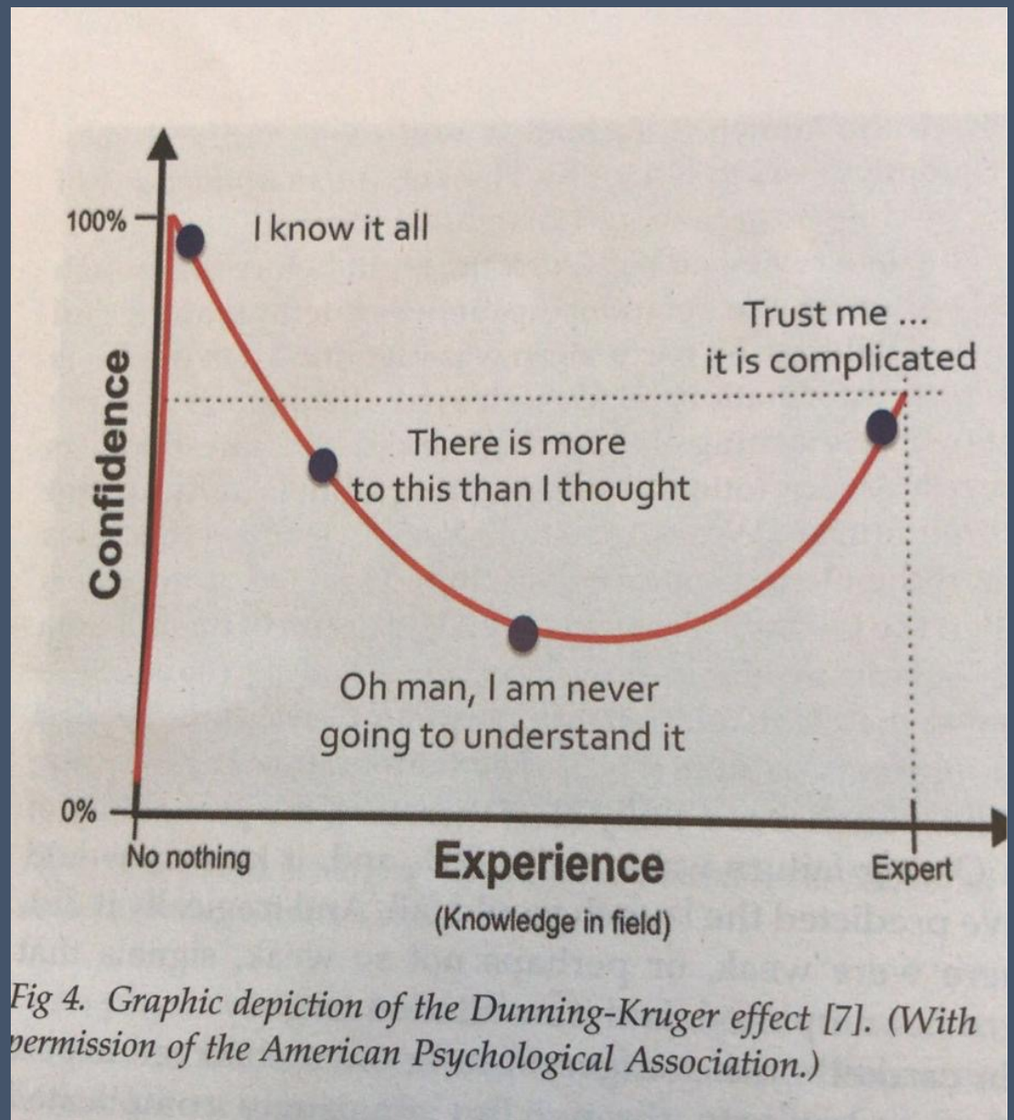

Fig 4. Graphic depiction of the Dunning-Kruger effect [7]. (With permission of the American Psychological Association.)

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Results: Laparoscopic Reoperative Anti-reflux Surgery

Surgeon	Year	Good to Excellent results
Luketich	2002	85%
Smith	2005	73% to 89%
Awais/Luketich	2011	80.2%

HARVARD MEDICAL SCHOOL

Multiple Re-ops

- 61 patients with recurrent GERD following anti-reflux surgery
- Number of prior anti-reflux surgeries

	Complications	Success
1	27%	85%
2	26	66%
3	75%	42%

HARVARD MEDICAL SCHOOL

Little AG. JTCVS 1986

Paper

FREE

June 1998

An Analysis of Operations for Gastroesophageal Reflux Disease

Identifying the Important Technical Elements

Marco G. Patti, MD; Massimo Arcerito, MD; Carlo V. Feo, MD; et al

Hinder Classification

SURGERY OF THE ESOPHAGUS 0039–6109/97 $0.00 + .20

MANAGEMENT OF THE FAILED ANTIREFLUX OPERATION

Ronald A. Hinder, MD, FACS, Paul J. Klingler, MD,
Galen Perdikis, MD, and Stephen L. Smith, MD

SURGICAL CLINICS OF NORTH AMERICA

VOLUME 77 • NUMBER 5 • OCTOBER 1997

HARVARD MEDICAL SCHOOL

Failed Anti-Reflux Surgery

- Poor initial indications
- Esophageal body
  - clearance problem: tight wrap, motility disorder
- Wrap:Valve problem
  - too loose, too tight
  - improper placement on tubularized fundus **(short esophagus)**
  - Wrap slippage onto stomach
- Reservoir problem
  - vagal injury
  - diabetic
  - alkaline gastric reflux

HARVARD MEDICAL SCHOOL

Initial Office Visit

- Detailed history prior to original anti-reflux surgery
  - Initial dominant symptoms leading to surgery
  - Response to meds
  - Initial response to surgery
  - Barium esophagrams, upper endoscopy
  - 24-hour pH, manometry
  - Barretts, stricture, PEH
  - Check Previous Operative Report

HARVARD MEDICAL SCHOOL

Investigations

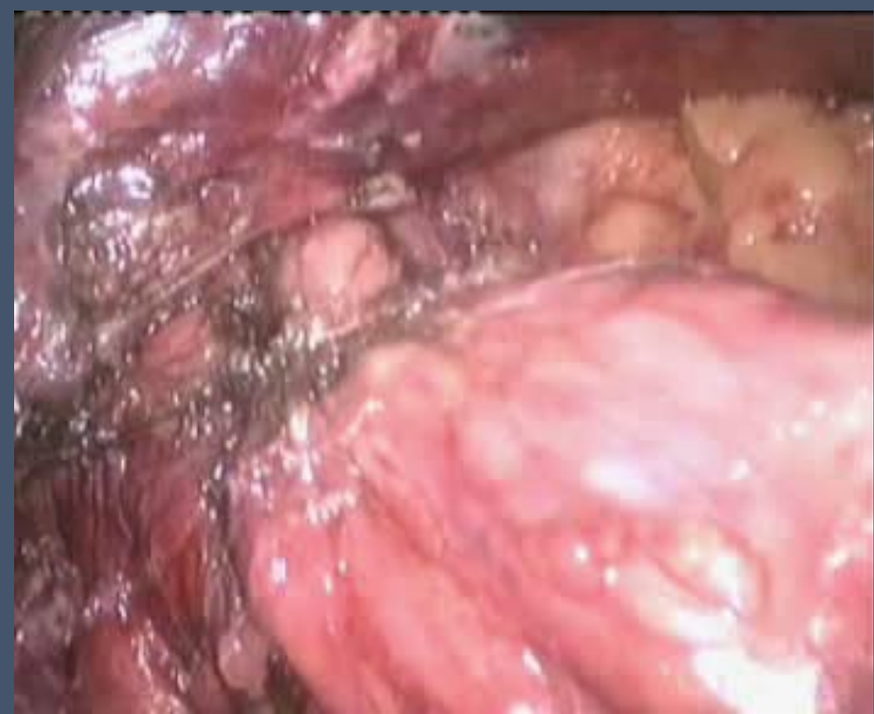
- New Studies:
  - Restudy patient: Should be exhaustive
    - Ba swallow
    - Manometry: LES, Esophageal function, short esophagus
    - 24h pH study
    - EGD
  - Nuclear medicine gastric emptying
  - Partner with GI medicine, concurrence on medical failure
  - Obesity counseling as indicated
- Never schedule surgery on the first visit!

HARVARD MEDICAL SCHOOL

Which patients do not do well after lap fundoplication?

Predictors of Surgery

- Male Patients
- Response to PPI ?
- Hiatus Hernia
- First Surgery
- Normal Motility
- Atypical symptoms



O Boyles CJ ANZ J Surg. 2002

Patterns of Failure

- **Oesophagus**
  - Inadequate mobilization
  - Not preserving vagus
- **Crura**
  - Too tight cruroplasty
  - Cruroplasty under tension
- **Short gastric division**
  - Inadequate greater curve mobilization
- **Wrap**
  - Too tight wrap
  - Twisted wrap
  - Migrated Wrap
  - Slipped Wrap

DYSPHAGIA

- WRONG SELECTION OF PATIENT
- ESOPHAGEAL LENGHTENING
- CRURAL CLOSURE / BOUGIE
- RETROESOPHAGEAL WINDOW
- FUNDAL MOBILIZATION
- WRAP CONSIDERATION

¤ Abstract

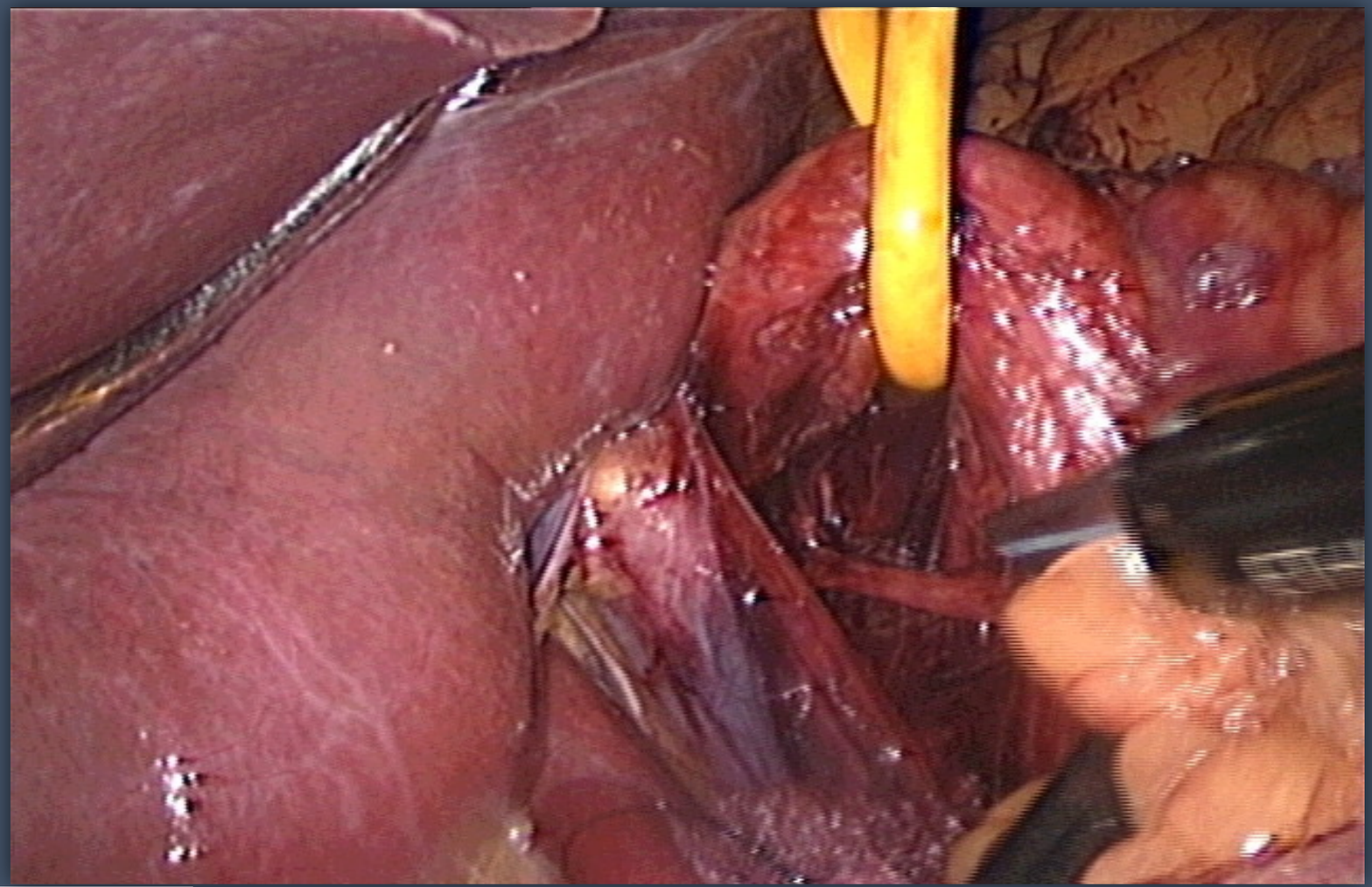
Background: Long-term dysphagia is a known complication of laparoscopic anti-reflux surgery (LARS). Of the several factors, inadequate hiatal closure is one of the major reasons for its occurrence. The aim of this study is to develop a technique for the quantitative assessment of crural closure during LARS to reduce dysphagia.

Materials and Methods: It is an analysis of prospectively collected data of 109 patients who underwent LARS at a tertiary healthcare centre in India. To identify the adequacy of hiatal closure intraoperatively, a 7 French Fogarty catheter was used, and its balloon was inflated with 1 cc air at the repaired hiatus. This inflated balloon in the repaired hiatus following cruroplasty gives an accurate quantitative assessment of the adequate closure and adequate space for food bolus to pass without causing mechanical obstruction after hiatus repair. Pre- and post-operative 12 months' DeMeester scores and lower oesophageal sphincter (LES) pressures were calculated.

