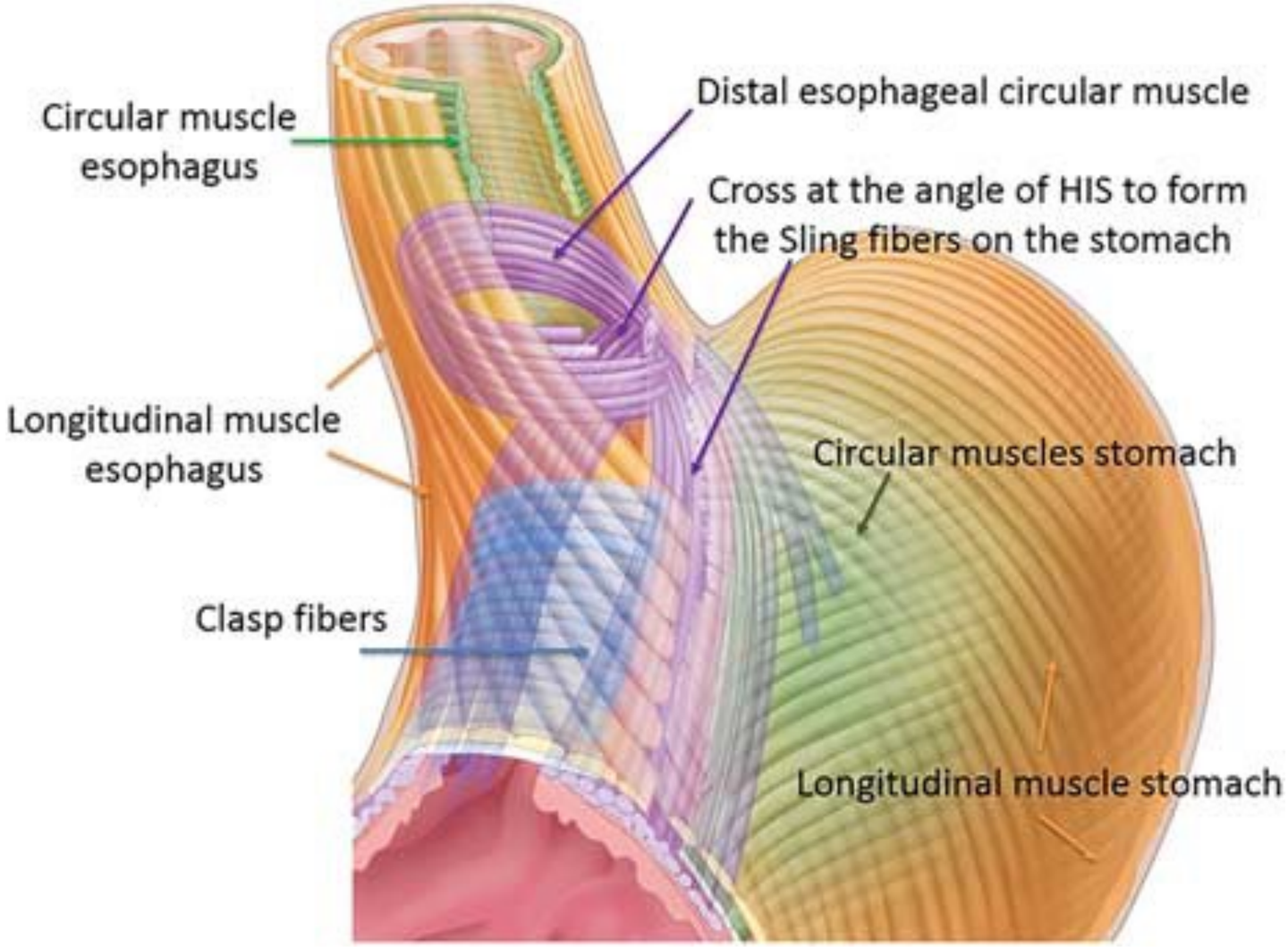
REDO PARAESOPHAGEAL HERNIA REPAIR: Do we really need the fundoplication?

Caitlin Houghton, MD
Director of Robotic Surgery
Keck Medicine of USC

4 Components of the Anti-Reflux Barrier

- LES
- Angle of HIS
- Crural Diaphragm
- Phenoesophageal Ligament



1950's

Dr. Barrett

Changing the established perception of the hiatal hernia from a mechanical condition to a physiologically one

Reflux esophagitis and it's complications were the physiologic consequences of anatomic abnormalities

Dr. Allison

1950's

REFLUX ESOPHAGITIS, SLIDING HIATAL HERNIA, AND THE ANATOMY OF REPAIR

P. R. ALLISON, F.R.C.S., Leeds, England

Dr. Allison

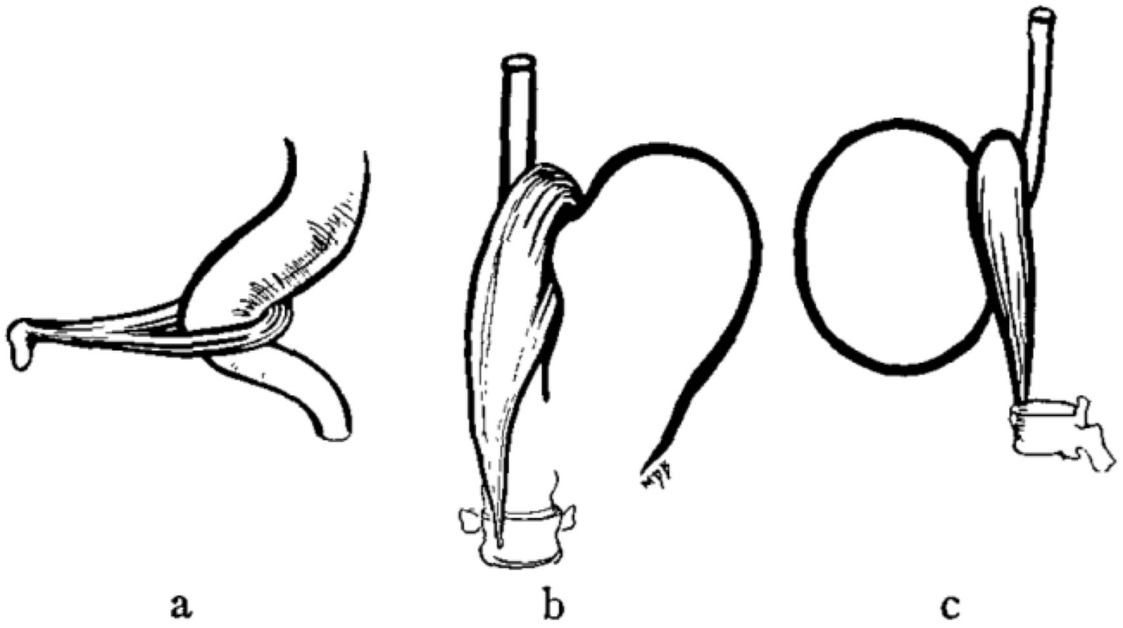


Fig. 3. a, The puborectalis sling round the anorectal junction. b, The right crus of the diaphragm forming a sling for the esophagogastric junction. Anterior view. c, The sling of the right crus as seen from the side.

1950's

REFLUX ESOPHAGITIS, SLIDING HIATAL HERNIA, AND THE ANATOMY OF REPAIR

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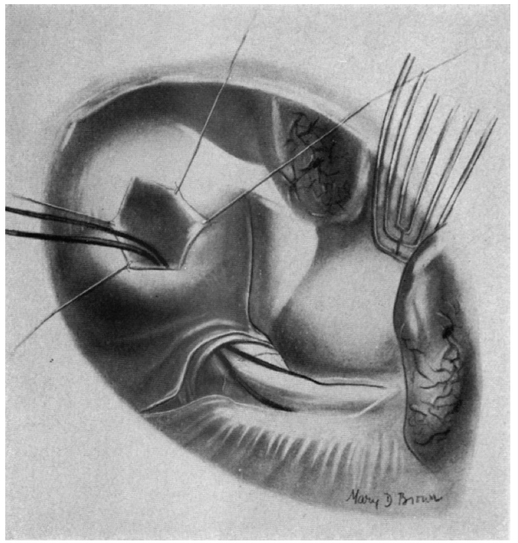
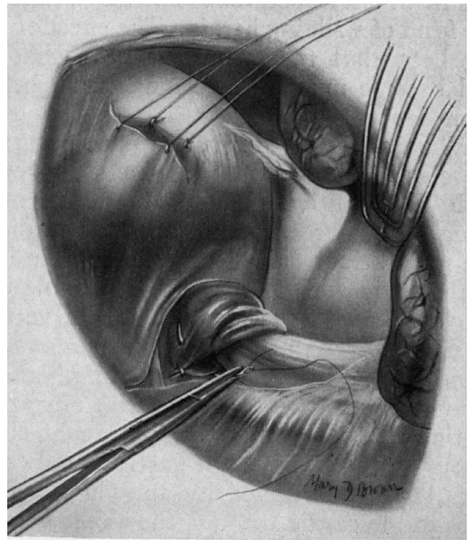


