

Komplikationen und Revisionen nach Bariatrischen Eingriffen

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Disclosures



Educational Grant
Speaker Fees



Educational Grant



Educational Grant
Speaker Fees

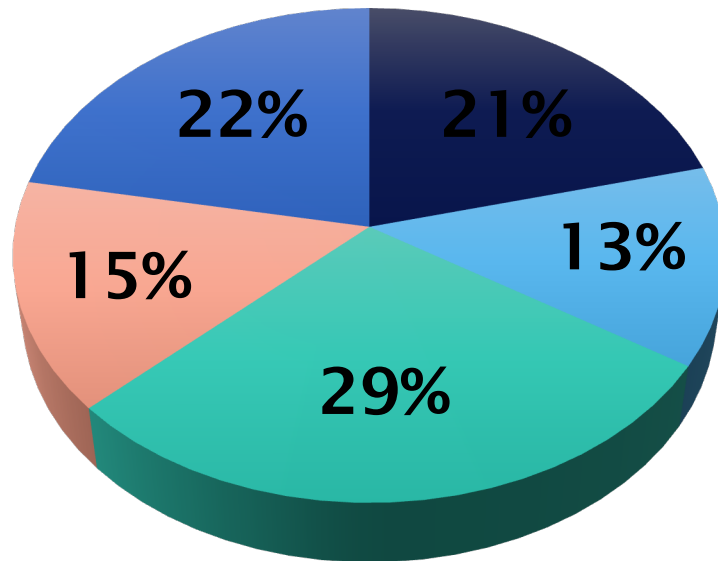


Educational Grant



Advisory Board

Case Mix Disclosures



- RYGB
- SG
- OAGB
- SADI-S
- REVISIONAL

Medical University of Vienna



1996 lap. Gastric Banding LAGB



2002 lap. Sleeve Gastrectomy LSG



2003 lap. Y-Roux Gastric Bypass LRYGB



2009 lap. Biliopancreatic Diversion BPD



2010 lap. One Anastomosis Gastric Bypass



2016 lap. SADI-S

The Past...

Historical reports claim that the first bariatric surgery was performed in

Spain, in the 10th century. D. Sancho, king of Leon (935-966) was reported to be such an obese man that he could not walk, ride a horse or pick up a sword. This led him to lose his throne. He was then escorted by his grandmother to Cordoba to be treated by the **famous Jewish doctor *Hasdai Ibn Shaprut***.

He sutured the kings' lips who could only be fed on a liquid diet through a straw, consisting of *teriaca*: a mixture of several herbs, including opium, whose side effects stimulated weight loss.

First Bariatric Procedure



Am Surg 2022 Jul;88(7):1526-1529.
Endocrinol Nutr. 2016;63:100–101.

The Past...

King Sancho I („the Fat“) lost half his weight (app 120kg), returned to Leon in his horse and regained his throne!

... he later became a regular eater of fruits...



First Bariatric Procedure



Am Surg 2022 Jul;88(7):1526-1529.
Endocrinol Nutr. 2016;63:100–101.

Learn from The Past...

An apple the day keeps the doctor away...



First Bariatric Procedure



Am Surg 2022 Jul;88(7):1526-1529.
Endocrinol Nutr. 2016;63:100-101.

Complication rates (primary LSG):

Leak:	0-7%
Bleeding:	0.4-2.38%
Obstruction:	0-1.02%



Leaks

Diagnosis:

Symptoms (hf, pain, fever)

methylene blue test

GI transit test

CT scan with CM

Management:

drainage of abscesses

stents

Endovac/VAC-Stent

T-Tube

Double pig tail

Septotomy

primary repair (early)

fibrin glue

Gastric Leak After Laparoscopic Sleeve Gastrectomy

Leaks

Manuel Ferrer Márquez • Manuel Ferrer Ayza •
Ricardo Belda Lozano • María del Mar Rico Morales •
Jose Miguel García Díez • Ricardo Belda Poujoulet

Classification:

early: 1-3d

intermediate: 4-7d

late: >8d

Table 1 Incidence of gastric leak after LSG

Article	Year	Patients (n)	Percentage of leaks
Han SM [35]	2005	130	0.7
Hamoui N [36]	2006	118	0.8
Moy J [23]	2008	135	1.4
Serra C [27]	2007	993	0.6
Lalor PF [37]	2008	148	0.7
Kasalicky M [38]	2008	61	0
Casella G [13]	2009	200	3
Frezza EE [39]	2009	53	3.7
Burgos AM [12]	2009	214	3.2
Stroh C [14]	2009	144	7
Ser KH [40]	2010	118	3.39