Results: The patients had a significant reduction in DeMeester scores postoperatively from a mean of 68.5–12.3 ($P < 0.0001$). None of the patients had long-term dysphagia or the need for long-term proton-pump inhibitors. The mean LES pressures on post-operative manometry showed increase to 15.1 mmHg from a mean of 6.4 mmHg, which was statistically significant ($P = 0.0001$). None of the patients had a recurrence of hiatus hernia.

Conclusion: Quantitative assessment of adequacy for crural closure during LARS using a 7 French Fogarty catheter balloon is a novel technique which may decrease the incidence of post-

RETROESOPHAGEAL WINDOW



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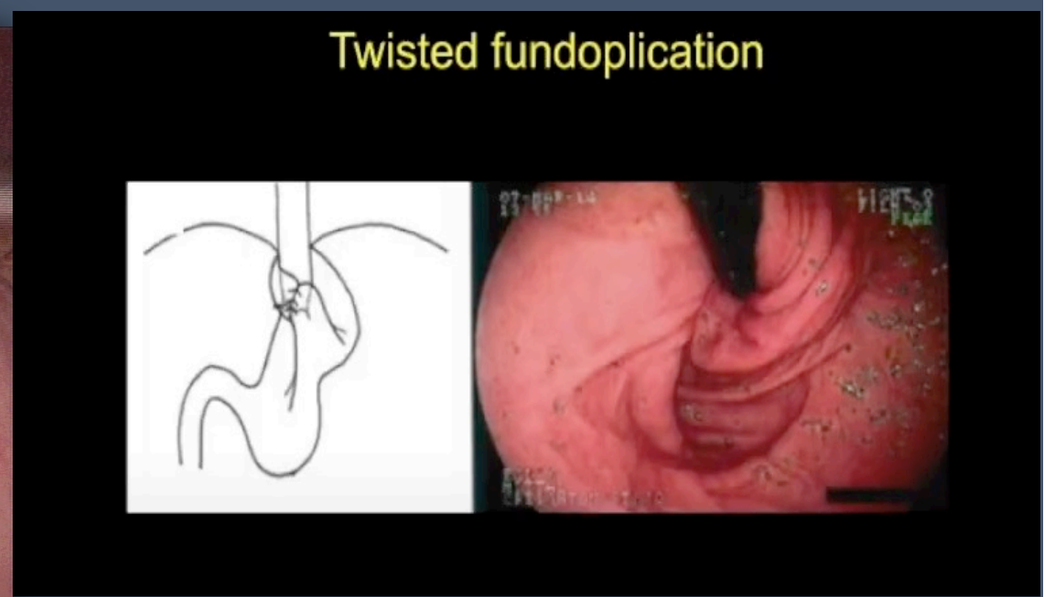
Common Problems

- too tight wrap
- too long a wrap > 3.5 cms

- Lateral torsion with corkscrew if wrap goes to right



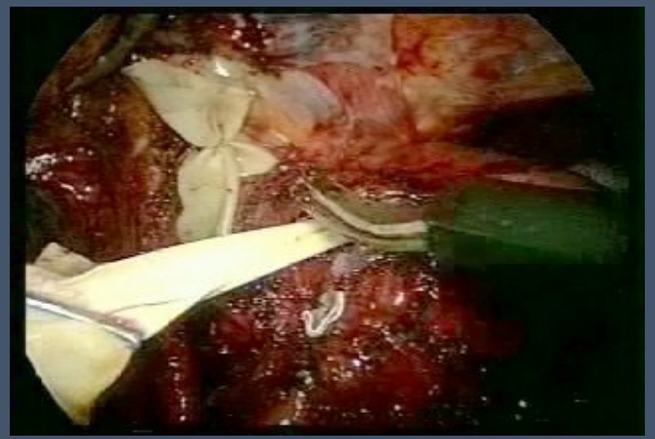
SAGES GUIDELINES

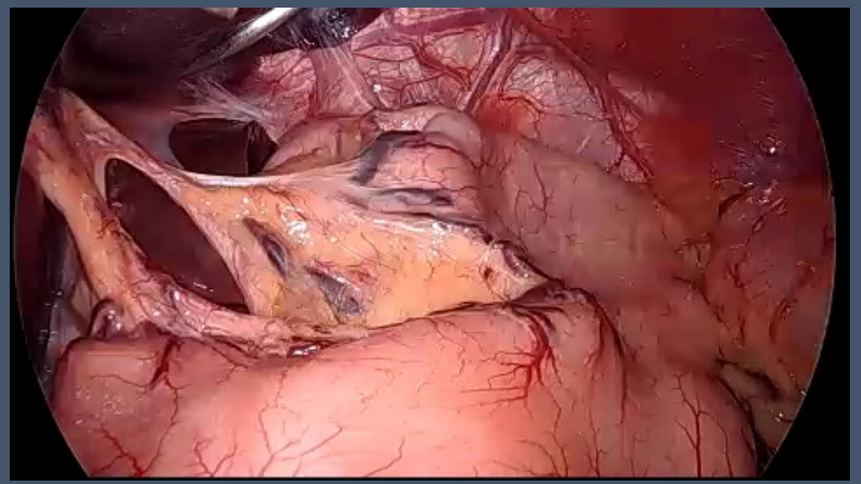
- Recurrent hiatal hernia repair is indicated when the symptoms match the anatomical findings.
- Mesh can be safely used in revisional surgery.

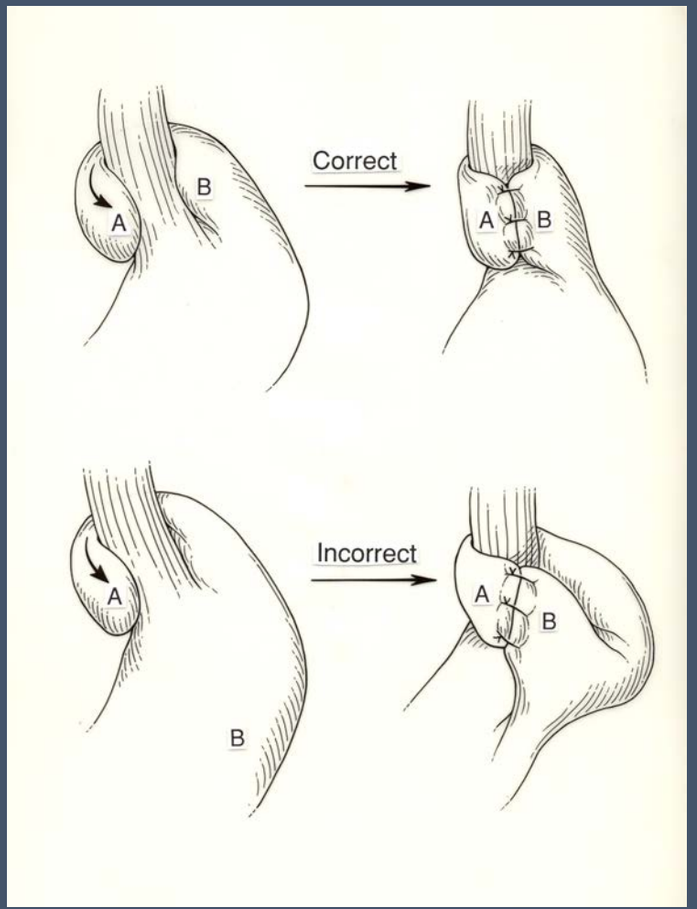
- *Hunter JG et al Ann Surg230:595-604*
- *Landen S Obes Surg 15:435-438*
- *Frantzides CT et al J Laparoscopic Adv Surg Tech A 19:135-139*

ASI
THE ASSOCIATION OF SURGEONS OF INDIA

Patterns of Failure







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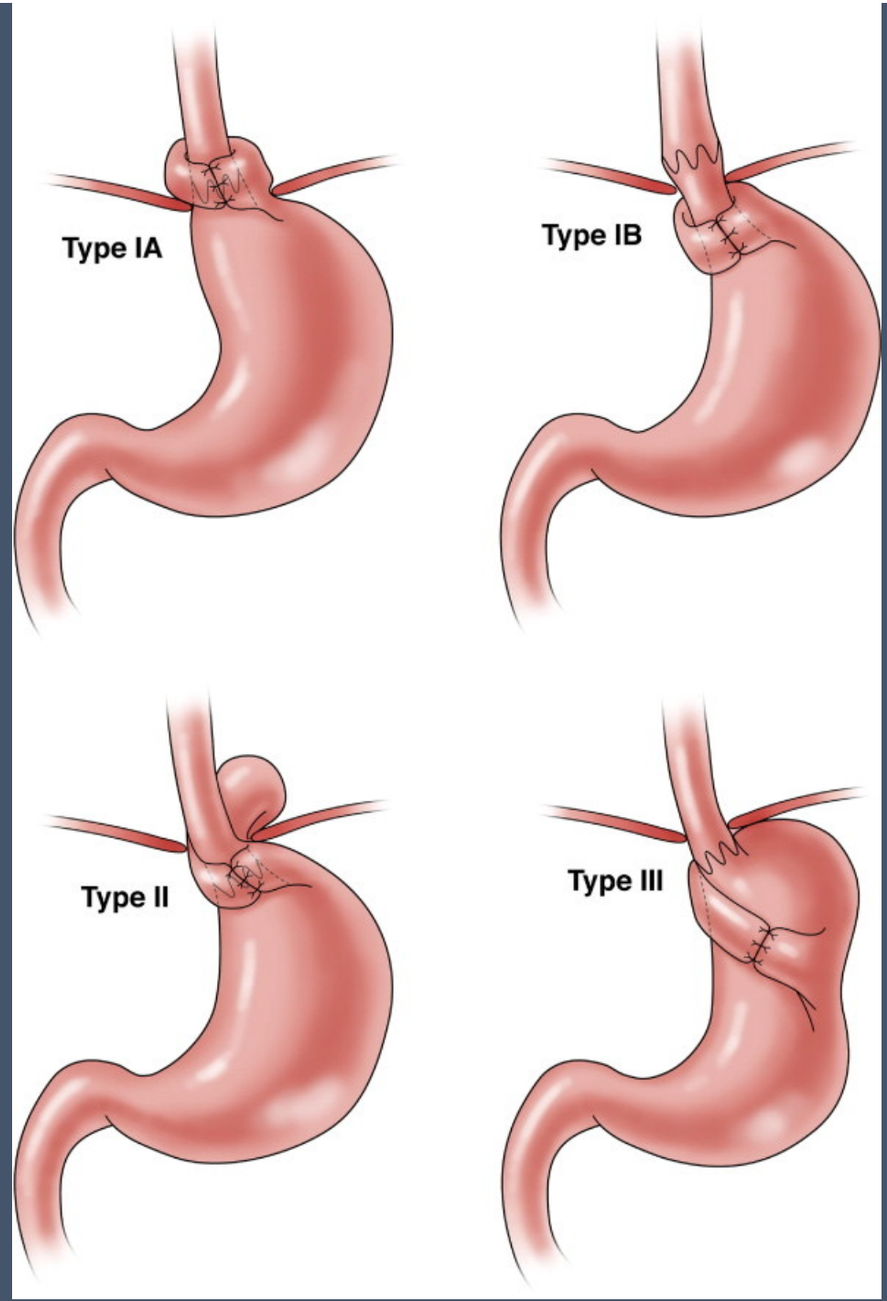

HARVARD
MEDICAL SCHOOL

Imaging Findings of Successful and Failed Fundoplication[1]

Alberto I. Carbo, MD
Roger H. Kim, MD
Thomas Gates, MD
Horacio R. D'Agostino, MD

Abbreviations: GERD = gastroesophageal reflux disease, LES = lower esophageal sphincter

RadioGraphics 2014; 34:1873–1884

Published online 10.1148/rg.347130104

Content Codes: CT GI

[1]From the Departments of Radiology (A.I.C., T.G., H.R.D.) and Surgery (R.H.K.), Louisiana State University Health Sciences Center, 1501 Kings Hwy, Shreveport, LA 71103. Presented as an education exhibit at the 2012 RSNA Annual Meeting. Received October 14, 2013; revision requested January 31, 2014, and received March 4; accepted May 21. For this journal-based SA-CME activity, the author H.R.D. has provided disclosures (see p 1883); all other authors, the editor, and the reviewers have disclosed no relevant relationships. **Address correspondence to** A.I.C. (e-mail: *acarbo@lsuhsc.edu*).

SA-CME LEARNING OBJECTIVES

After completing this journal-based SA-CME activity, participants will be able to:

- Describe the mechanisms that prevent gastroesophageal reflux and esophageal damage.
- Discuss the indications for and techniques of Nissen fundoplication.
- Recognize radiologic findings of various types of failed fundoplication.

See www.rsna.org/education/search/RG.

TEACHING POINTS

See last page

Postoperative imaging findings contribute to the diagnosis of successful and failed fundoplication procedures. Gastroesophageal reflux disease, a common illness in the United States, is primarily treated medically but may require surgery if there are persistent symptoms or reflux complications despite medical treatment. Laparoscopic Nissen fundoplication has become the most used and successful surgical antireflux procedure since its introduction in 1991. Radiologists should understand the anatomy of the esophagogastric junction, antireflux and esophageal protective mechanisms, and preoperative radiologic findings that contribute to selection of the surgical technique, as well as the most commonly used antireflux operations and their indications. Barium examination and computed tomography of the thorax and abdomen play an important role in the follow-up of patients with gastric fundoplication, including evaluation of surgical effectiveness and detection and characterization of postoperative complications. Failed fundoplications are classified into six types: tight Nissen, incompetent repair, disruption of the wrap, stomach slippage above the diaphragm, slipped Nissen, and transdiaphragmatic wrap herniation. Classification is based on radiologic visualization of the obstructed esophageal lumen, recurrence of gastroesophageal reflux, integrity and location of the gastric wrap, stomach slippage, and recurrence of hiatal hernia. Imaging findings are useful in detecting complications, providing anatomic information to identify the cause of surgical failure, and selecting appropriate medical or surgical management.