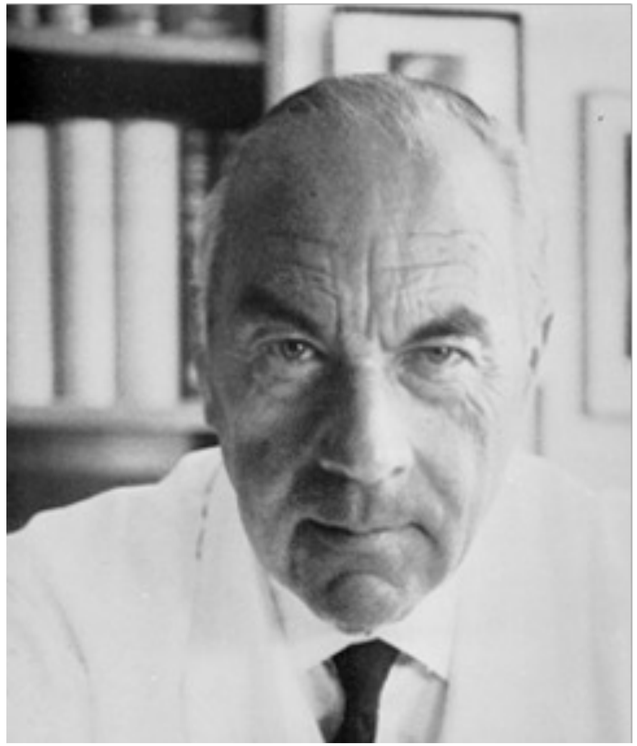


Hernia repair with closure of the Crural Diaphragm

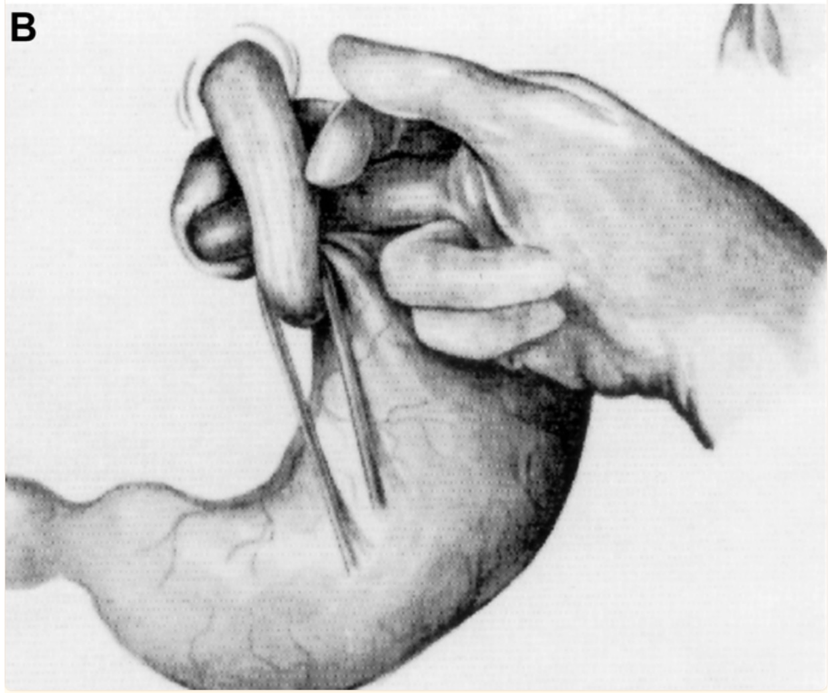
B Aus der chirurgischen Universitätsklinik Basel
Vorsteher: Prof. R. Nissen

Eine einfache Operation zur Beeinflussung der Refluxoesophagitis

Von R. Nissen



Dr. Nissen



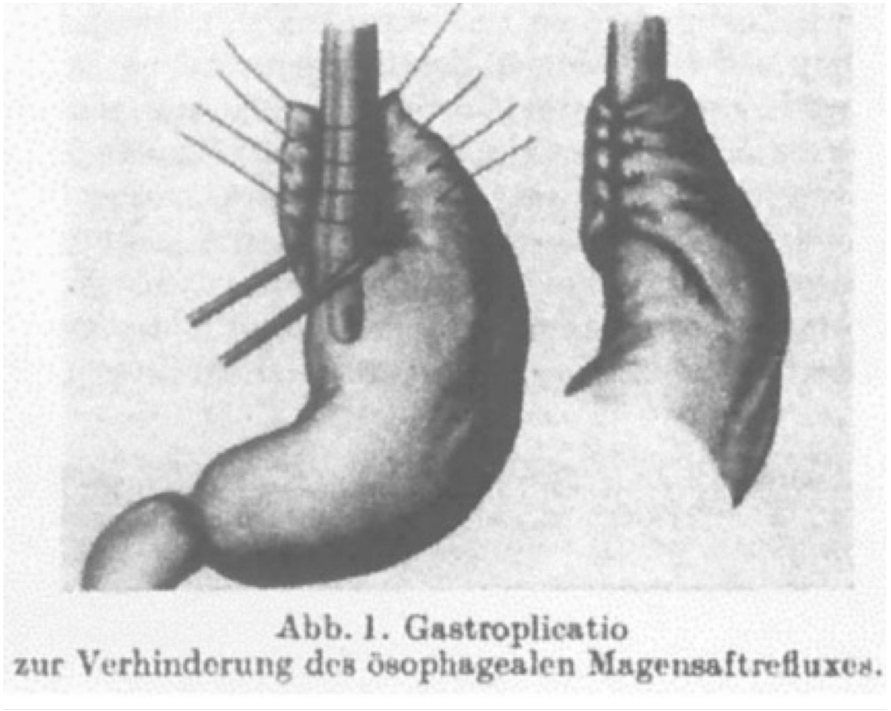
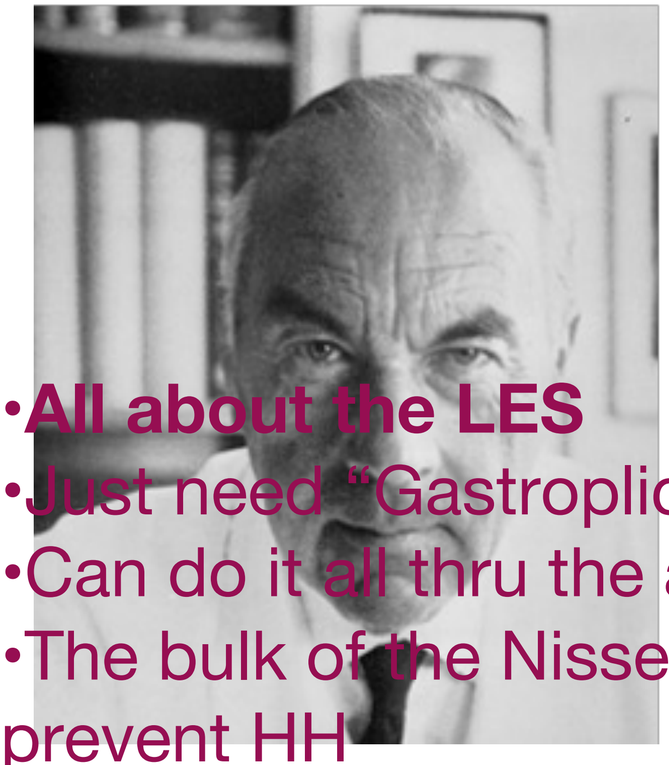
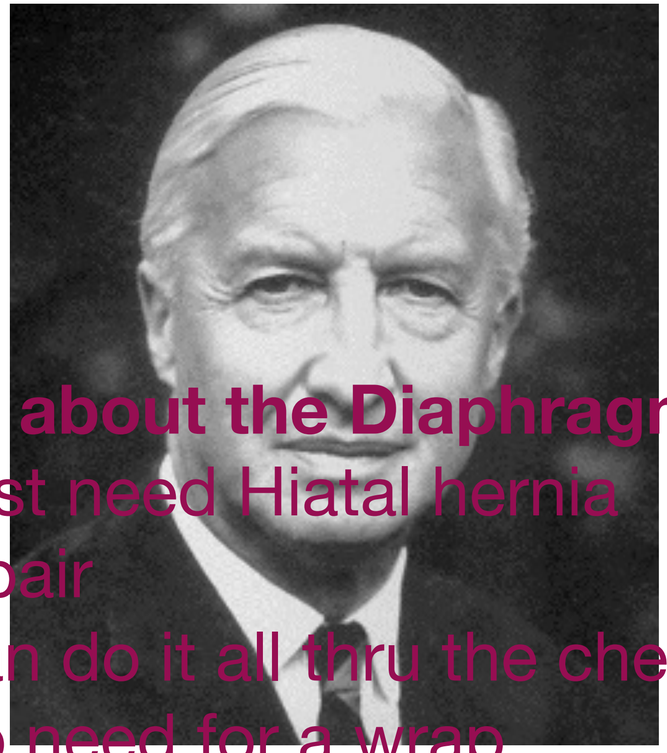


Abb. 1. Gastroplicatio
zur Verhinderung des ösophagealen Magensaftrefluxes.

'Closure of the hernia orifice and the sac is irrelevant'



VS



- **All about the LES**
- Just need “Gastroplication”
- Can do it all thru the abdomen
- The bulk of the Nissen will prevent HH

- **All about the Diaphragm**
- Just need Hiatal hernia repair
- Can do it all thru the chest
- No need for a wrap

Comparison of Crural Repair and Nissen Fundoplication in the Treatment of Esophageal Hiatus Hernia with Peptic Esophagitis

E. R. Woodward, M.D., H. F. Thomas, M.D., J. C. McAlhany,* M.D.

From the Department of Surgery, University of Florida College of Medicine, Gainesville, Florida, and the Veterans Administration Hospitals, Gainesville and Lake City, Florida

- 103 Nissen Only (No Crural Repair)

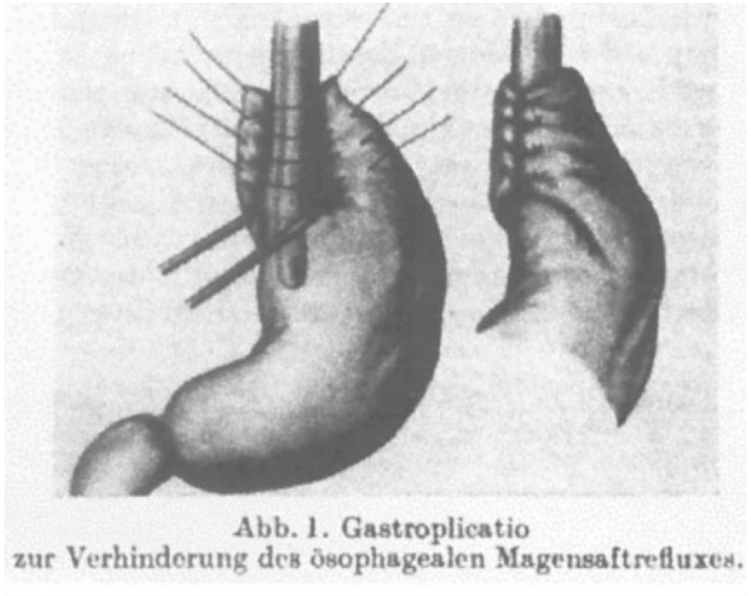
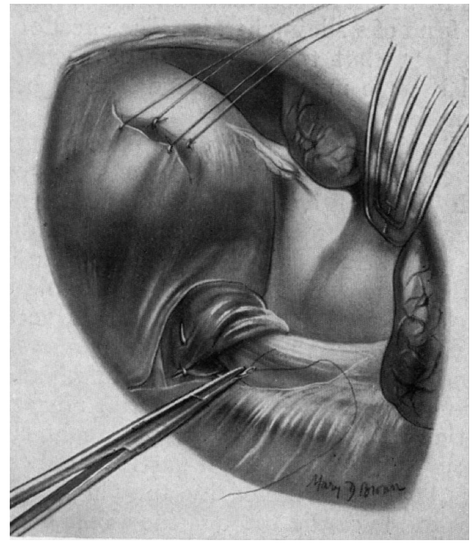


Abb. 1. Gastroplicatio
zur Verhinderung des ösophagealen Magensaftrefluxes.