Introduction

This article reviews imaging findings at barium examination and computed tomography (CT) used to evaluate patients before antireflux surgery and after successful and failed fundoplication procedures. A brief description of the anatomy of the gastroesophageal

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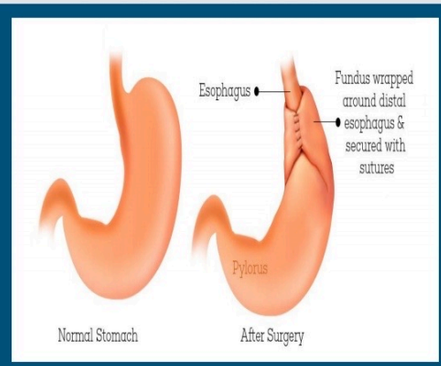
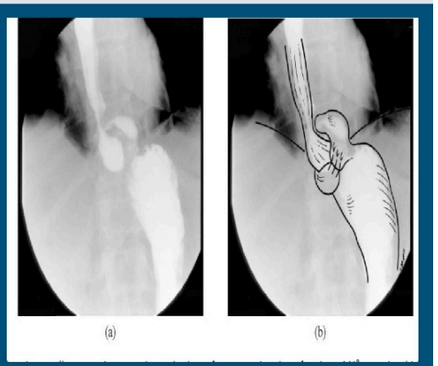
Normal appearance post-Nissen

"Stacked coils" appearance

"Inverted 3" sign

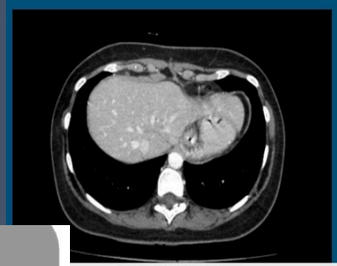


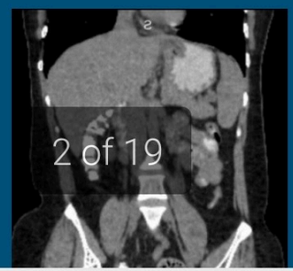
Normal nissen's fundoplication surgery

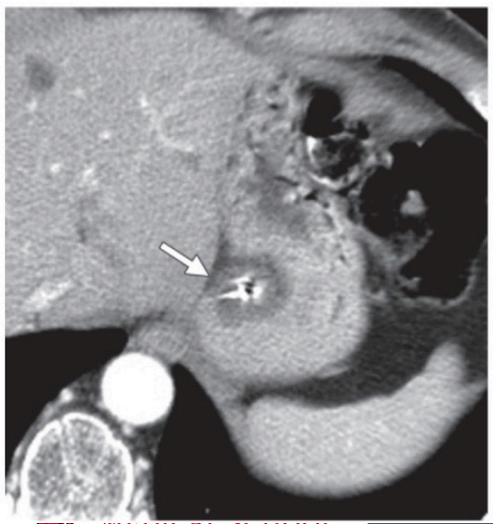


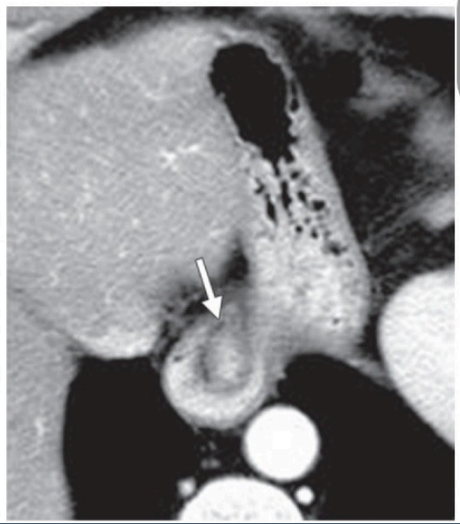
BARIUM SWALLOW IMAGE SHOWING FUNDOPLICATION SURGERY

1. 23 year old female post fundoplication status

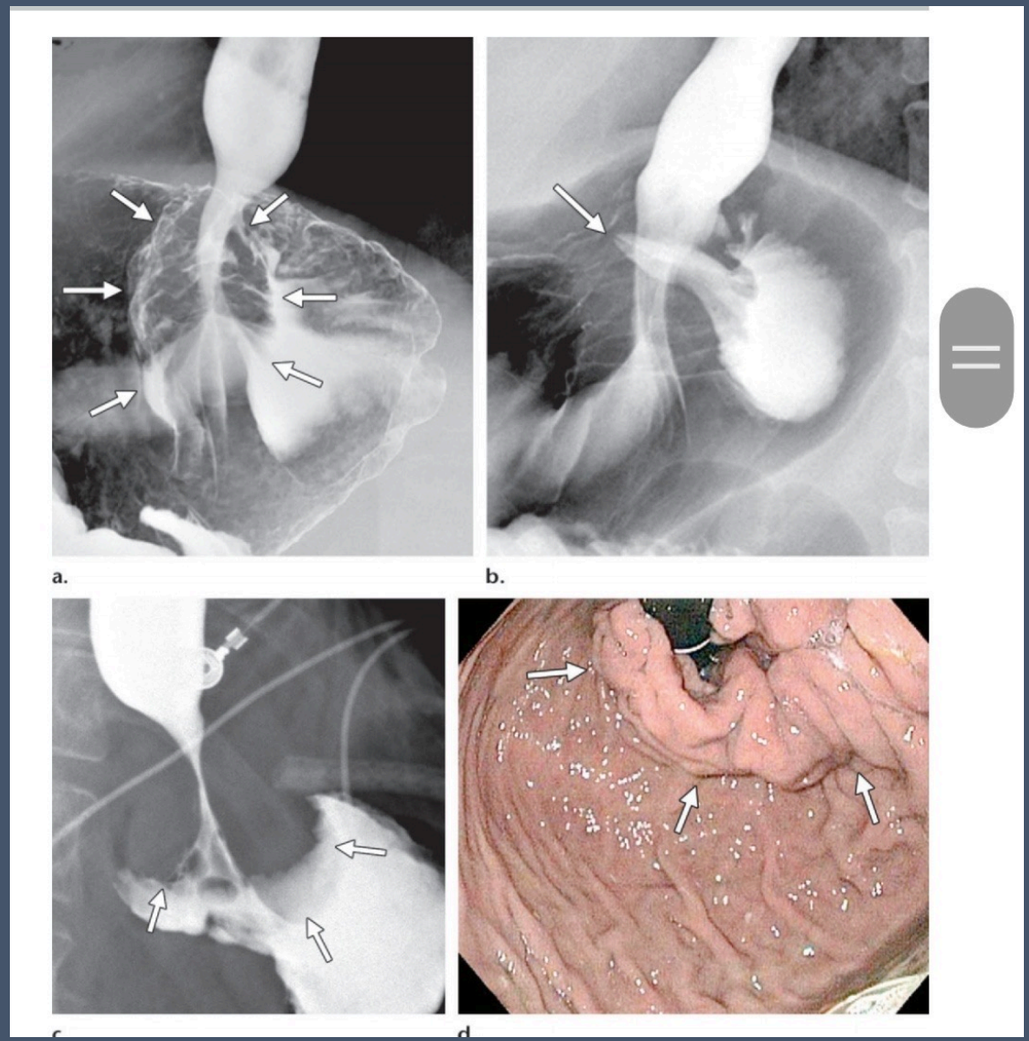








MEDICAL SCHOOL



HARVARD MEDICAL SCHOOL

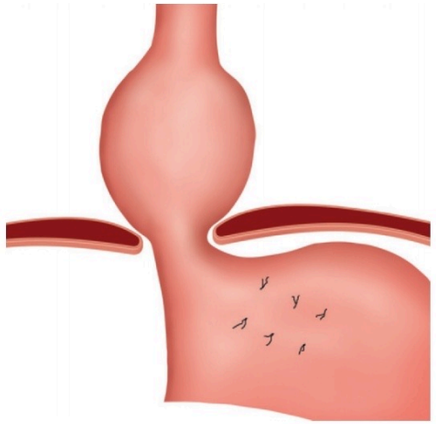
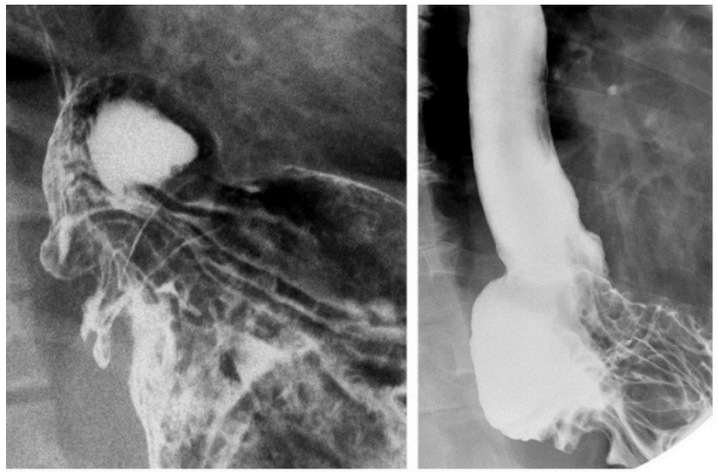


Figure 7. Drawing shows complete disruption of a fundoplication wrap, with recurrence of a hiatal hernia.



3. 42 year old male ,post fundoplication status

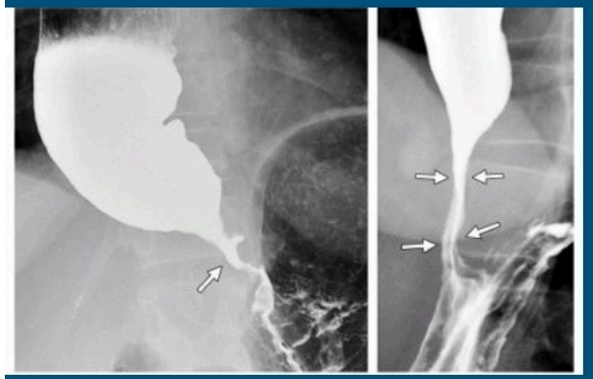
CT CONTRAST ABDOMEN SHOWING WRAP MIGRATION ABOVE THE DIAPHRAGM

CORONAL SECTION OF CT ABDOMEN SHOWING WRAP MIGRATION

SAGITTAL SECTION OF CT ABDOMEN SHOWING WRAP MIGRATION

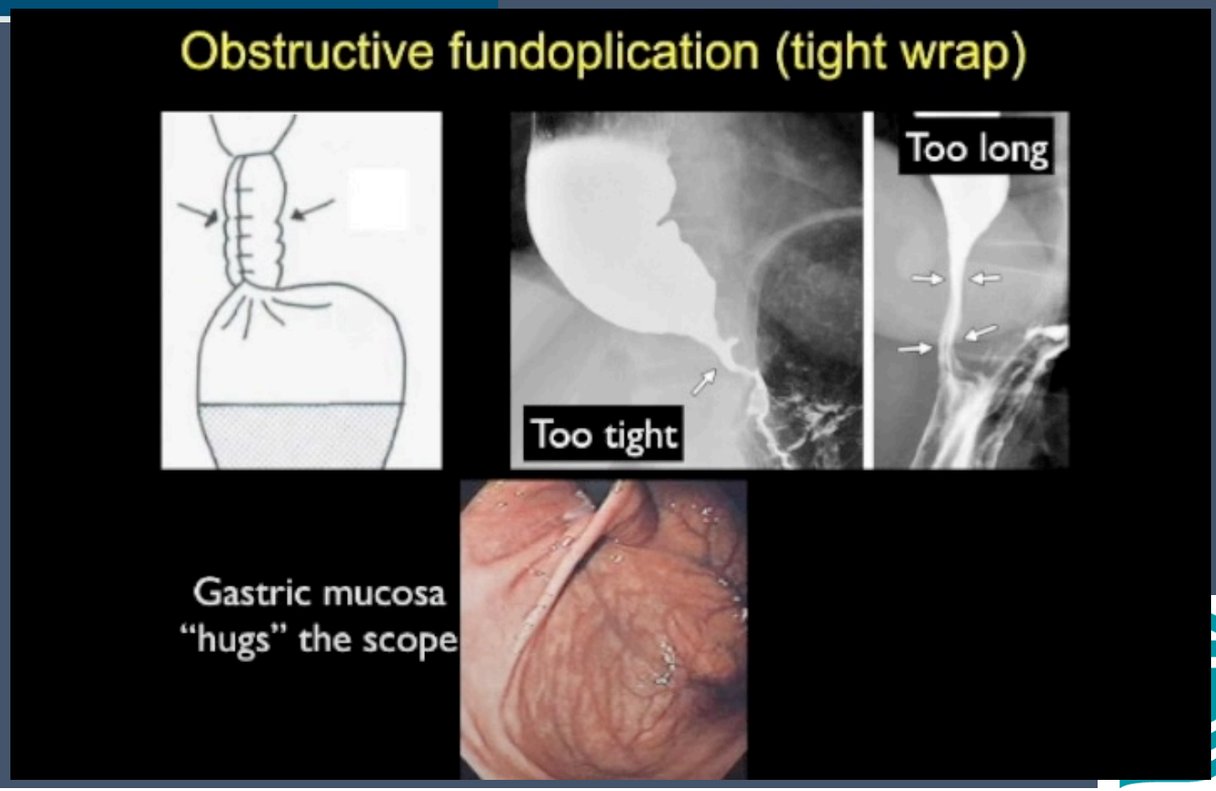
HARVARD MEDICAL SCHOOL

TIGHT NISSEN'S



BARIUM SWALLOW SHOWING TIGHT NISSEN'S

AXIAL CT CONTRAST ABDOMEN SHOWING TIGHT NISSEN'S



HARVARD MEDICAL SCHOOL

Fundoplication Complications, Characteristic Clinical Findings, and Imaging Correlation

	Clinical Findings		Imaging Correlation			
Complication	Obstruction Symptoms	Reflux Symptoms	Intact Wrap	Supradiaphragmatic Wrap Migration	Slipped Stomach	Recurrent Hiatal Hernia
Tight Nissen	Yes	No	Yes	No	No	No
Patulous Nissen	No	Yes	Yes	No	No	No
Wrap disruption	No	Yes	No	NA	No	Yes
Supradiaphragmatic gastric slippage	Yes	Yes	Yes	No	Yes	Yes
Slipped Nissen	Yes	Yes	Yes	No	Yes	No
Transdiaphragmatic wrap migration	Yes	Yes	Yes	Yes	No	NA

Note.—NA = not applicable.