- Median f/u 6 months: pH Testing
  - Only Repaired HH **54%** pH+
  - Only Nissen **49%** pH+

- 127 Hiatal Hernia / Crural Repair Only



RANDOMIZED CONTROL TRIAL 40 PATIENTS

Repair of Paraesophageal Hiatal Hernias—Is a Fundoplication Needed? A Randomized Controlled Pilot Trial

Beat P Müller-Stich, MD, Verena Achtstätter, MD, Markus K Diener, MD, Matthias Gondan, PhD, René Warschkow, MD, Francesco Piatka, MD, Andreas Zerz, MD, Carsten N Gutt, MD, Markus W Büchler, MD, FACS, Georg R Linke, MD

- PEH/Mesh
- No Fundoplication

- DeMeester Scores
- 40 vs 9 (p=0.048)

- PEH/Mesh
- Nissen

- Esophagitis
- 53% vs 17% (p=0.026)

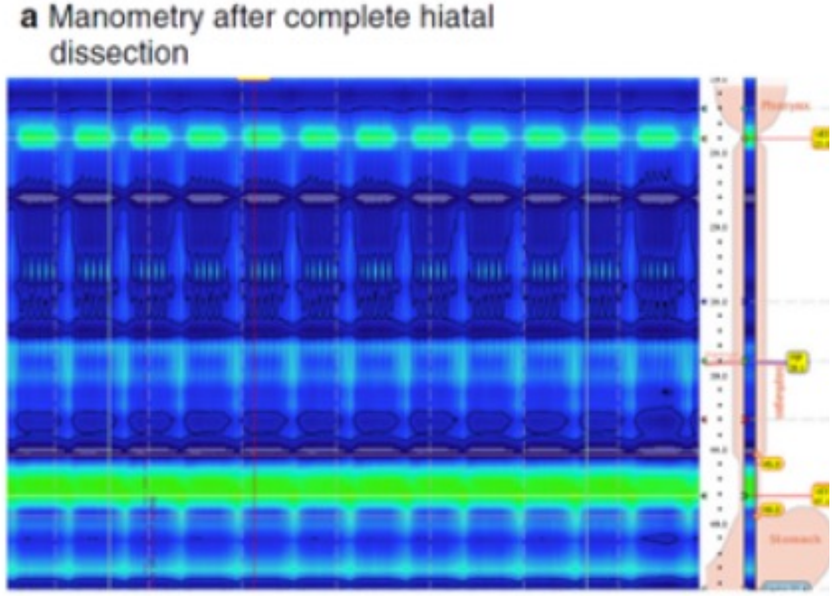
JACS August 2015

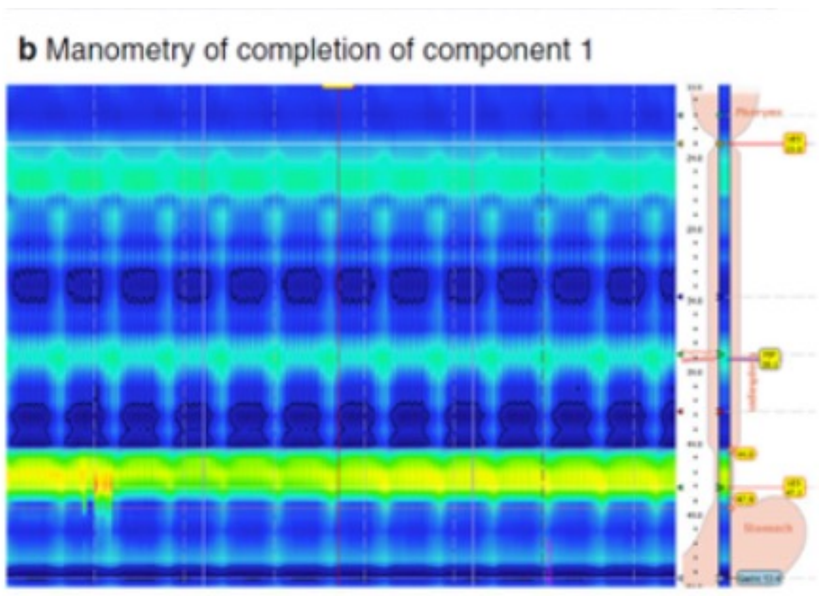
J Gastrointest Surg (2013) 17:236–243
DOI 10.1007/s11605-012-2074-4

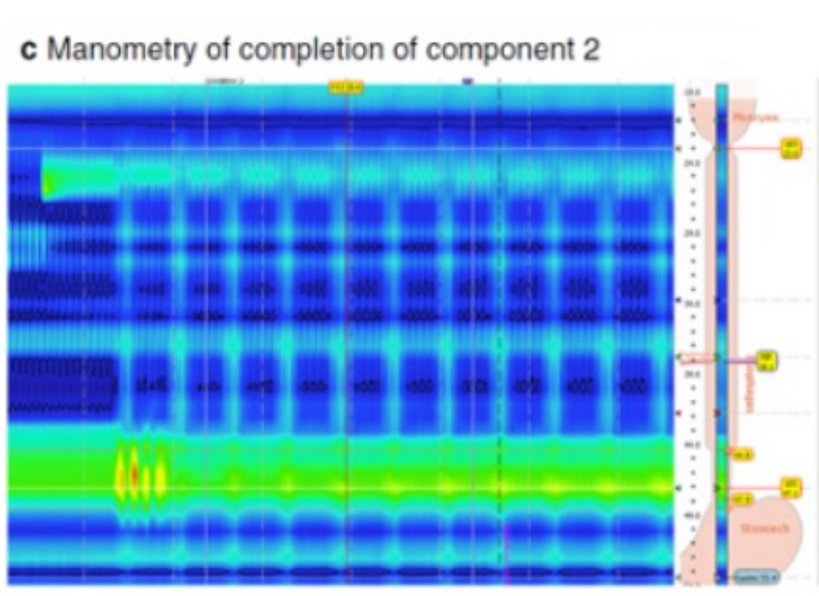
2012 SSAT POSTER PRESENTATION

Length and Pressure of the Reconstructed Lower Esophageal Sphincter is Determined by Both Crural Closure and Nissen Fundoplication

Brian E. Louie · Seema Kapur · Maurice Blitz · Alexander S. Farivar · Eric Vallières · Ralph W. Aye





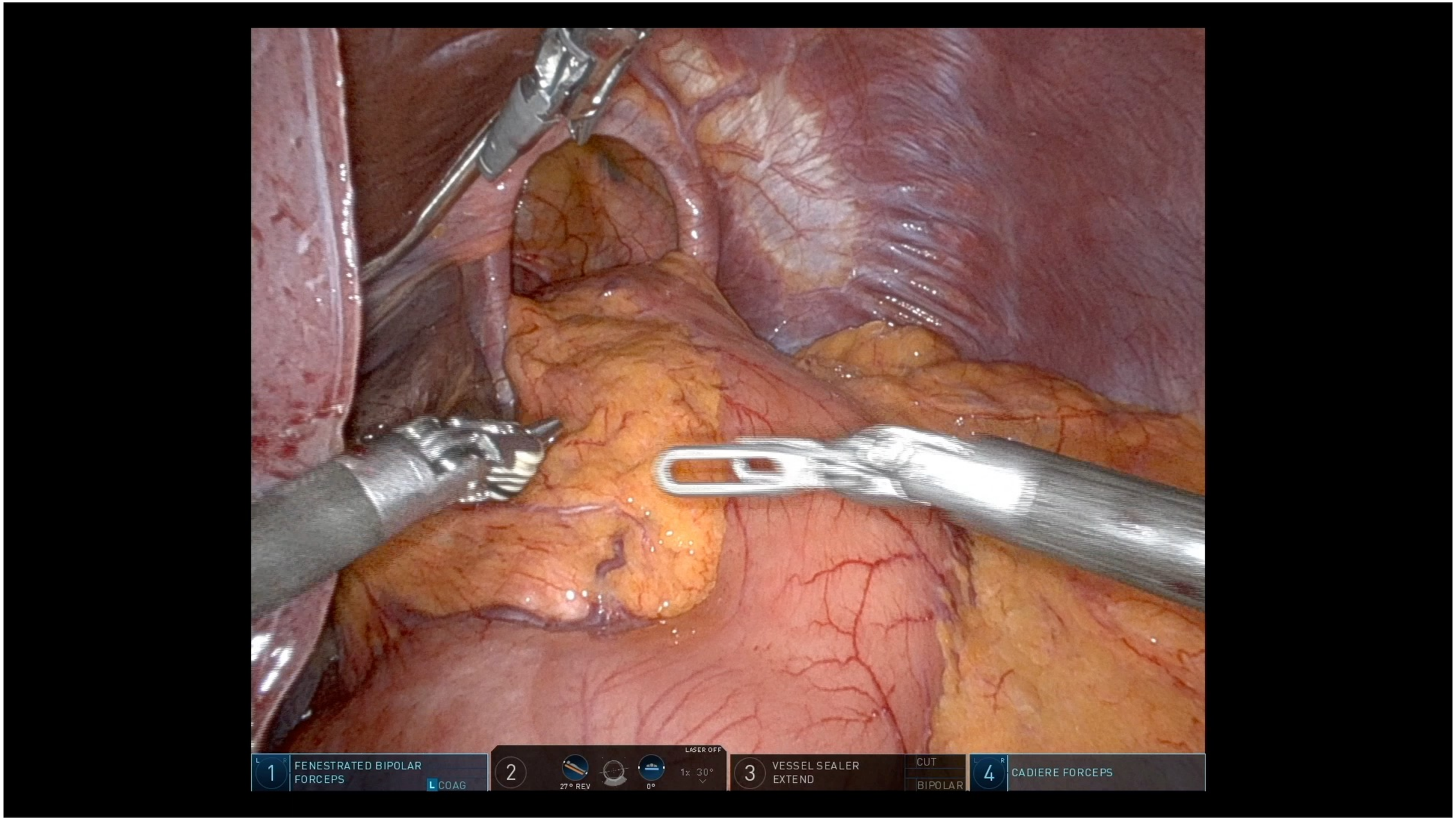


Intra-op HRM after Full Hiatal Dissection
-18pts

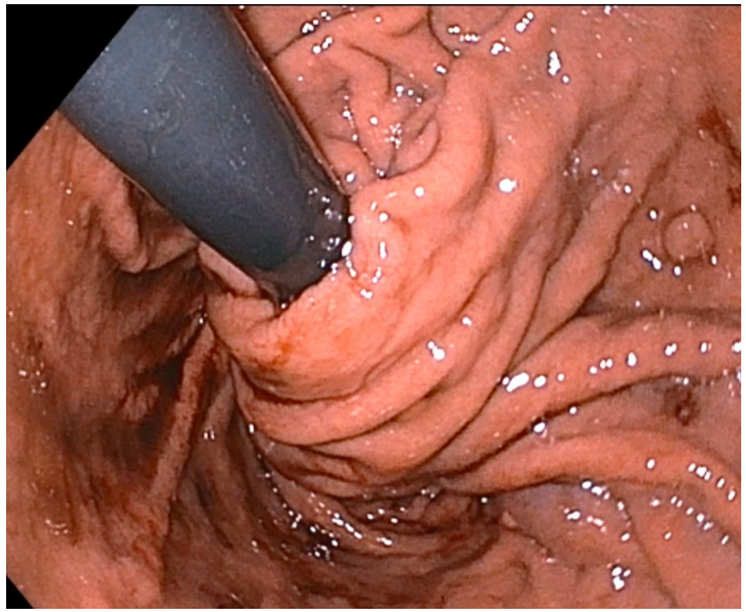
Increased Barrier Pressure
-10.2mmHg Crural Closure
-3.5mmHg Nissen

Increased Length
-0.54cm Crural Closure
-0.72cm Nissen

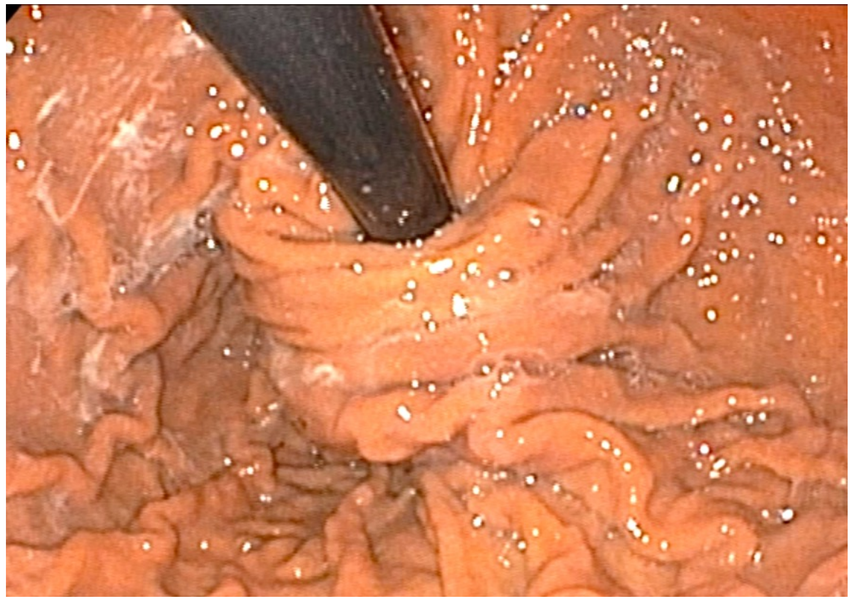
Crural repair and the Fundoplication have a synergistic effect on the barrier function


1
FENESTRATED BIPOLAR
FORCEPS
L COAG
2
LASER OFF
27° REV
0°
1x 30°
3
VESSEL SEALER
EXTEND
CUT
BIPOLAR
4
CADIERE FORCEPS

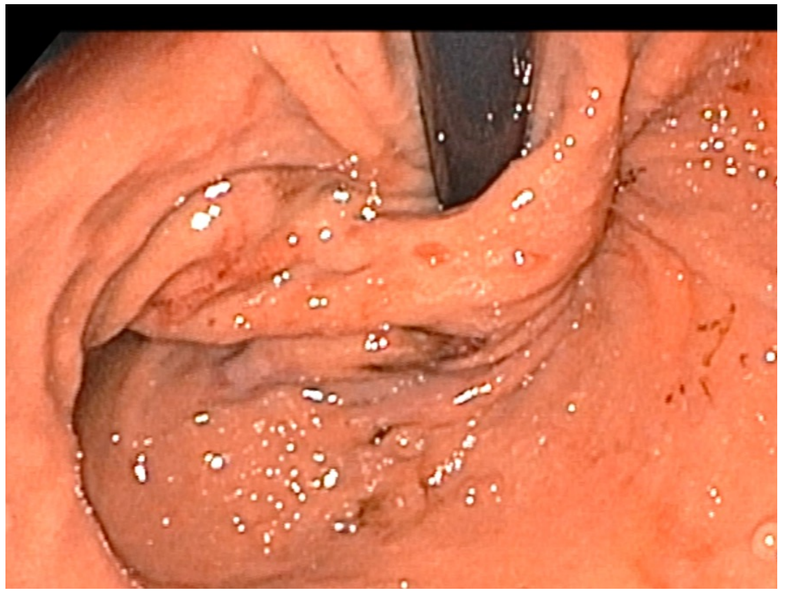
•EGD evaluation of Reconstructed Valve
-Hill Grade 1
-Length to the valve



NISSEN



TOUPET



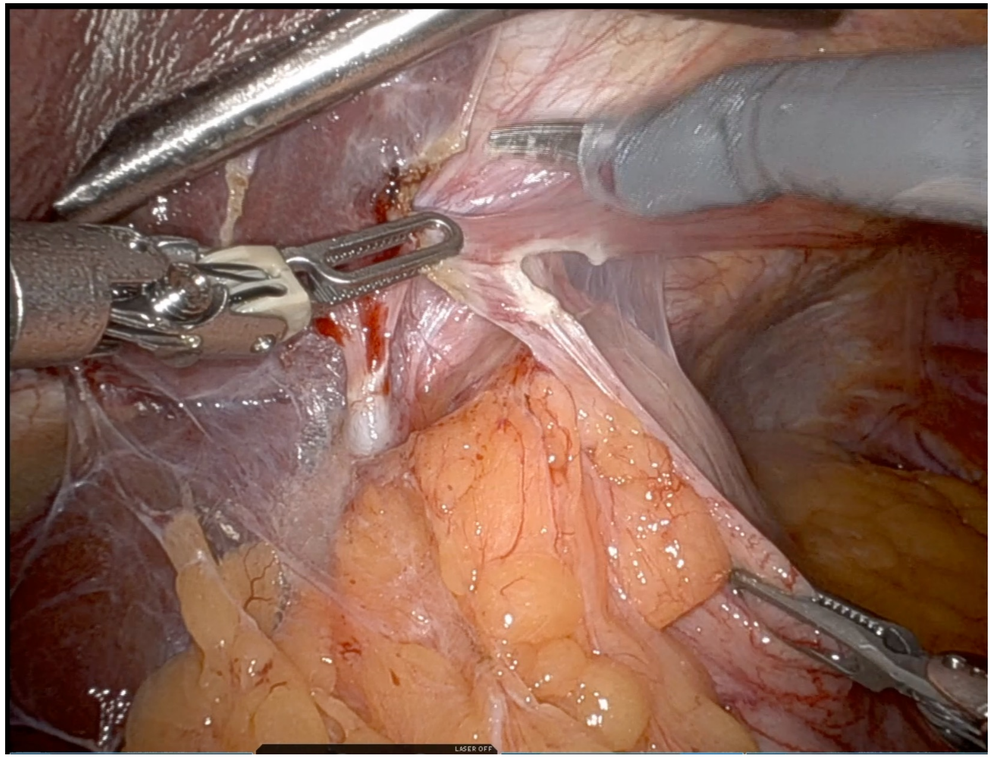
WATSON

REDO PARAESOPHAGEAL HERNIA REPAIR: Do we really need the fundoplication?

YES!!!!

REDO PARAESOPHAGEAL HERNIA REPAIR STILL NEEDS TO CONSIDER BOTH THE DIAPHRAGM REPAIR AND THE FUNDOPLICATION

- What are the recurrent symptoms
- What was the previous repair
- Is that wrap still intact?
- Intra-op EGD of the existing fundoplication after the hernia repair