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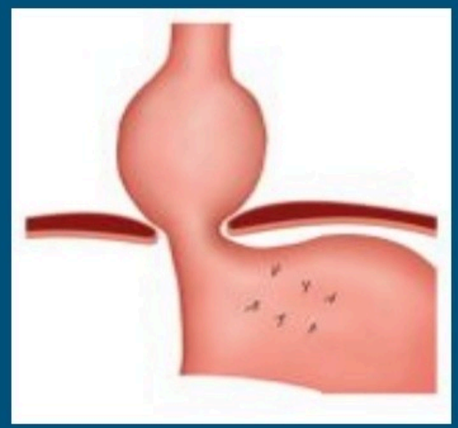
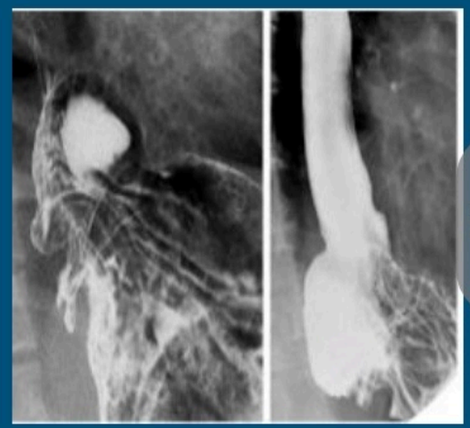
DISRUPTION OF WRAP (HINDER TYPE I)





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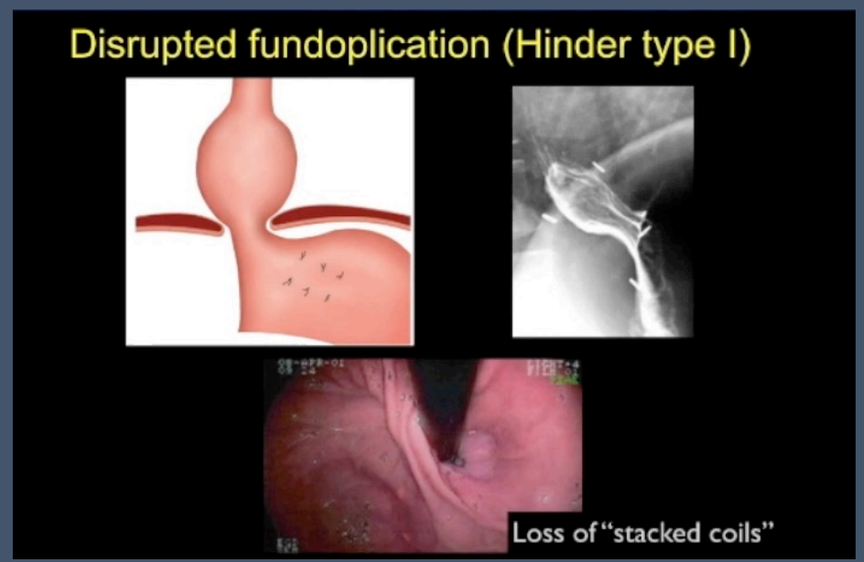

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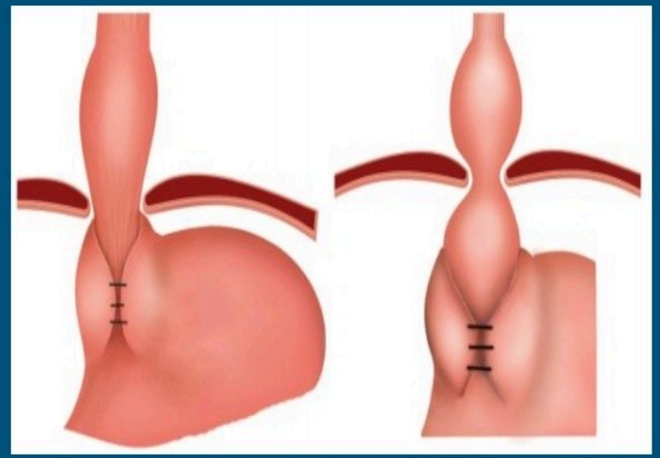
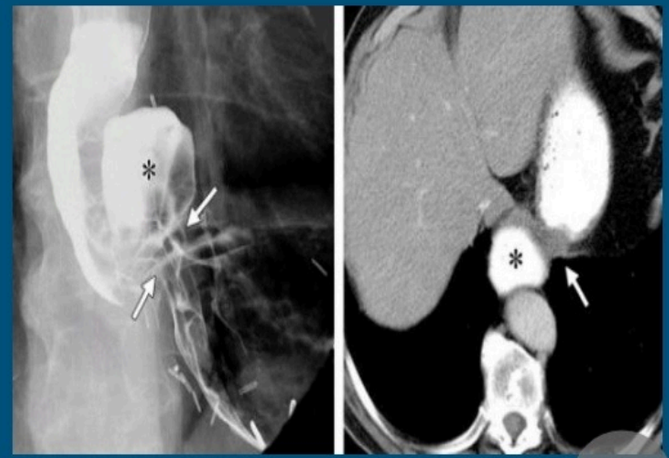
MEDICAL SCHOOL

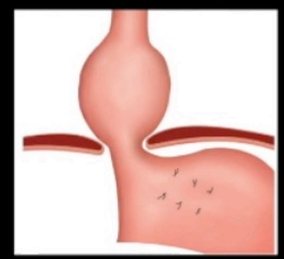
STOMACH SLIPPAGE ABOVE THE DIAPHRAGM (HINDER TYPE II)

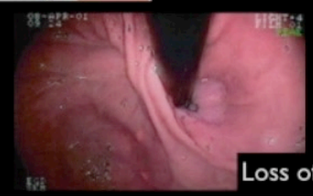




Fundoplication wrap is maintained and remains infradiaphragmatic, but the proximal part of the stomach slips and re-enters the chest.

Disrupted fundoplication (Hinder type I)





Loss of "stacked coils"

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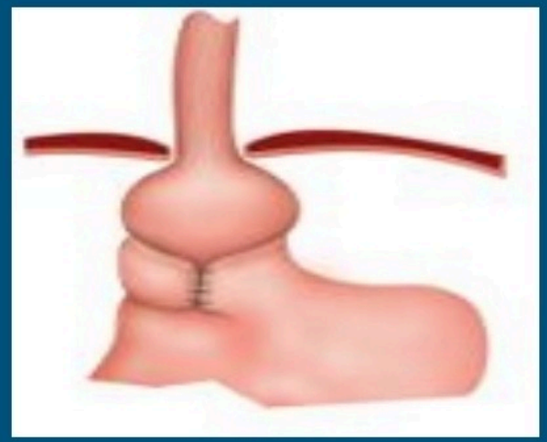
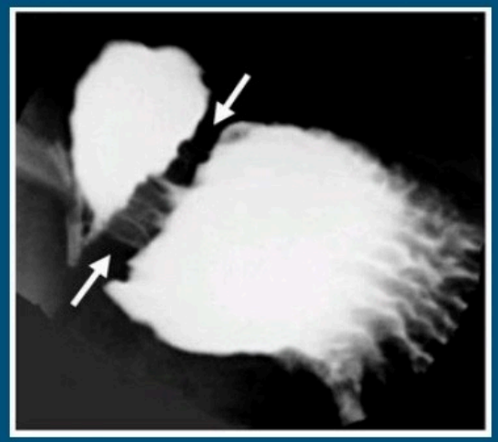
SLIPPED NISSEN'S (HINDER TYPE III)





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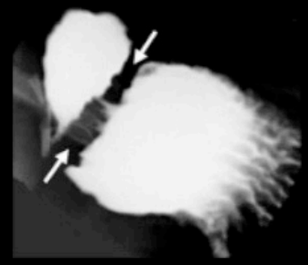
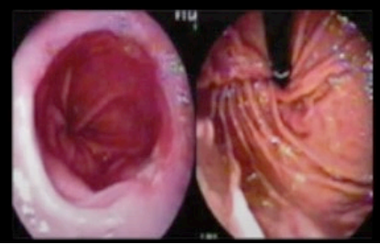
Slippage of the proximal stomach through the unbroken wrap creates a pouch below the diaphragm

Slipped Nissen with abdominal stomach (Hinder type III)

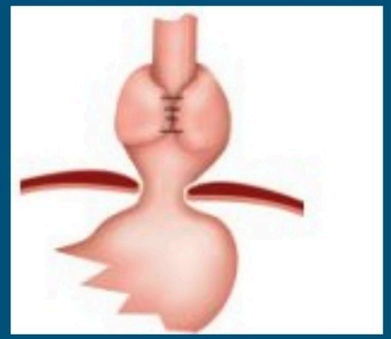


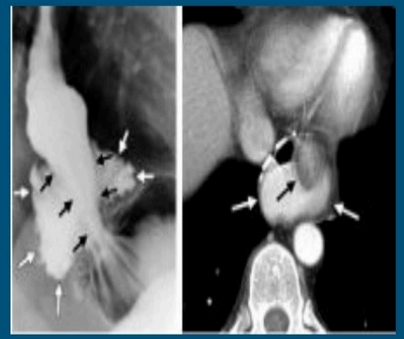
Stomach above wrap but below diaphragm



HARVARD MEDICAL SCHOOL

TRANSDIAPHRAGMATIC WRAP HERNIATION (HINDER TYPE IV)





Intact gastric wrap migrates to the chest through the hiatus of the diaphragm

=

Intra-thoracic wrap migration (Hinder type IV)

Stomach and wrap above the diaphragm

Intact wrap way above the diaphragm

Diaphragmatic pinch

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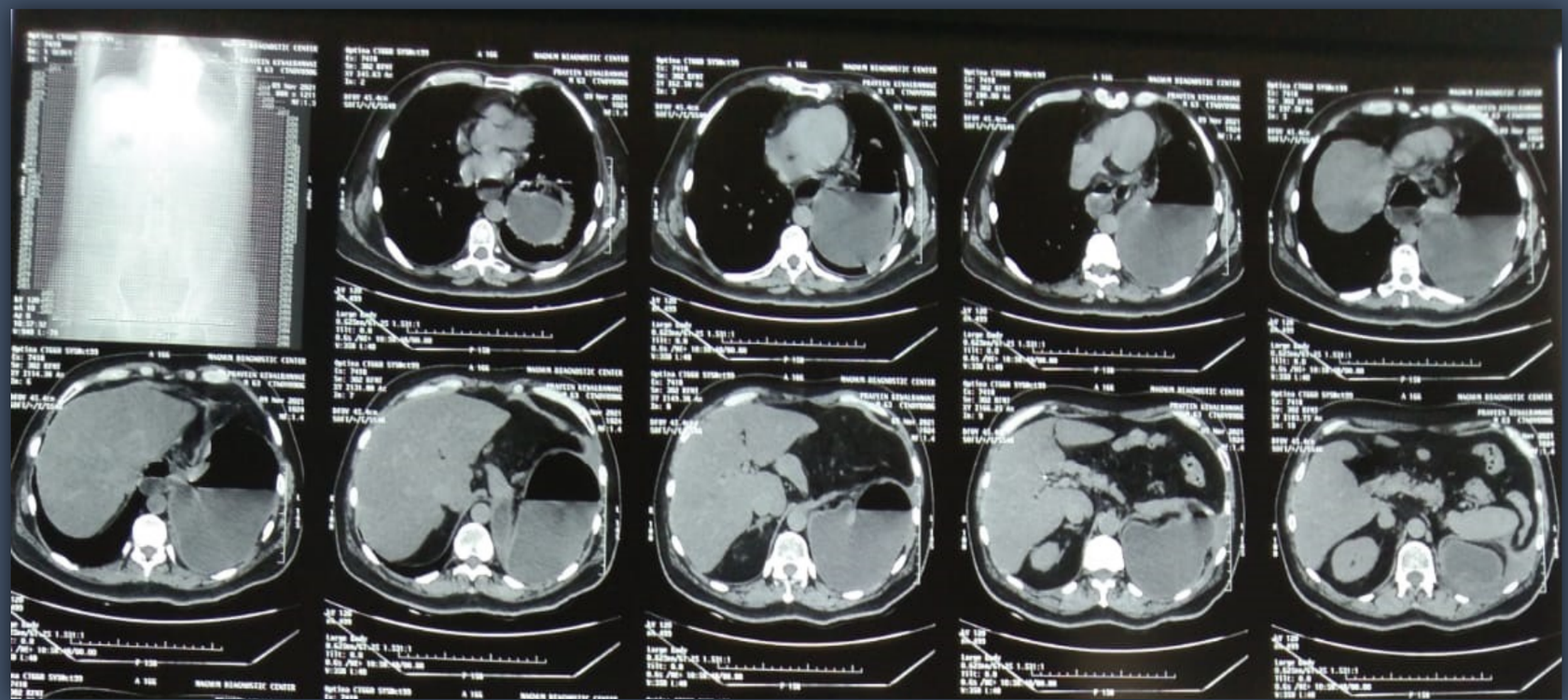
Pre-surgery:



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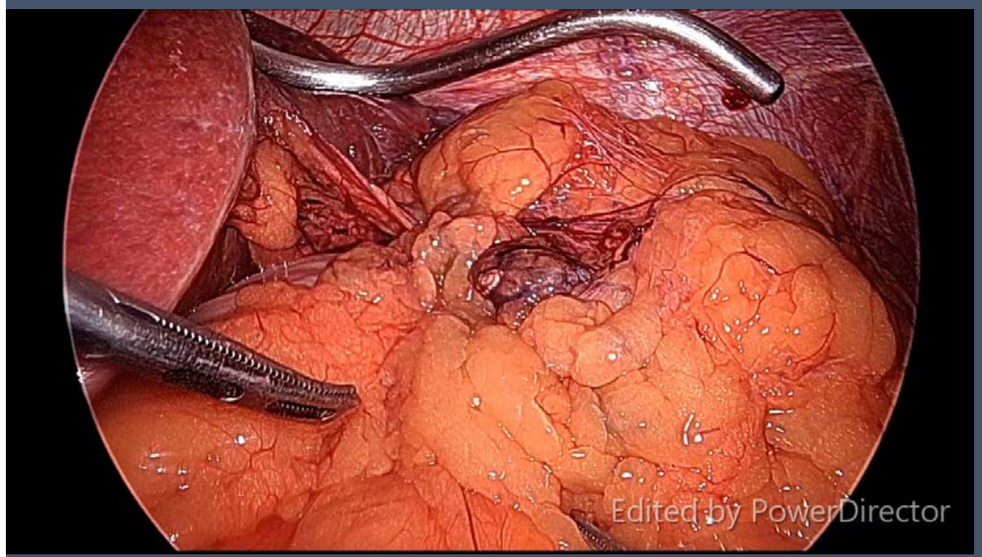

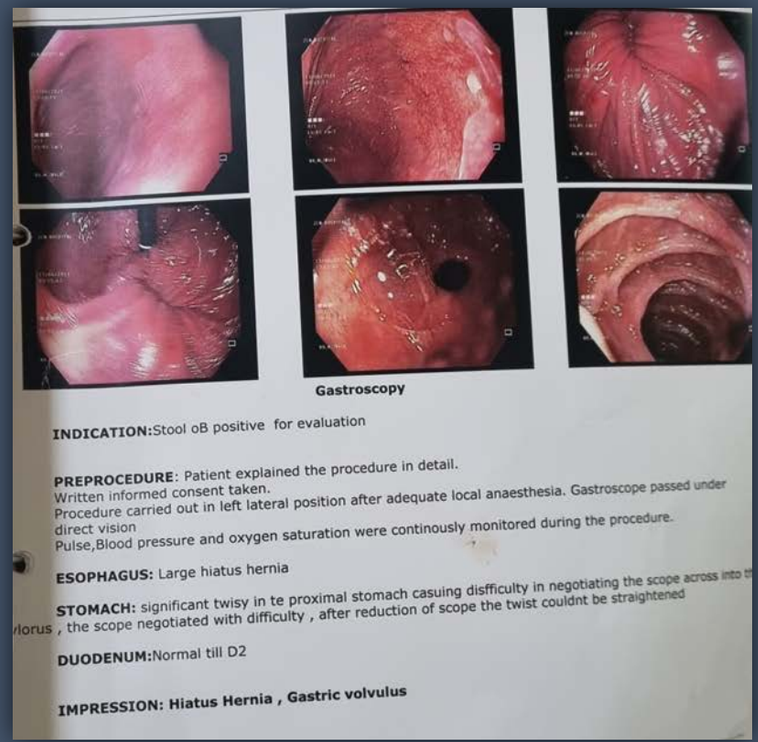

Gastroscopy

INDICATION: Stool oB positive for evaluation

PREPROCEDURE: Patient explained the procedure in detail.
Written informed consent taken.
Procedure carried out in left lateral position after adequate local anaesthesia. Gastroscope passed under direct vision
Pulse,Blood pressure and oxygen saturation were continously monitored during the procedure.

ESOPHAGUS: Large hiatus hernia

STOMACH: significant twisy in te proximal stomach casuing disfficulty in negotiating the scope across into t
lorus , the scope negotiated with difficulty , after reduction of scope the twist couldnt be straightened

DUODENUM: Normal till D2

IMPRESSION: Hiatus Hernia , Gastric volvulus

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INTRA-OP VIDEO

HARVARD MEDICAL SCHOOL

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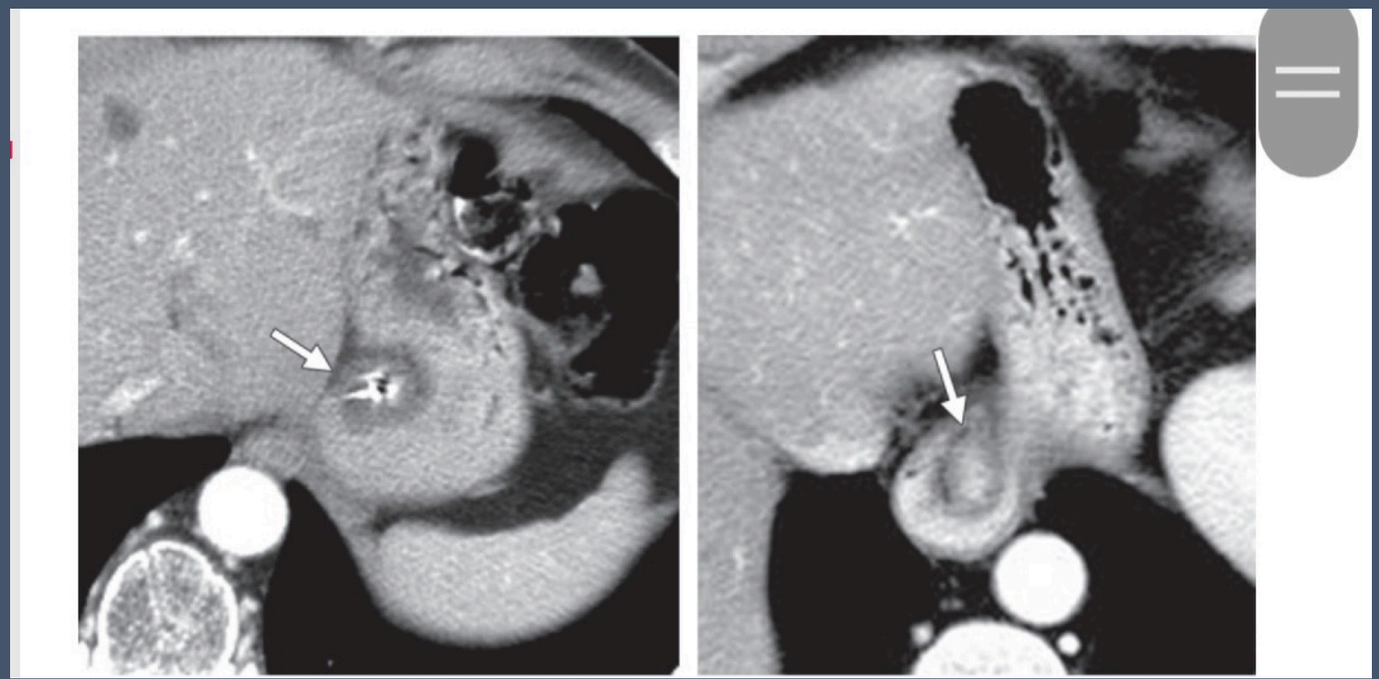

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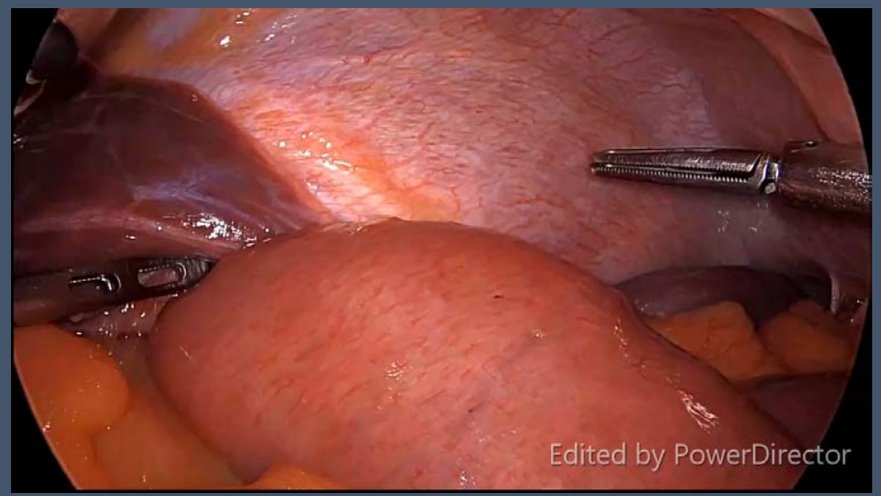
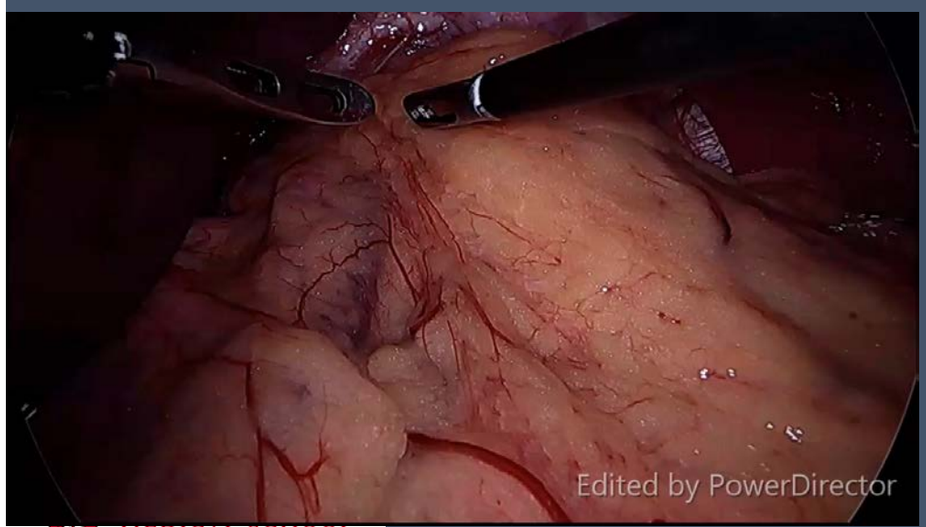
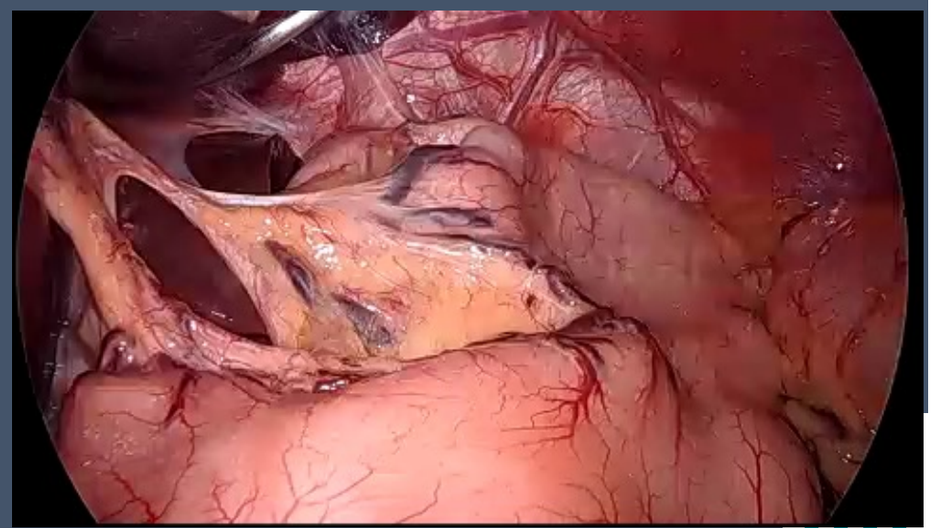
WRAP MIGRATION







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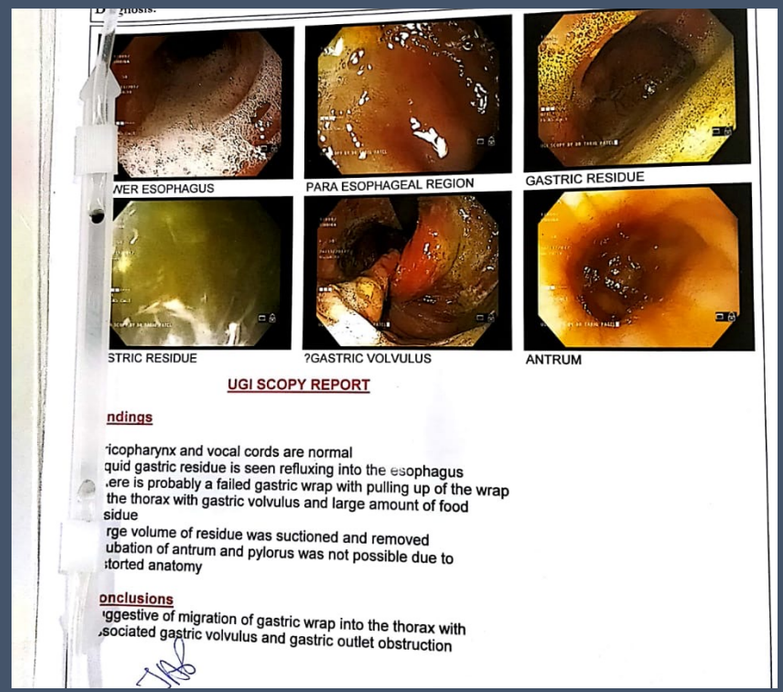
PSEUDOACHALASIA