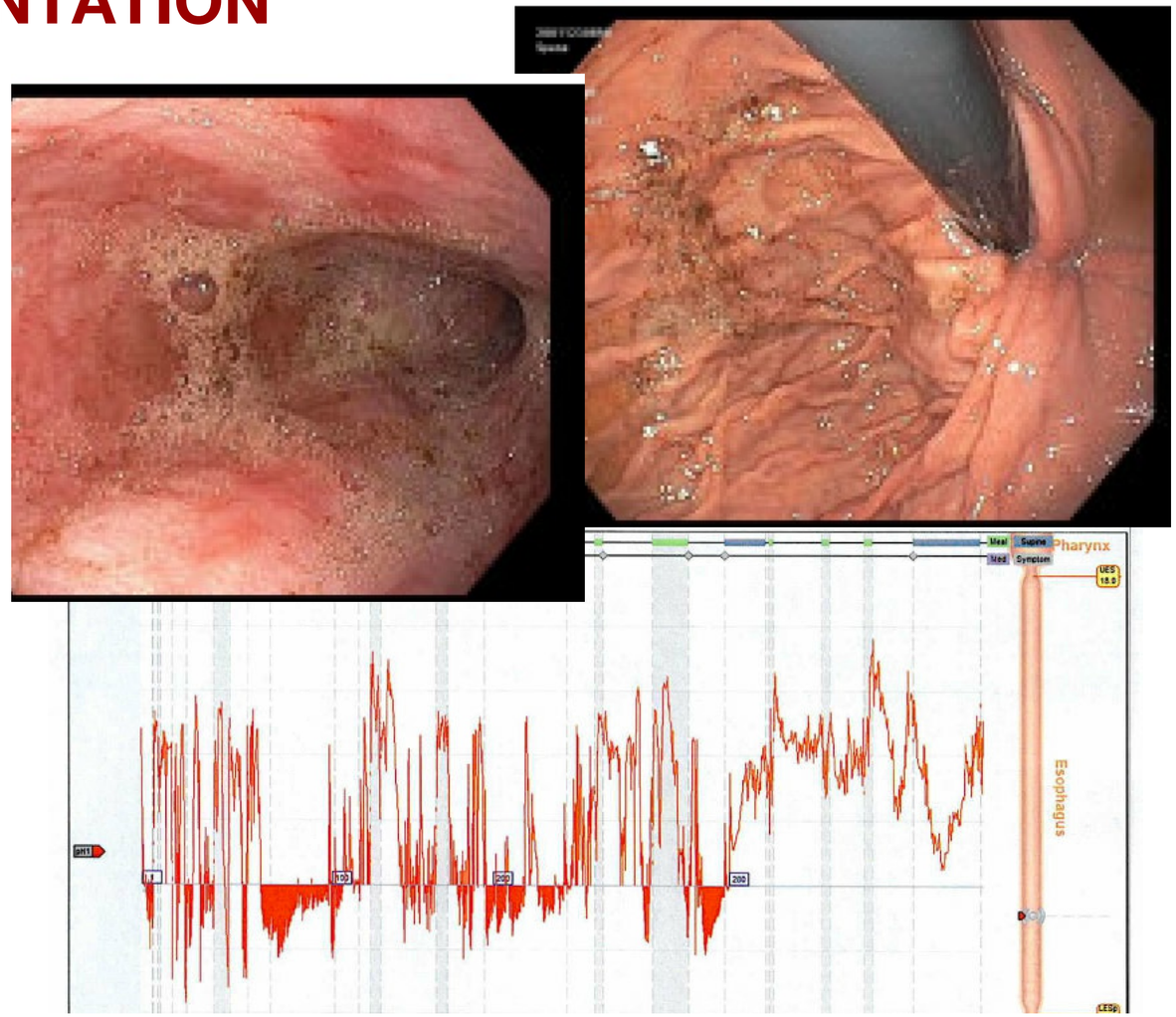
CASE PRESENTATION

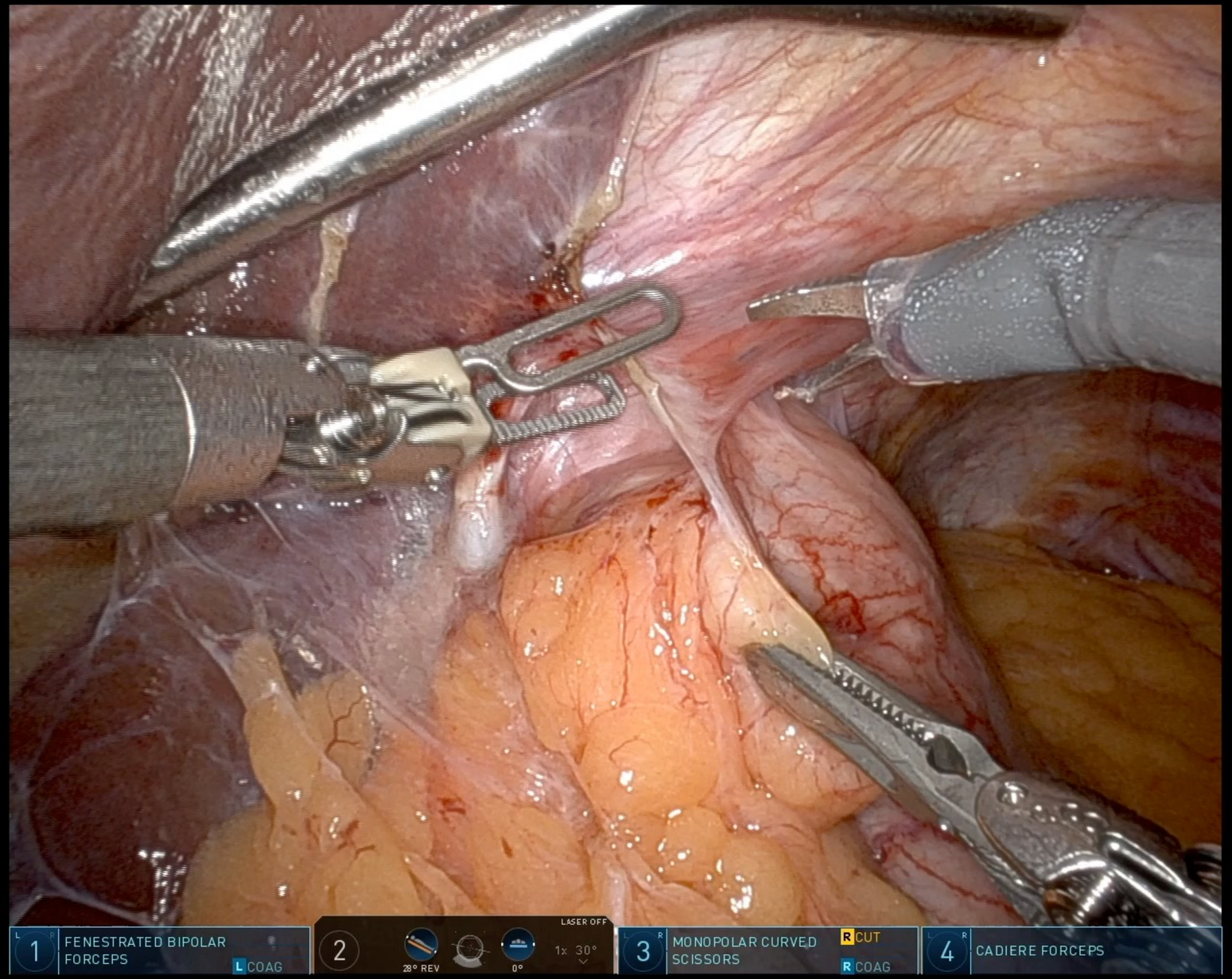
75yr old F with history of a Lap Nissen in 2011 now with recurrent GERD symptoms.

EGD: Showed LA grade B/C esophagitis, 3-4 cm recurrent hiatal hernia and Nissen partially disrupted in the chest.

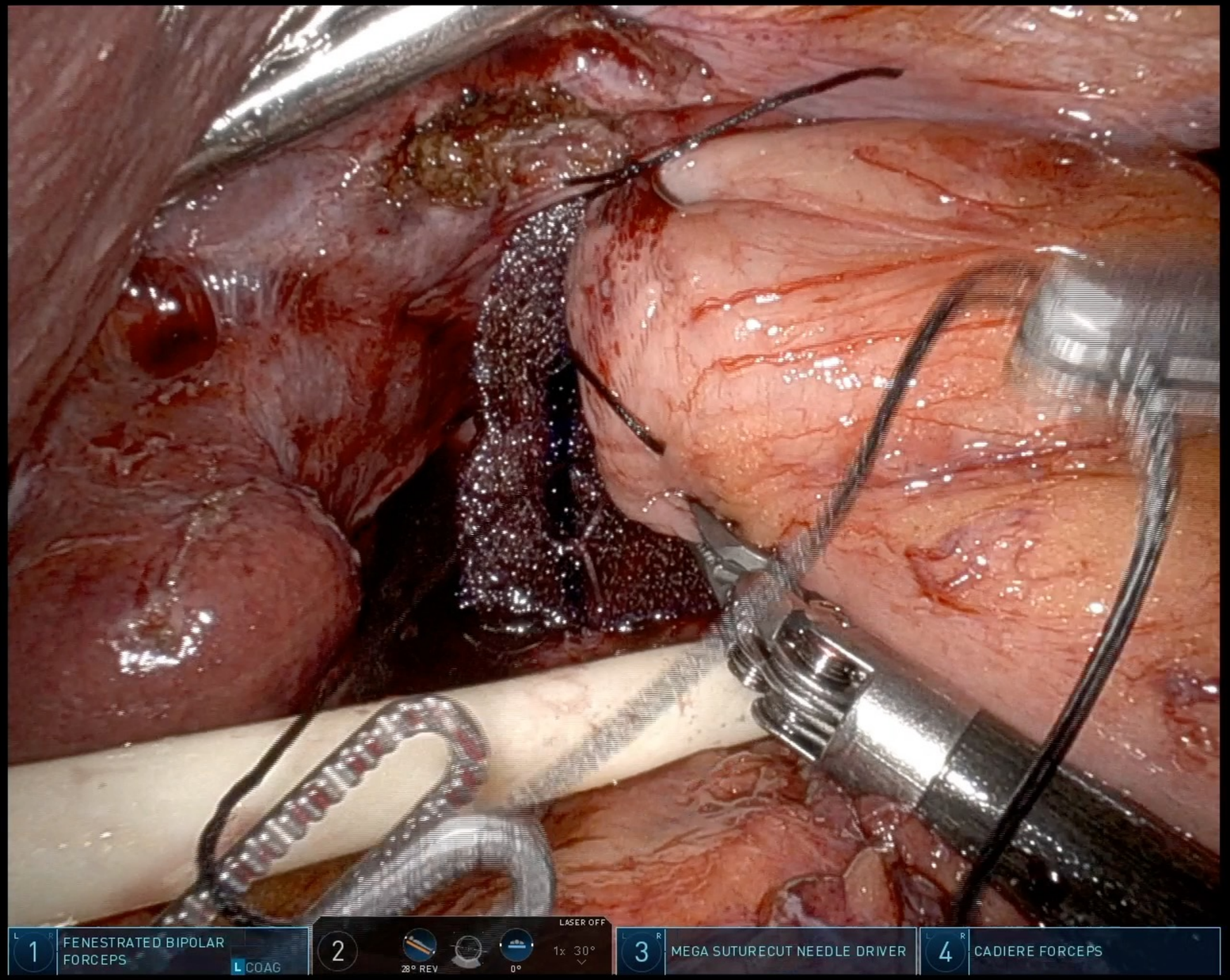
BRAVO: DeMeester score 120. Supine refluxer