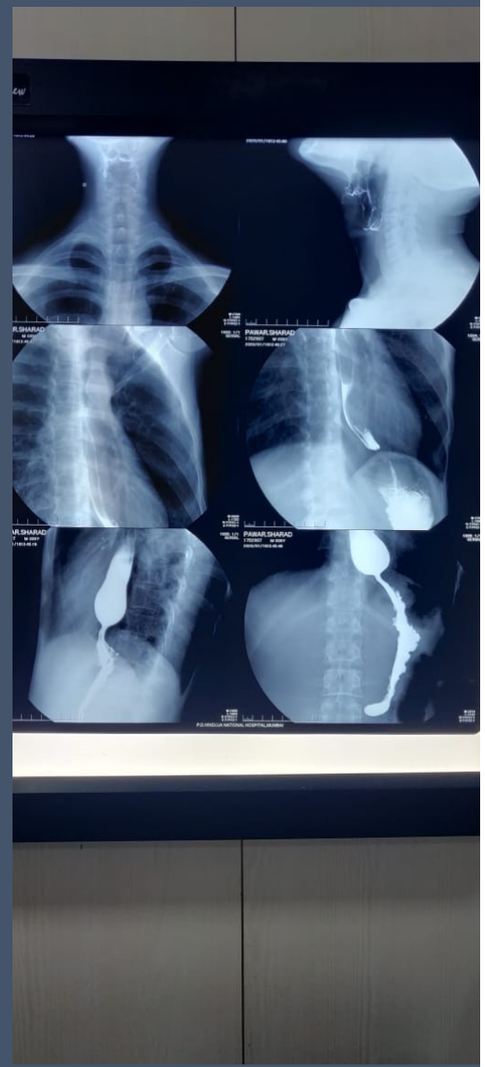
UGI SCOPY REPORT

ndings

ricopharynx and vocal cords are normal
quid gastric residue is seen refluxing into the esophagus
ere is probably a failed gastric wrap with pulling up of the wrap the thorax with gastric volvulus and large amount of food sidue
rge volume of residue was suctioned and removed
ubation of antrum and pylorus was not possible due to torted anatomy

onclusions

ggestive of migration of gastric wrap into the thorax with sociated gastric volvulus and gastric outlet obstruction



Lap. Redo Fundoplication

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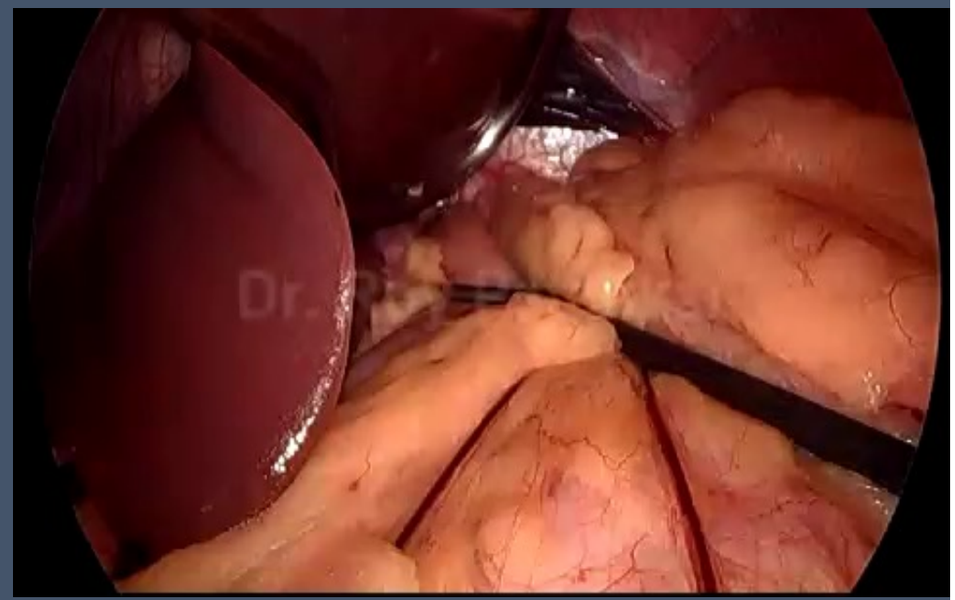
Lap. Redo Fundoplication



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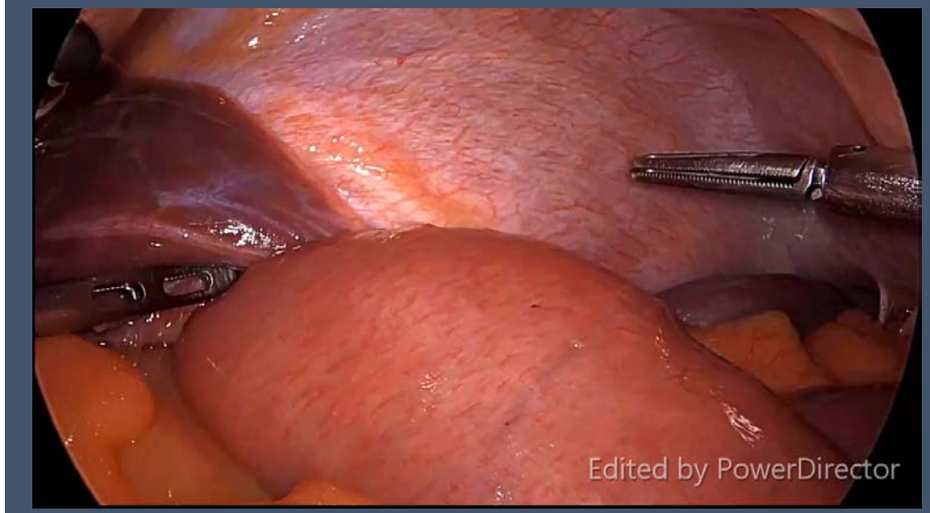
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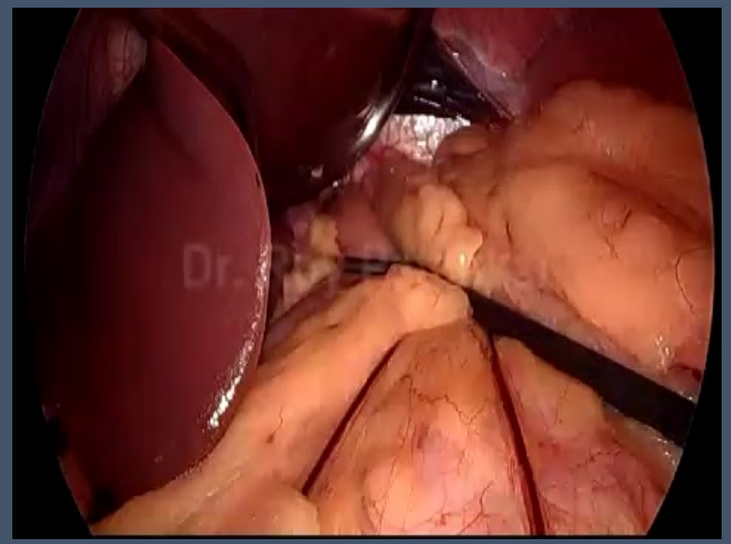

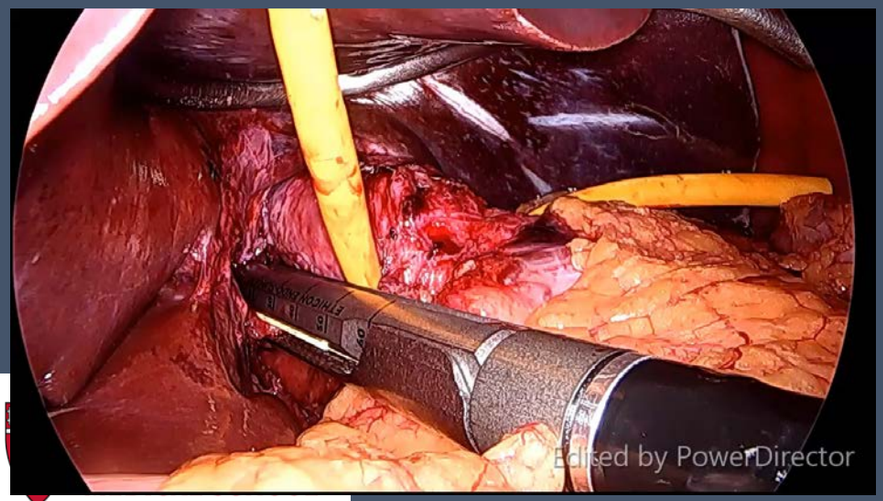
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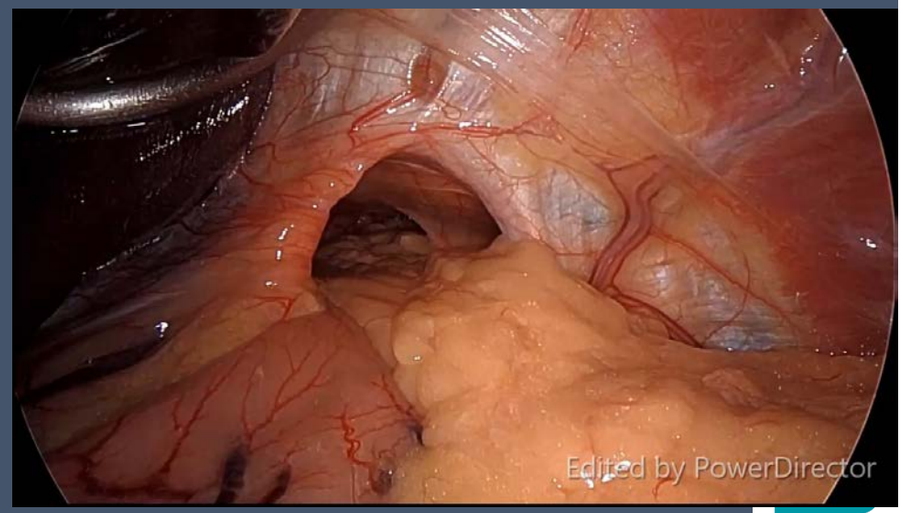
Edited by PowerDirector

THORACO-LAPAROSCOPIC APPROACH

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MESH EROSION

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ORIGINAL ARTICLE

Prevention of Mesh-related Complications at the Hiatus: A Novel Technique Using Falciform Ligament

Pranav Mandovra[1], Vishakha R Kalikar[2], Roy V Patankar[3]

Abstract

Aim: In this study, a technical modification has been performed by using falciform ligament between the mesh and esophagus thereby preventing mesh to come in direct contact with the hollow viscera so reducing mesh-related complications.

Materials and methods: From January 2016 to December 2017, patients requiring the use of prosthetic mesh at the hiatus during laparoscopic antireflux surgery (LARS) surgery were included in the study. Principles of an ideal LARS have adhered. After mesh repair at hiatus and appropriate fundoplication, the falciform ligament was released from its attachment to the ventral abdominal wall and was placed between the mesh and the posterior esophagus avoiding direct contact between the mesh and hollow viscera. Postoperatively patients were followed up for a minimum of 2 years. A retrospective analysis was done of the prospectively collected data.

Results: Sixteen patients were included in the study (12 patients had redo surgery and four had large hiatus hernia requiring prosthesis). Average age of the patients was 48.5 years and the average BMI was 24.8. The mean operative time was 128.2 minutes. None of the patients had a recurrence of hiatus hernia, long-term dysphagia, any mesh-related complication, or any unexpected event related to surgery on 2-year follow-up.

Conclusion: This innovative technique of using falciform ligament as a bridge between the mesh and the esophagus prevents the mesh-related complication without compromising the strength of hiatal repair.

Clinical significance: To prevent the recurrence of hiatus hernia, the use of prosthetic meshes is advocated in patients with large hiatal surface areas. Concern about the safety of mesh at the hiatus has been there. This technique helps in reducing the mesh-related complication at the hiatus.

Keywords: Falciform ligament, Mesh at hiatus, Prevention of mesh complications.

World Journal of Laparoscopic Surgery (2022): 10.5005/jp-journals-10033-1497

HARVARD MEDICAL SCHOOL

Novel "starburst" mesh configuration for paraesophageal and recurrent hiatal hernia repair: comparison with keyhole mesh configuration

Emily Grimsley [1], Ana Capati [2], Adham R Saad [2], Christopher DuCoin [2], Vic Velanovich [2]

Results: From 7/2017 to 8/2019, 51 cases using the keyhole mesh were completed. Sliding hiatal hernia comprised 4%, paraesophageal hernia (PEH) 64% and recurrent hiatal hernia (RHH) 34% of cases. Distribution of fundoplication type: 2% none, 41% Nissen, 41% Toupet, 8% Dor, 2% Collis-Nissen, and 6% Collis-Toupet. 30-day complication rate 31%. Long-term outcomes: recurrent hiatal hernia 16%, dysphagia 12%, dysphagia requiring dilation(s) 10%, recurrent GERD symptoms 4%, and reoperation 14%. From 10/2020 to 8/2021, 58 cases using the starburst configuration were completed. PEH comprised 60% and RHH 40%. Distribution of fundoplication type: 10% none, 40% Nissen, 43% Toupet, 5% MSA, 2% Collis-Toupet. 30-day complication rate 16%. Long-term outcomes: recurrent hiatal hernia 19%, dysphagia 14%, dilations 5%, recurrent GERD symptoms 9%, and reoperations 3%.

Conclusion: The starburst mesh configuration compares favorably with the keyhole configuration with respect to postoperative dysphagia, need for esophageal dilation, and GERD symptom recurrence, with similar recurrence rates. We are continuing to further refine this technique and study the long-term outcomes.

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Evolution From the U-shaped to Keyhole-shaped Mesh Configuration in the Repair of Paraesophageal and Recurrent Hiatal Hernia

Sarah Keville [1], Lauren Rabach, Adham R Saad, Beth Montera, Vic Velanovich

Results: Of patients undergoing PEH/RHH repair between 2013 and 2019, 138 were repaired using mesh. Of these, 88 were repaired using the U-shaped configuration and 50 using the keyhole configuration. The U-shaped configuration was used for PEH in 72% and RHH in 28%, while the keyhole configuration was used for PEH in 66% and RHH in 34%. Thirty patients suffered postoperative complications, although there was no difference between the groups. Overall, 28 patients in the U-shaped configuration group (31.8%) had a recurrence of their hiatal hernia identified, compared with 7 patients (14.6%) in the keyhole group (P=0.039). The median time to last follow-up was 21 months (range: 1 to 85) in the U-shaped group and 8 months (range: 1 to 23) in the keyhole group. There was no difference in median time to recurrence, postoperative dysphagia, dilations, or strictures.