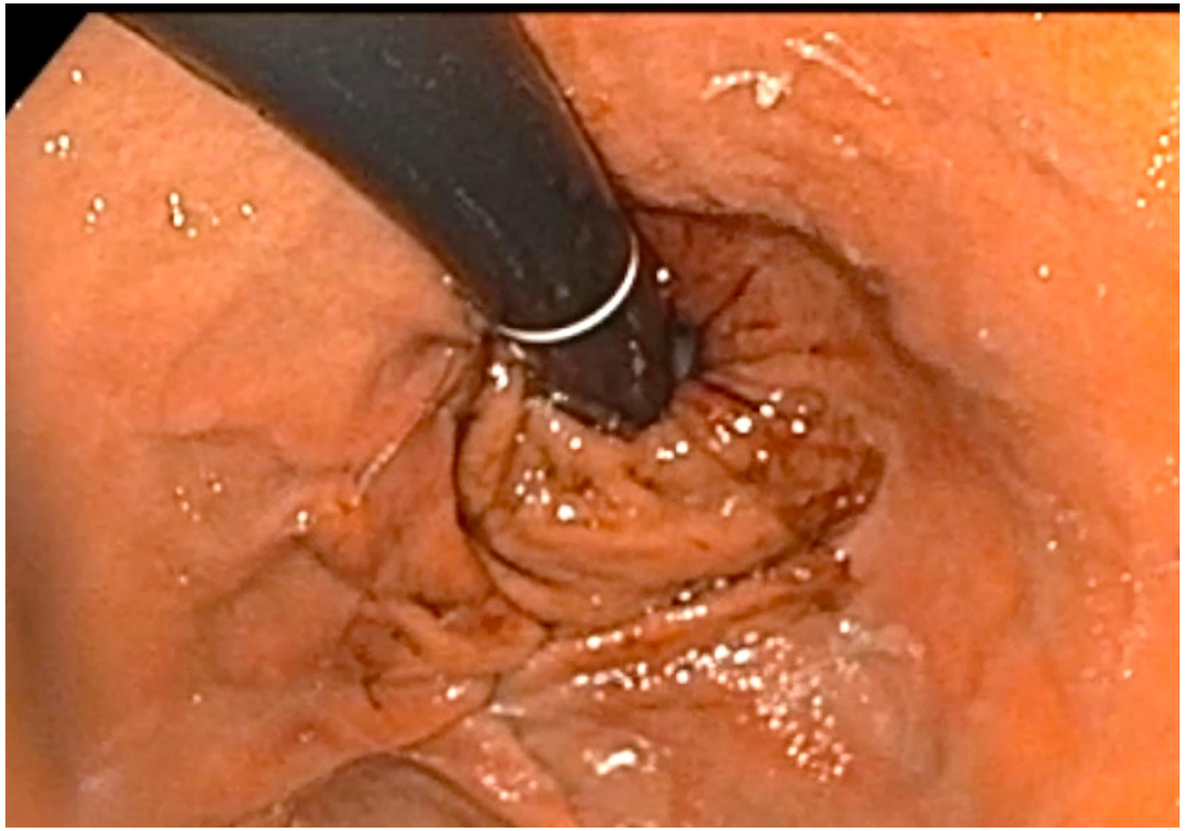
VEG: 4cm hiatal hernia with some esophageal dysmotility

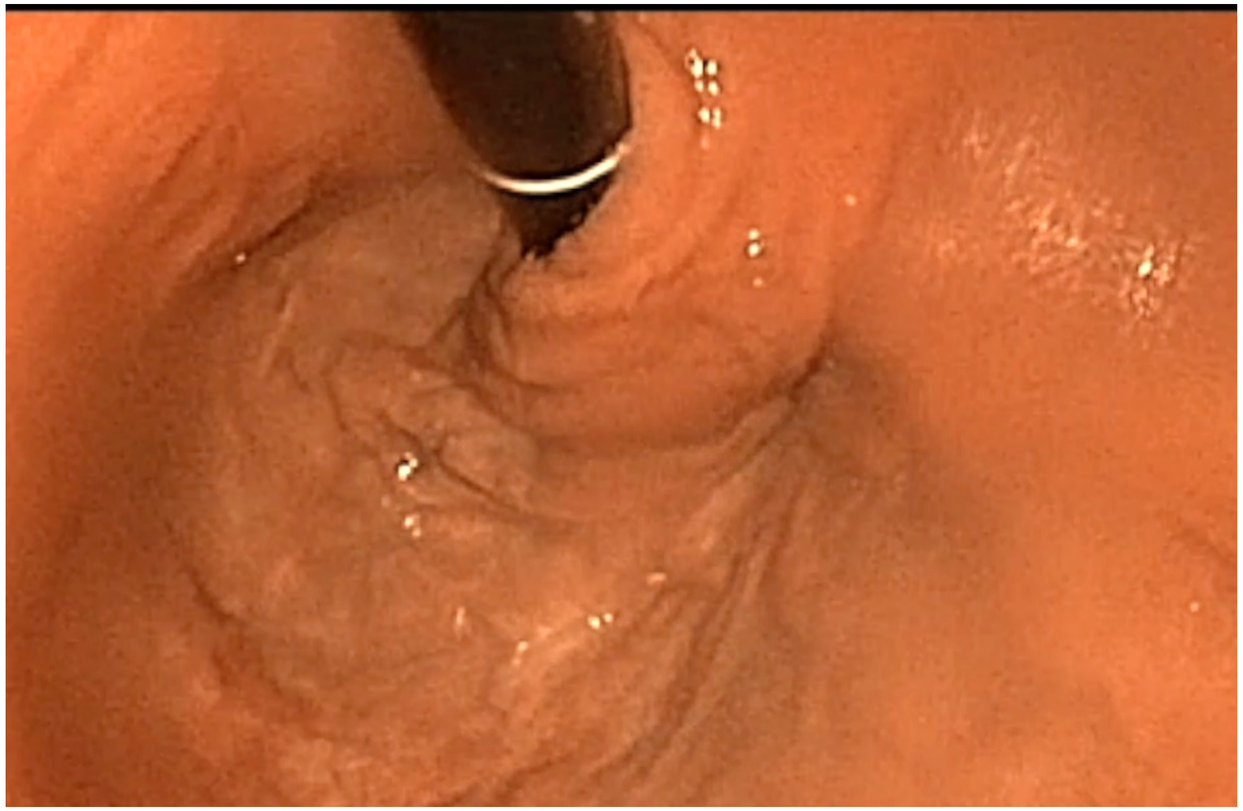



1
FENESTRATED BIPOLAR FORCEPS
L COAG
2
LASER OFF
28° REV
0°
1x 30°
3
MONOPOLAR CURVED SCISSORS
R CUT
R COAG
4
CADIERE FORCEPS

Should we revise the valve?

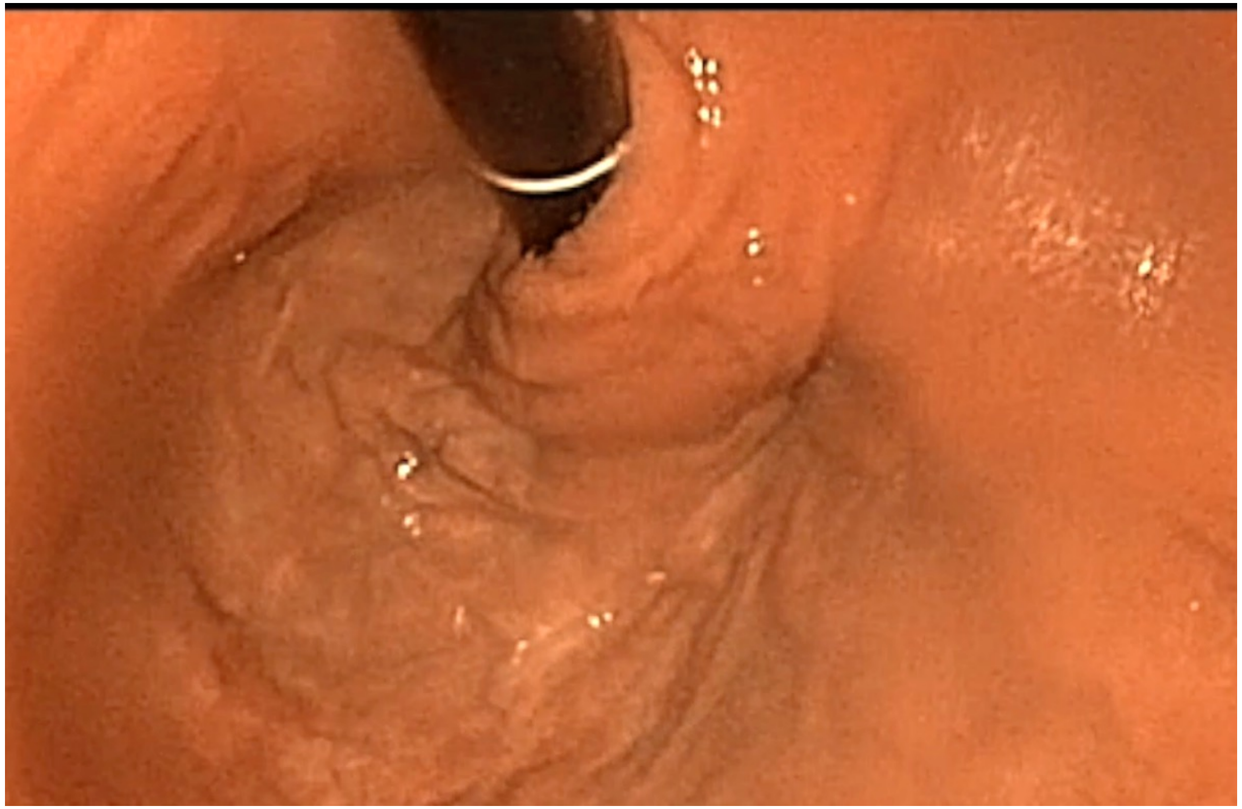

1
FENESTRATED BIPOLAR FORCEPS
L COAG
2
LASER OFF
28° REV
0°
1x 30°
3
MEGA SUTURECUT NEEDLE DRIVER
4
CADIERE FORCEPS





RECAP:
75yr old F with history of a Lap Nissen in 2011 now with recurrent GERD symptoms.

Her work up showed pretty severe GERD but she had some esophageal dysmotility. Revised the valve with a partial fundoplication.