Conclusions: The keyhole pattern mesh was not associated with a higher complication rate compared with the U-shape pattern. Although this study was not a direct comparison between the configurations, it does suggest that the keyhole pattern may lead to fewer recurrences.

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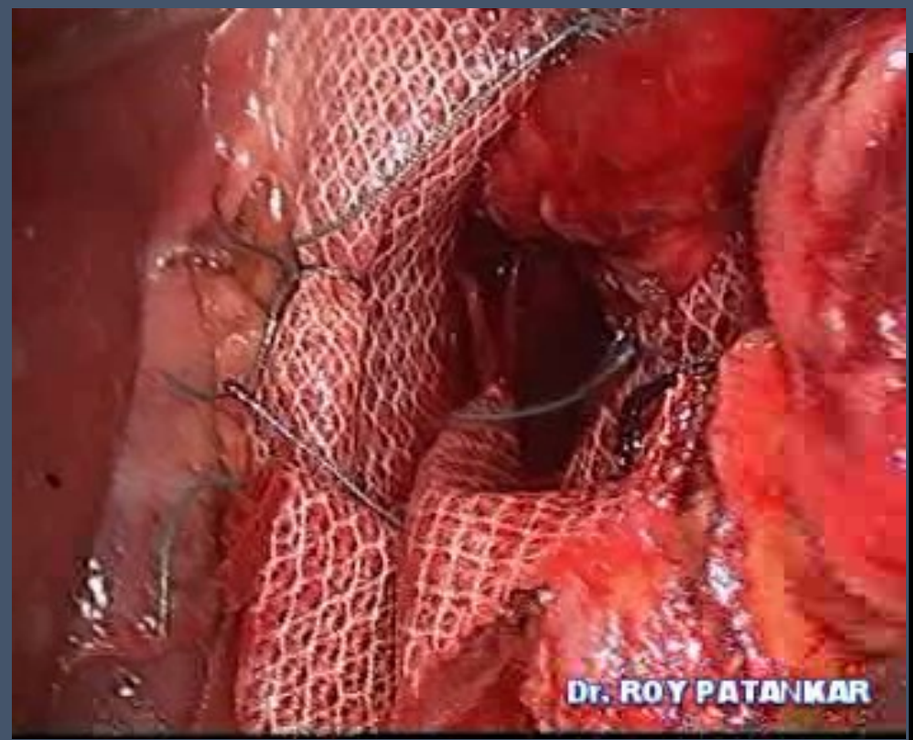
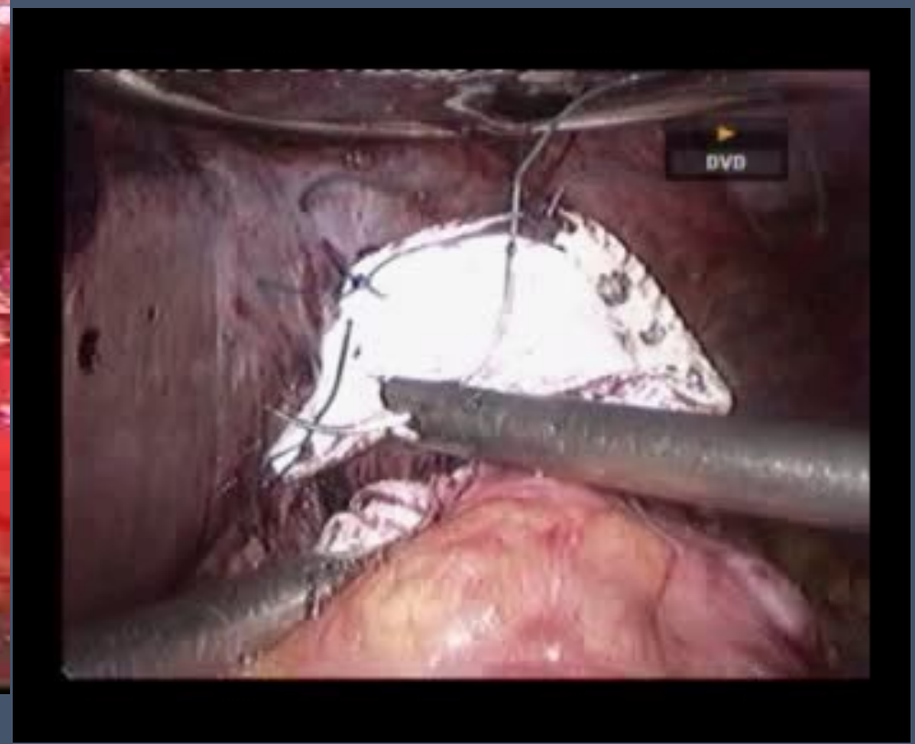
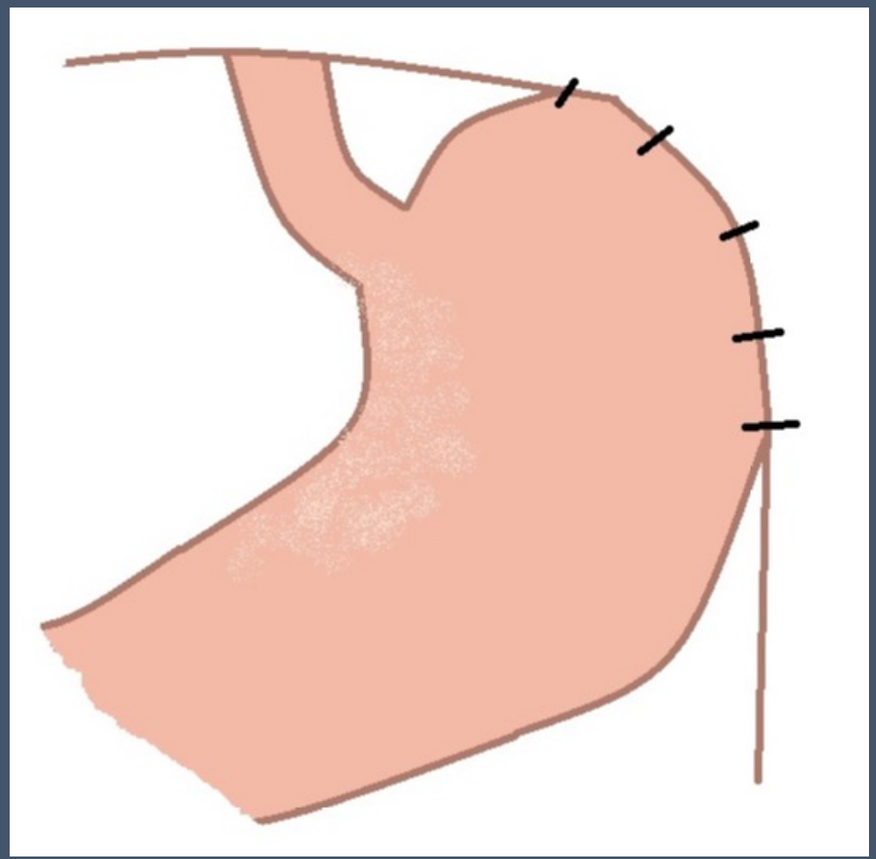
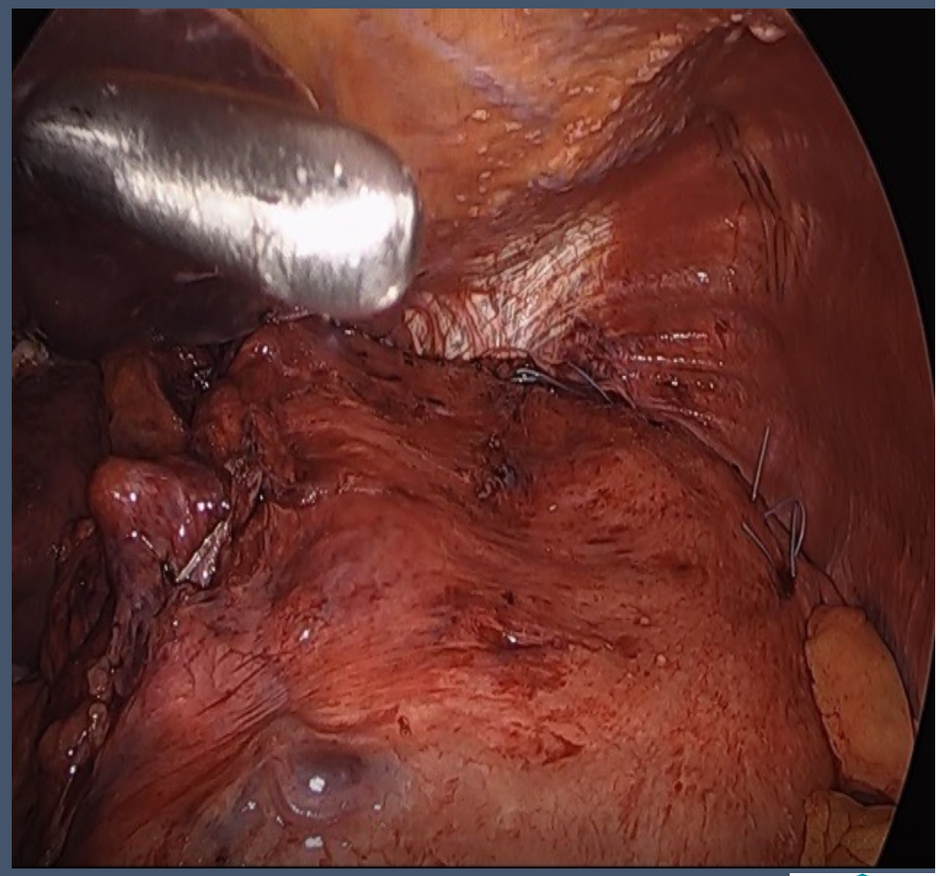
Radiological recurrence





GASTROPEXY ALONE





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> Ann Surg. 2021 Apr 7. doi: 10.1097/SLA.0000000000004902. Online ahead of print.

Sutured Versus Mesh-Augmented Hiatus Hernia Repair: A Systematic Review and Meta-Analysis of Randomized Controlled Trials

Josipa Petric [1], Tim Bright, David S Liu, Melissa Y Wee, David I Watson

Objective: This meta-analysis systematically reviewed published randomized control trials (RCTs) comparing sutured versus mesh-augmented hiatus hernia (HH) repair. Our primary endpoint was HH recurrence at short- and long-term follow-up. Secondary endpoints were: surgical complications, operative times, dysphagia and quality of life.

Summary background data: Repair of large hiatus hernias is increasingly being performed. However, there is no consensus for the optimal technique for hiatal closure between sutured versus mesh-augmented (absorbable or non-absorbable) repair.

Methods: A systematic review of Medline, Scopus (which encompassed Embase), Cochrane Central Register of Controlled Trials, Web of Science and PubMed was performed to identify relevant studies comparing mesh-augmented versus sutured HH repair. Data were extracted and compared by meta-analysis, using odds ratio and mean differences with 95% confidence intervals.

Results: Seven RCTs were found which compared mesh-augmented (non-absorbable mesh: n = 296; absorbable mesh: n = 92) with sutured repair (n = 347). There were no significant differences for short-term hernia recurrence (defined as 6-12 months, 10.1% mesh versus 15.5% sutured, P = 0.22), long-term hernia recurrence (defined as 3-5 years, 30.7% mesh vs 31.3% sutured, P = 0.69), functional outcomes and patient satisfaction. The only statistically significant difference was that the mesh repair required a longer operation time (P = 0.05, OR 2.33, 95% CI 0.03-24.69).

Conclusions: Mesh repair for hiatus hernia does not offer any advantage over sutured hiatal closure. As both techniques deliver good and comparable clinical outcomes, a suture only technique is still an appropriate approach.