CASE PRESENTATION

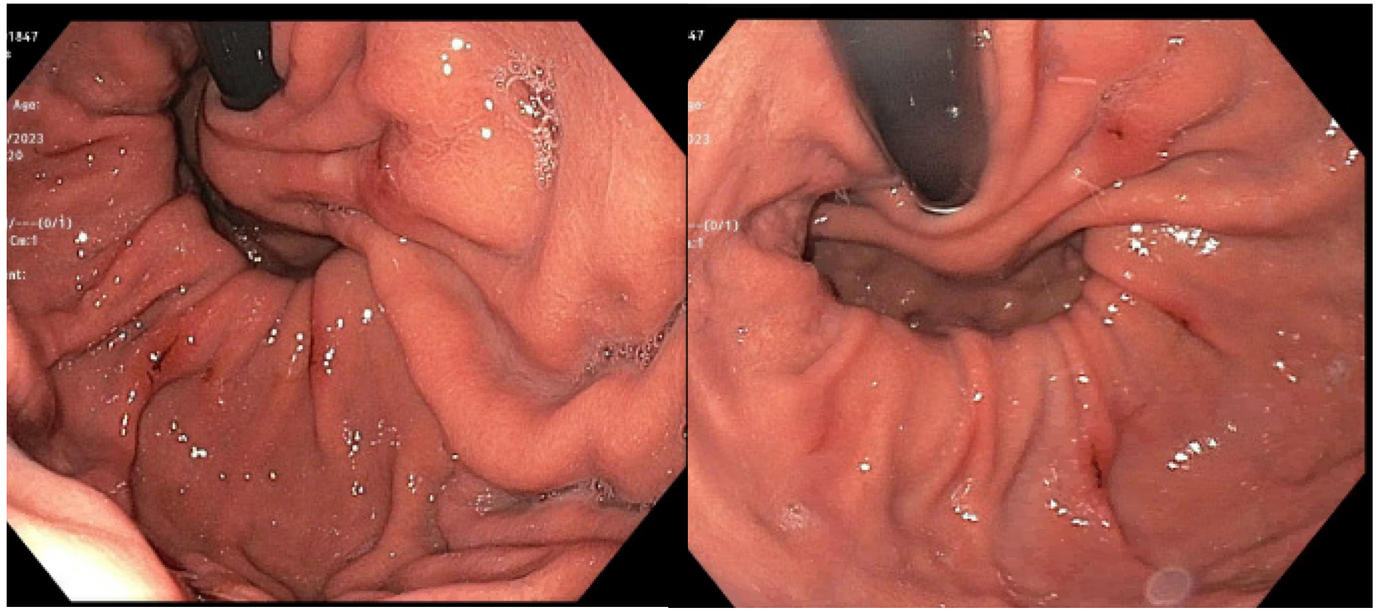
36 yr old M with a history of a Heller Myotomy with Dor fundoplication for achalasia in 2008. Now has new onset difficulty swallowing and describes having to chug large amounts of water to get food down

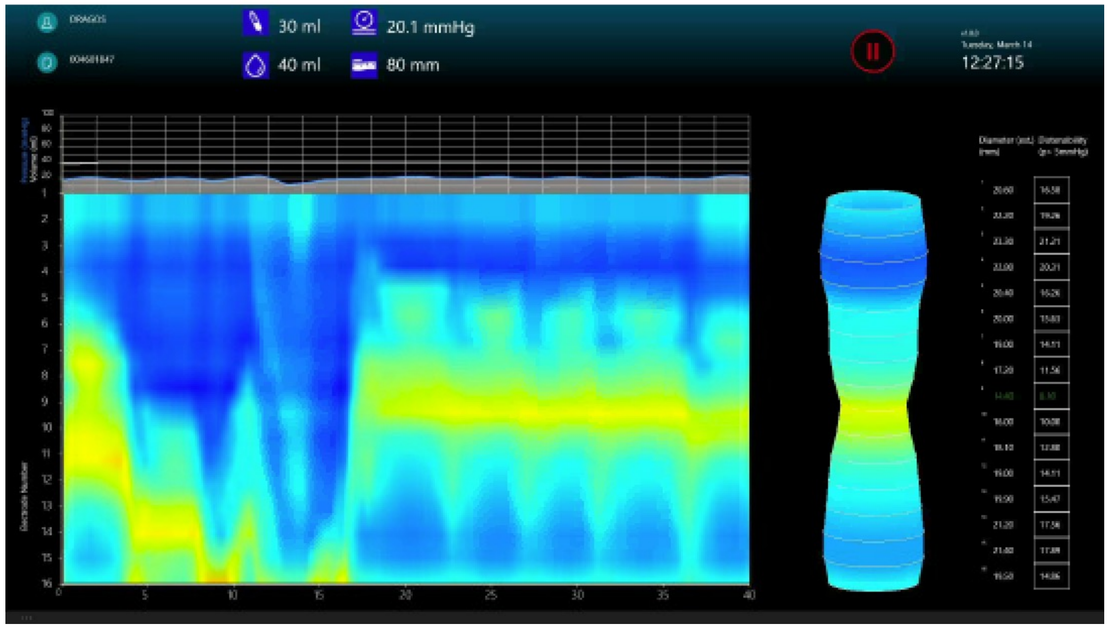
Video esophagram: Circumferential narrowing at the distal esophagus that extends above the diaphragm. Esophageal dysmotility

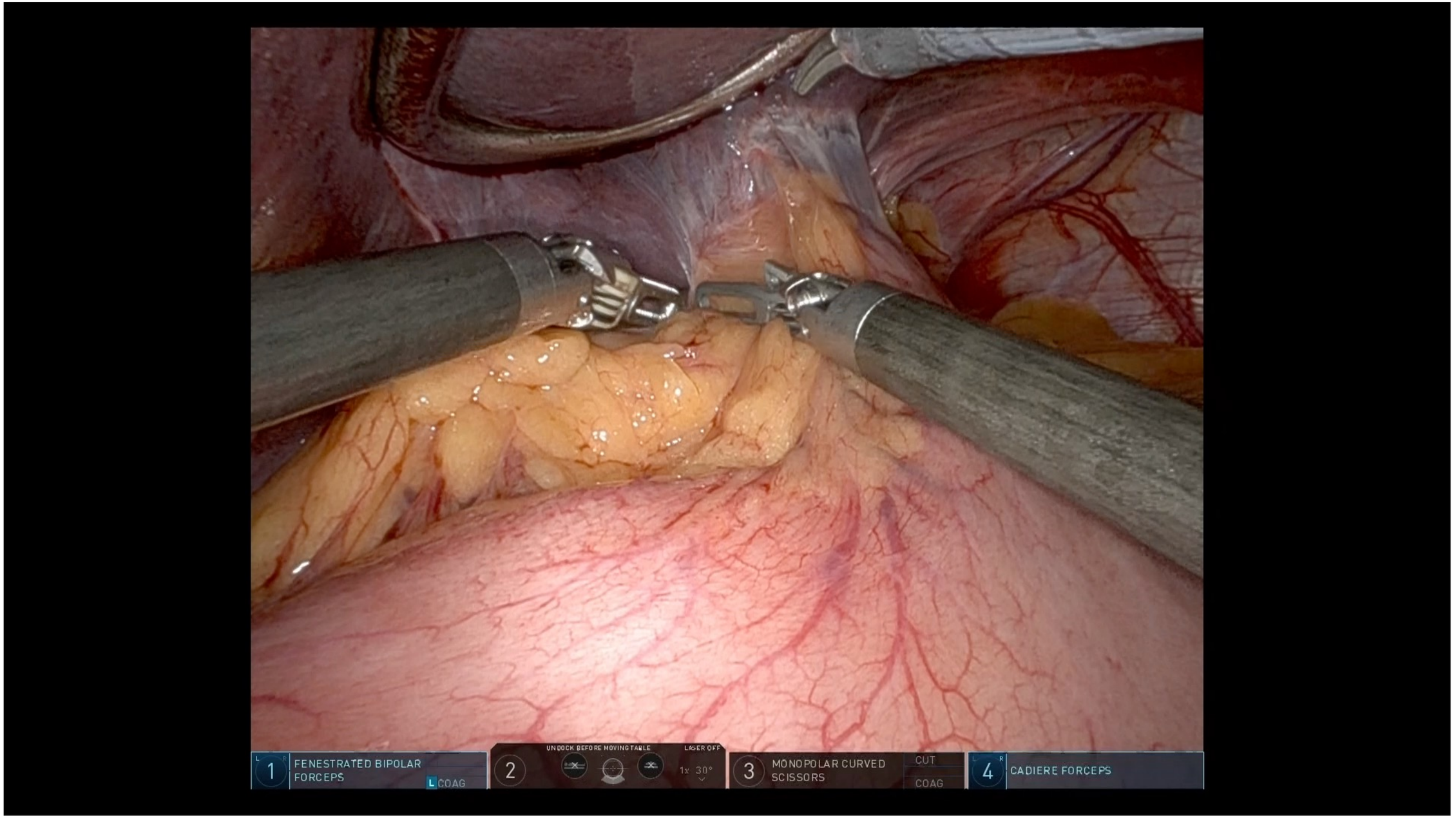
Manometry: LES IRP within normal limits and 100% failed swallow

EGD: 4cm paraesophageal hernia. Dilated distal esophagus. Intact Dor Fundoplication

ENDOFLIP: Distensibility 10 at 40ml and 7.5 at 50mL. No RACS






1
FENESTRATED BIPOLAR FORCEPS
L COAG
2
UNDOCK BEFORE MOVING TABLE
LASER OFF
1x 30°
3
MONOPOLAR CURVED SCISSORS
CUT
COAG
4
CADIERE FORCEPS

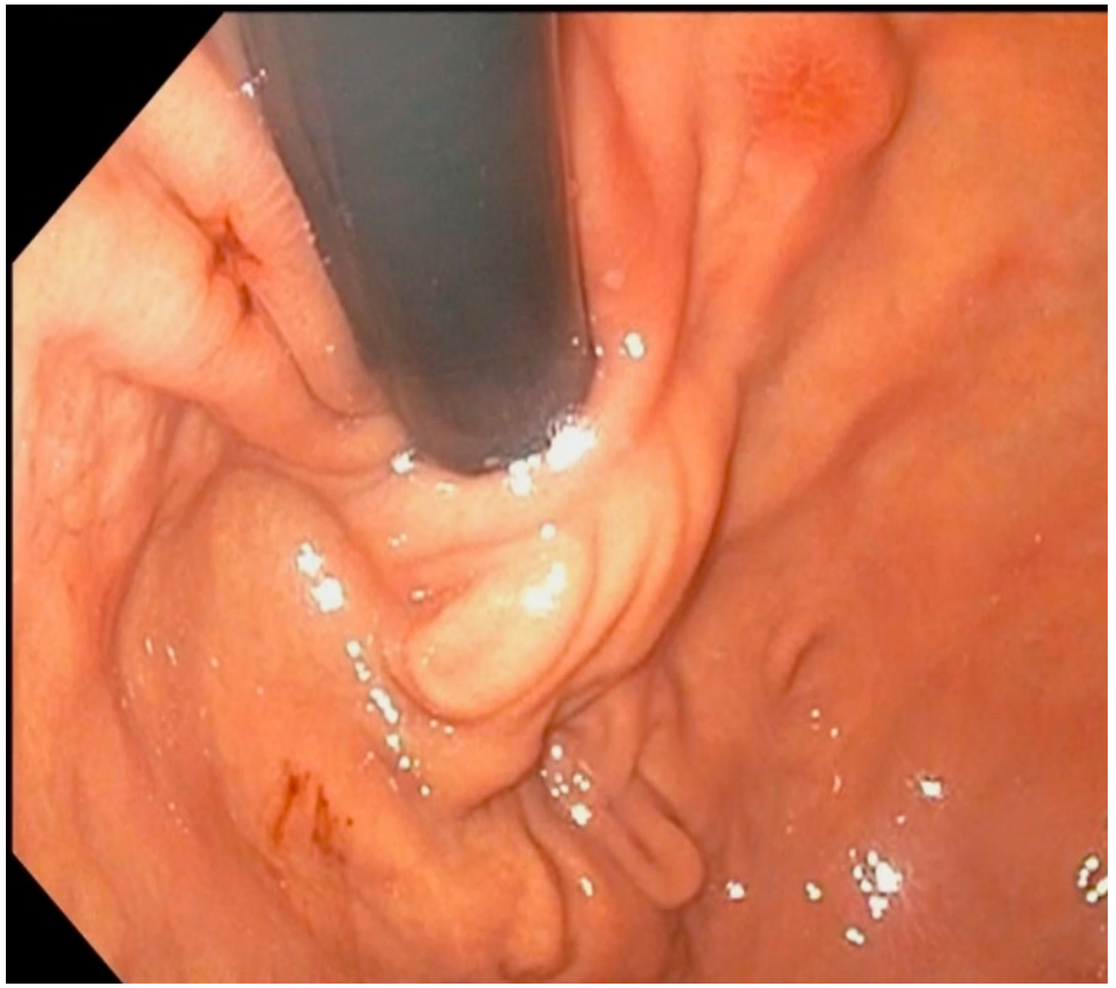
Should we revise the valve?

RECAP:

36 yr old M with a history of a Heller Myotomy with Dor fundoplication for achalasia in 2008. Now has new onset difficulty swallowing and describes having to chug large amounts of water to get food down

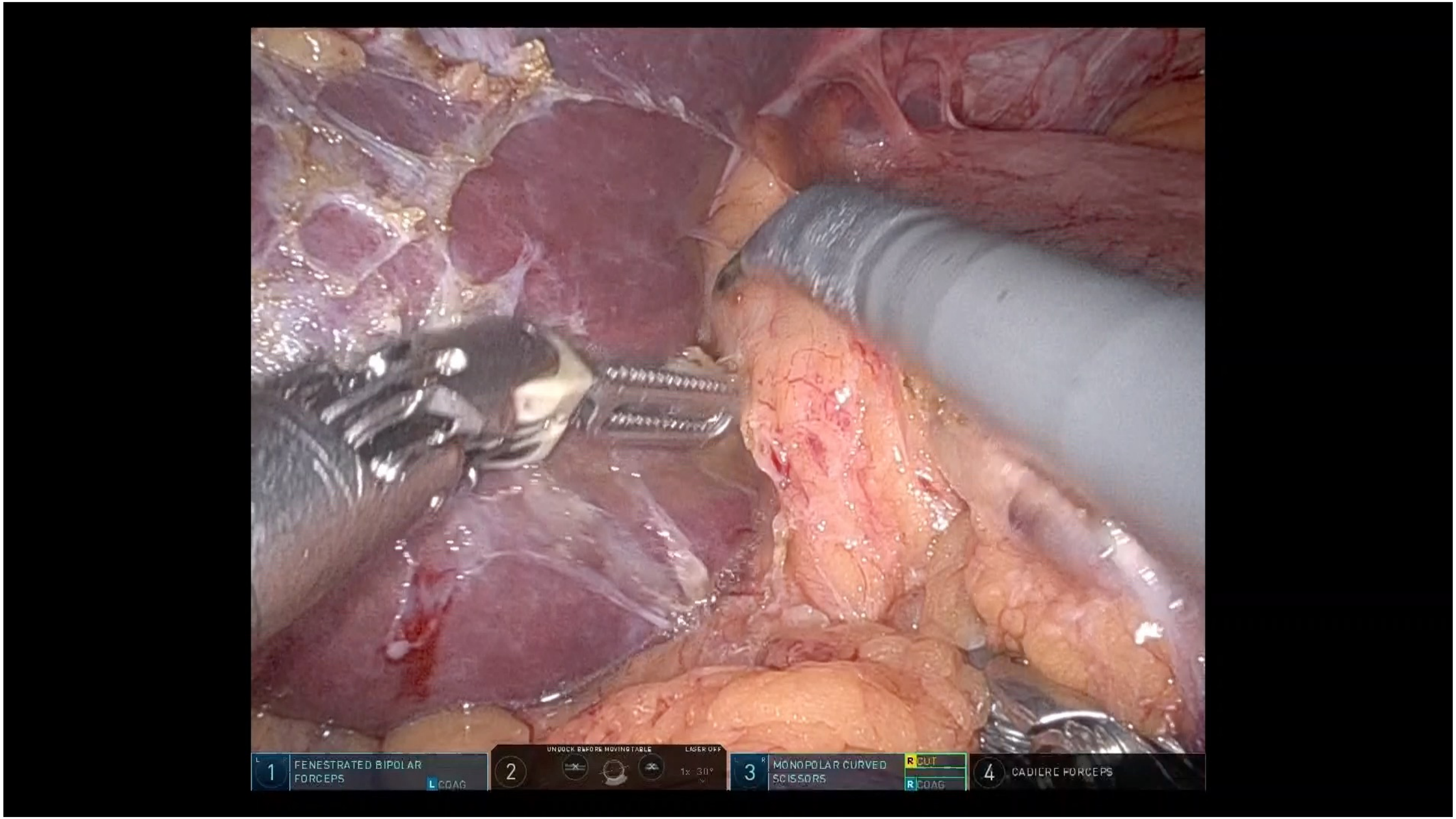
Work up consistent with hiatal hernia as the main issue. Dor relatively intact after hernia repair. Don't want to create any new dysphagia.

NO revision of wrap indicated.



CASE PRESENTATION

62 yr old male with history of a Nissen 5 yrs ago with new symptoms of burping and regurgitation. Work up shows a recurrent hiatal hernia with the wrap above the diaphragm, mild esophageal dysmotility on the veg and PH BRAVO DeMeester score of 4.4.


1
FENESTRATED BIPOLAR FORCEPS
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2
UNDOCK BEFORE MOVING TABLE
LASER OFF
1x 30°
3
MONOPOLAR CURVED SCISSORS
R CUT
R COAG
4
CADIERE FORCEPS

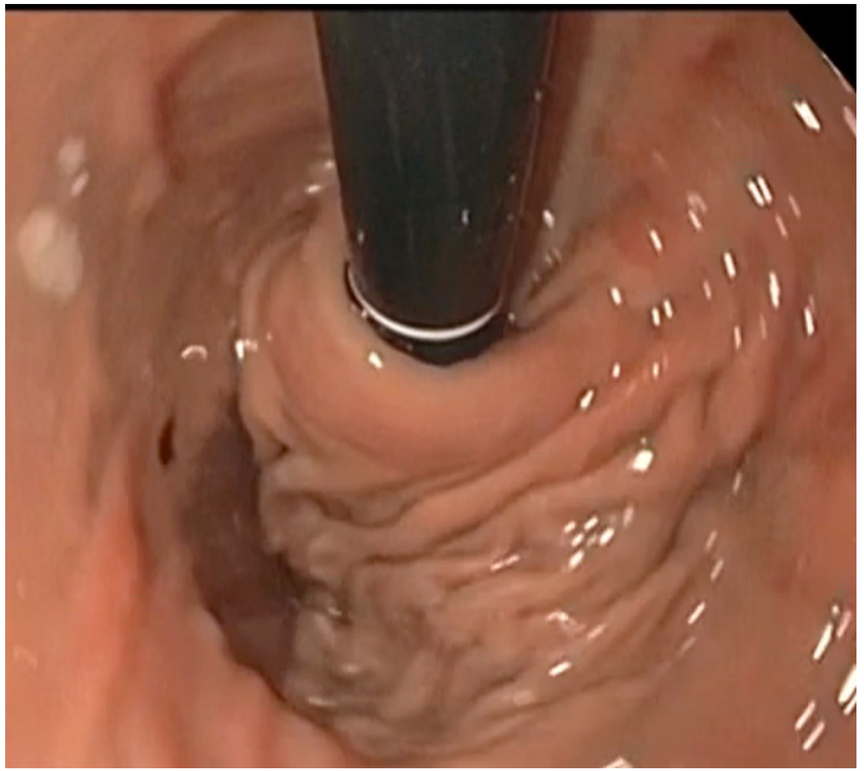
Should we revise the valve?

RECAP:

62 yr old male with history of a Nissen 5 yrs ago with new symptoms of burping and regurgitation.

BRAVO: DeMeester Score 4.4
Valve looks good after hernia repair.
Dysphagia wasn't a major issue so no need to take down the wrap.

No need to revise the wrap.



REDO PARAESOPHAGEAL HERNIA REPAIR:

Do we really need the fundoplication?

Yes! You still have to consider the Diaphragm and the Fundoplication in a redo procedure.

However, this does not always mean that you are revising the old fundoplication

Patient clinical history and preoperative work-up helps to make intra-op decisions.

Keck School of Medicine of USC