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PATIENT SELECTION FOR COLLI'S GASTROPLASTY

Mobilize 3-4cm distal esophagus (Type I dissection)

↓

*Assess intra-abd esophageal length (Figure 3)

↓

[<2.5-3cm intra-abd esophagus (10% pts)]

↓

Perform Type II mediastinal dissection (7% pts)

↓

*Re-assess intra-abd esophageal length (Figure 3)

↓

[<2.5-3cm intra-abd esophagus]

↓

Collis gastroplasty (3% pts)

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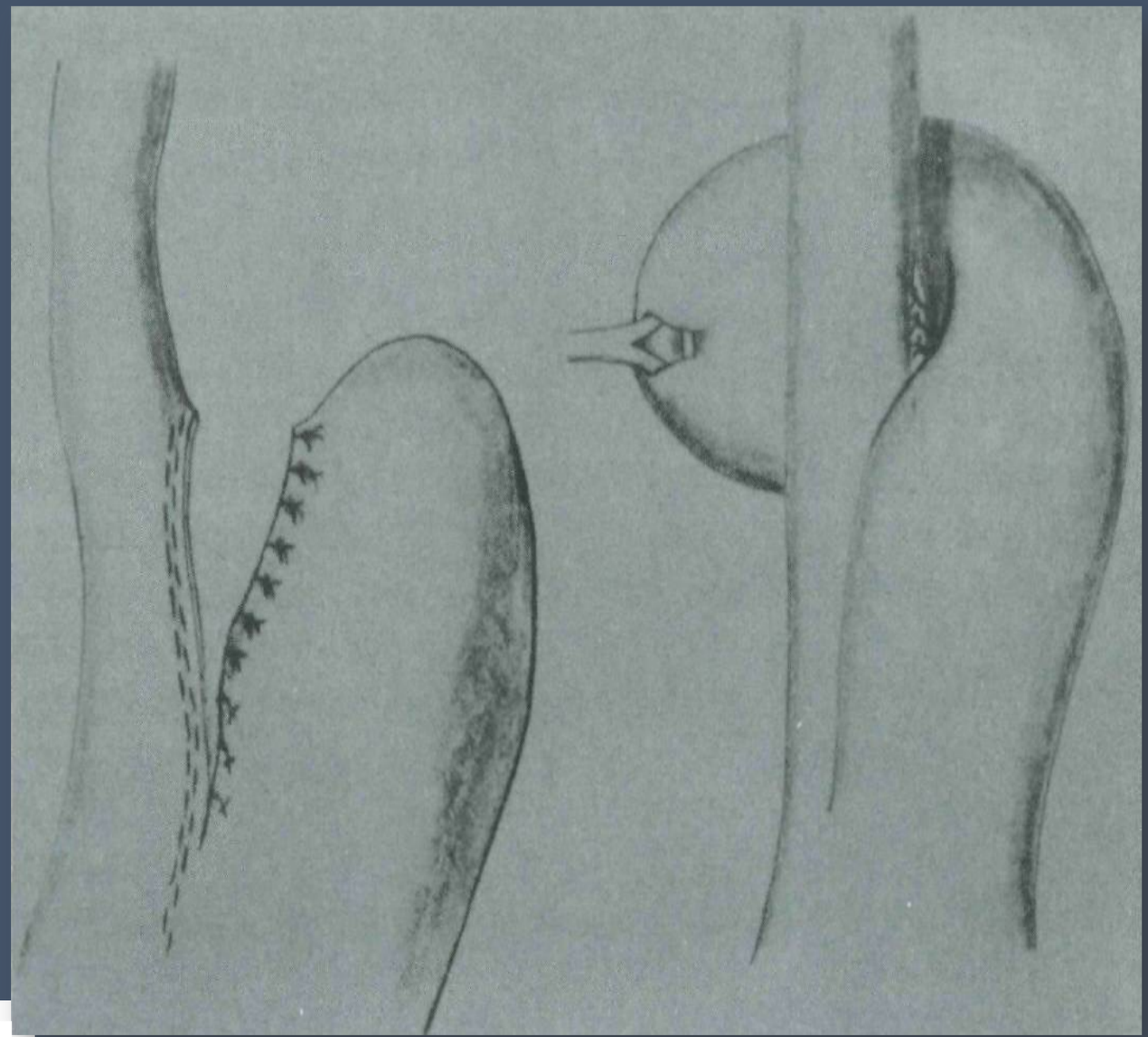
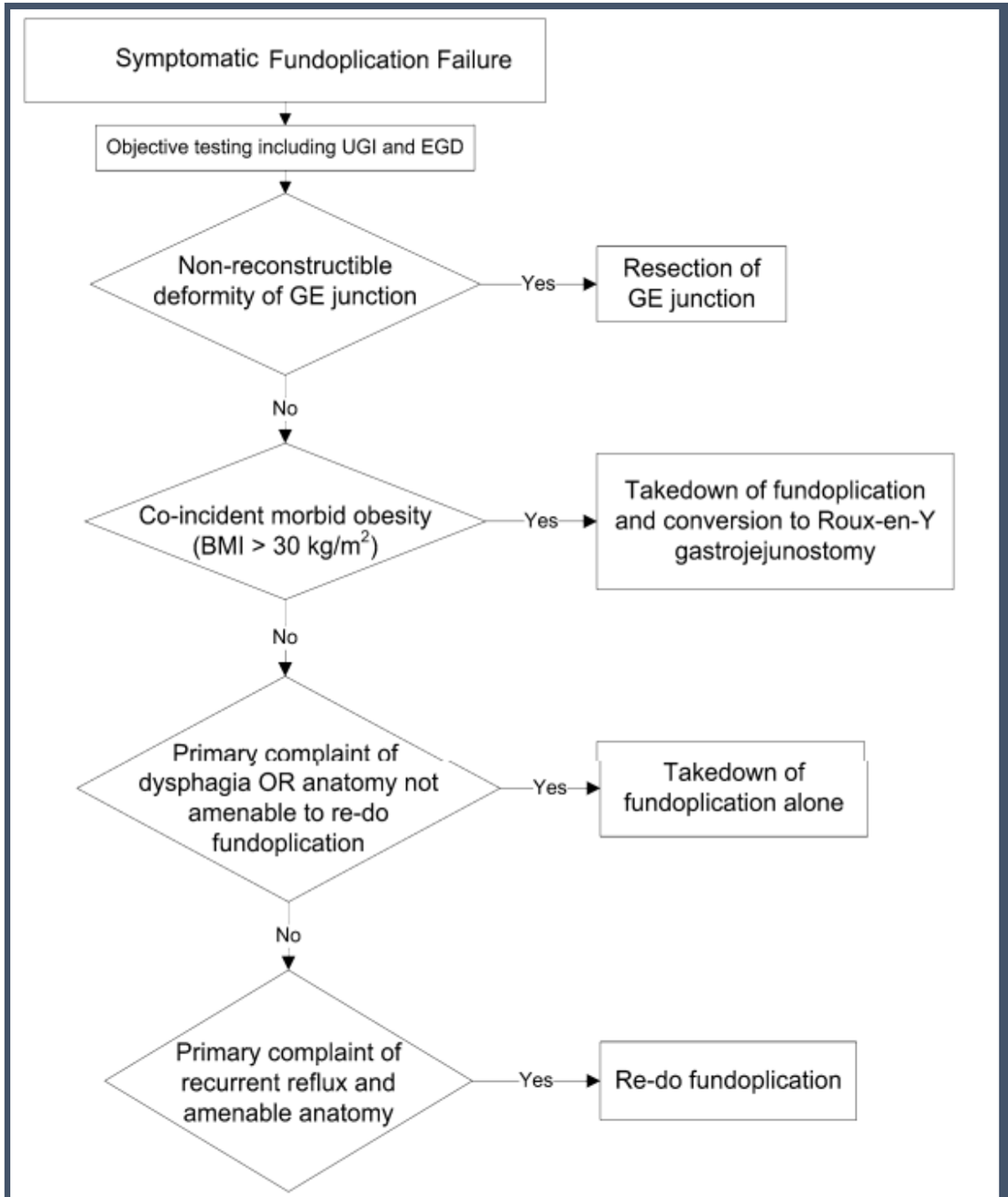
COLLIS



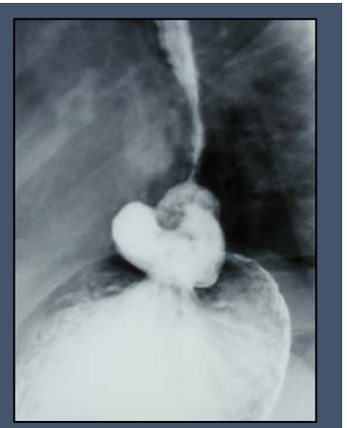
ASI
THE ASSOCIATION OF
SURGEONS OF INDIA



Antiporda M, Jackson C, Smith CD, Thomas M, Elli EF, Bowers SP. Strategies for surgical remediation of the multi-fundoplication failure patient. Surgical endoscopy. 2019 May 15;33(5):1474-81.

Prior Antireflux Surgery

EGD
BaSw



Anatomically Normal

Obvious Anatomic Problem

pH
EMS
GES

Symptom Correlation

Patterns of Failure

EMS GES

No GERD

Confirm GERD

Entertain Other Diagnosis

Redo Antireflux

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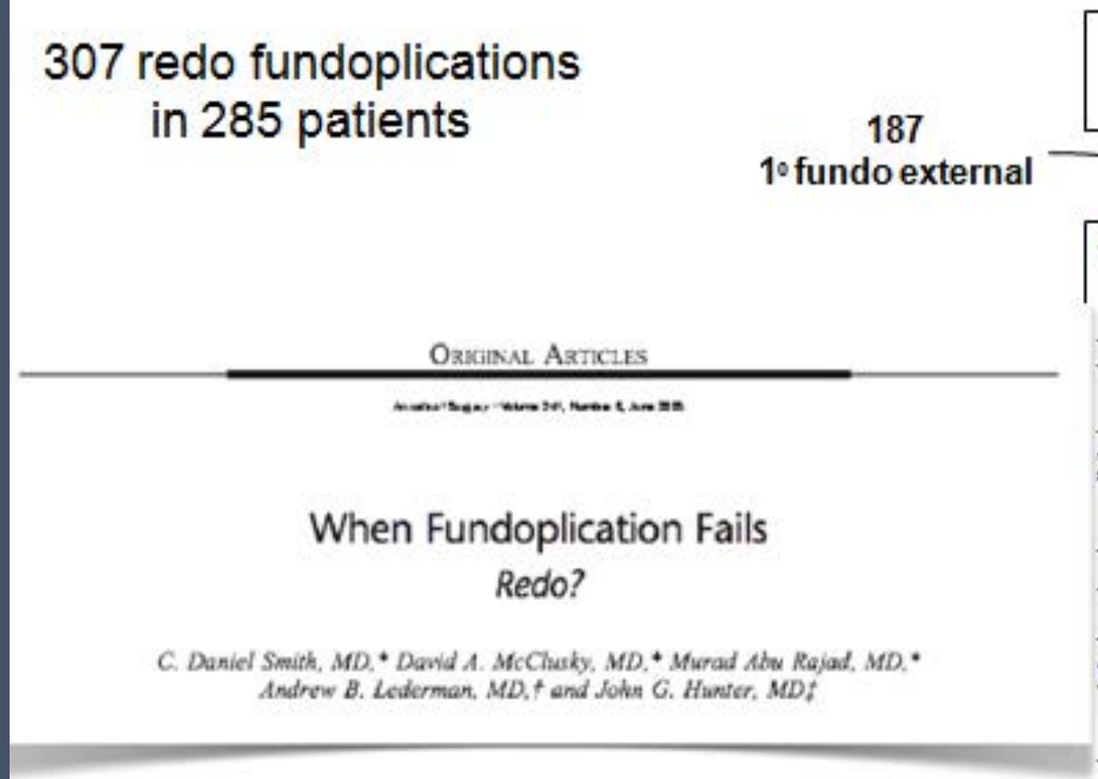
Redo ARS – Success is Possible

307 redo fundoplications
in 285 patients

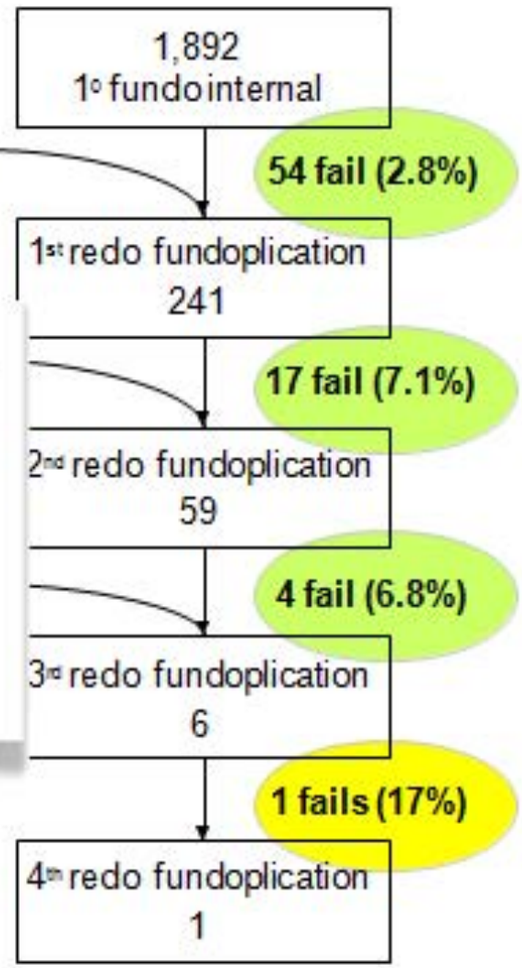
187
1° fundo external



ORIGINAL ARTICLES

When Fundoplication Fails
Redo?

C. Daniel Smith, MD,* David A. McClusky, MD,* Murad Abu Rajad, MD,*
Andrew B. Lederman, MD,† and John G. Hunter, MD‡



Technical Steps

- Take down wrap completely, including crural sutures, preserve crura and vagus
- Establish normal anatomy
- Remove gastroesophageal fat pad, identify GE Junction clearly
- Mobilize esophagus, 3 cm of tension-free esophagus in the abdomen
- Assess for Short esophagus and need for Collis Gastroplasty
- Evaluate for leaks in stomach and esophagus
- Fundoplication: Always Partial
- Crural repair; mesh if needed

Revisional surgery

- Compared with primary repair,
- Revisional surgery is associated with
  - -longer operative times
  - -higher conversion rates to open surgery (level III),
  - - higher complication rates (esophagogastric perforations 11-25%,pneumothorax in 7% to 18%, splenic injuries in 2% and vagal nerve injuries in 7%)
- Nevertheless, postoperative dysphagia (3% to 17%) and gas bloat syndrome (5% to 34%) do not seem to be significantly higher after reoperation compared with primary repair.
- Patient satisfaction - high (89%) with resolution of heartburn symptoms in 68% to 89% of patients and resolution of regurgitation in 83% to 88%
- 13% of patients - reflux recurrence at 3 months

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Conclusion

- In non-obese patients with preserved esophago-gastric function a redo fundoplication with Collis if reqd
- Roux-en-Y is more attractive in obese individuals with comorbidities, multiple prior surgeries and impaired esophago-gastric function.
- Esophagectomy is reserved after multiple failed operations and when the esophagus is severely diseased.
- Gastropexy may be considered in patients when the fundus is not suitable for a Nissen and Roux-en-Y Esophagectomy are not options.

I REDO ARS

- Redo anti-reflux surgery is a complex procedure.
- Requires a thoughtful approach with realistic expectations.
- Only experience thoracic or foregut surgeons should tackle such cases.

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Thank U...