OBES SURG (2010) 20:1306–1311

Leaks Treatment

Early leak

Late leak /
persisting leak

Re-Laparoscopy
Irrigation
Drainage
Double Pig Tail

Stent placement
(Fibrin glue)

Endo-VAC
Roux Limb
E-Jejunostomy



Leaks Treatment

Early leak

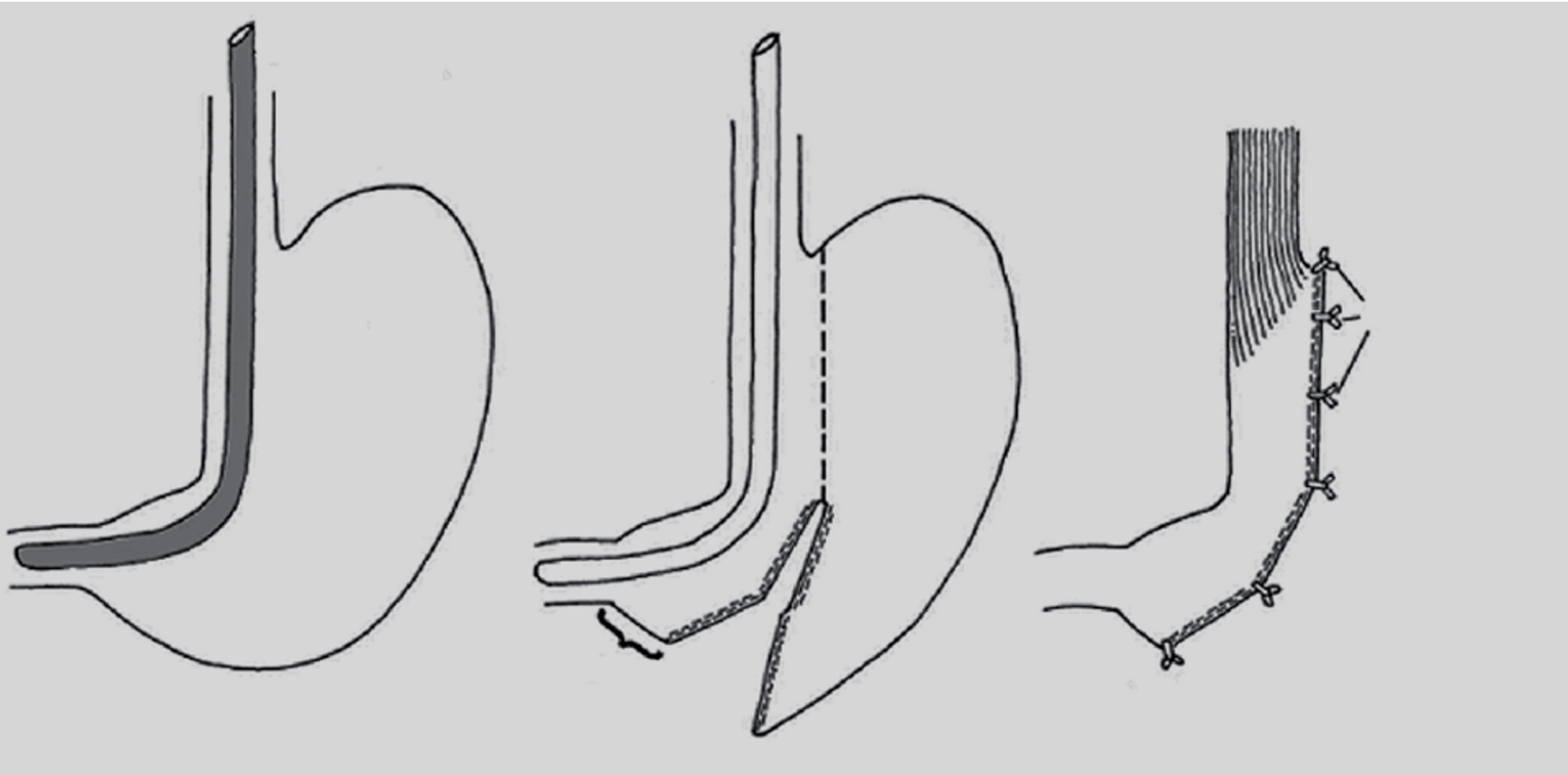
Late leak /
persisting leak

Re-Laparoscopy
Irrigation
Drainage
Double Pig Tail

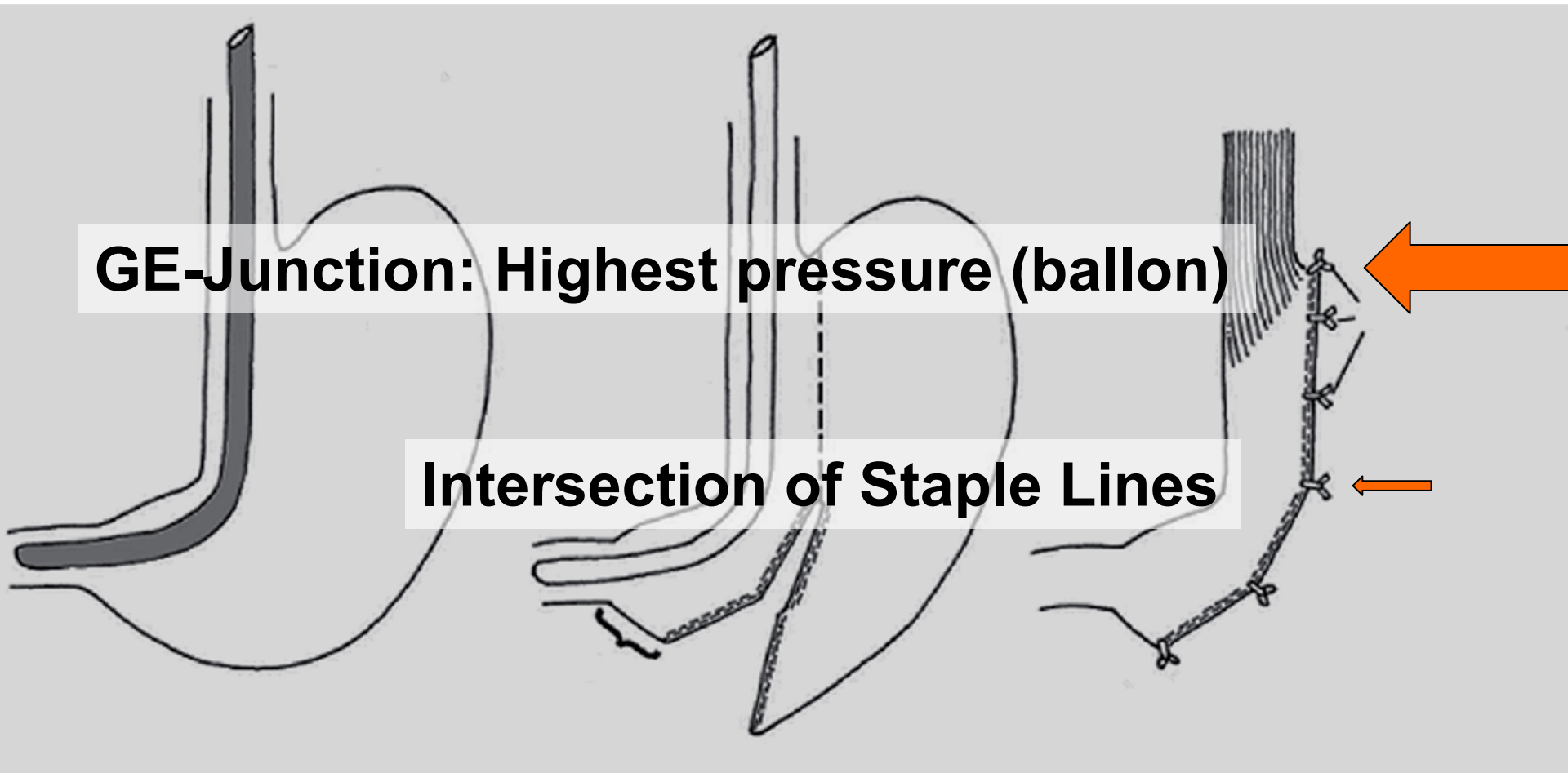
Stent placement
(Fibrin glue)

Endo-VAC
Roux Limb
E-Jejunostomy

Sleeve gastrectomy - Leaks

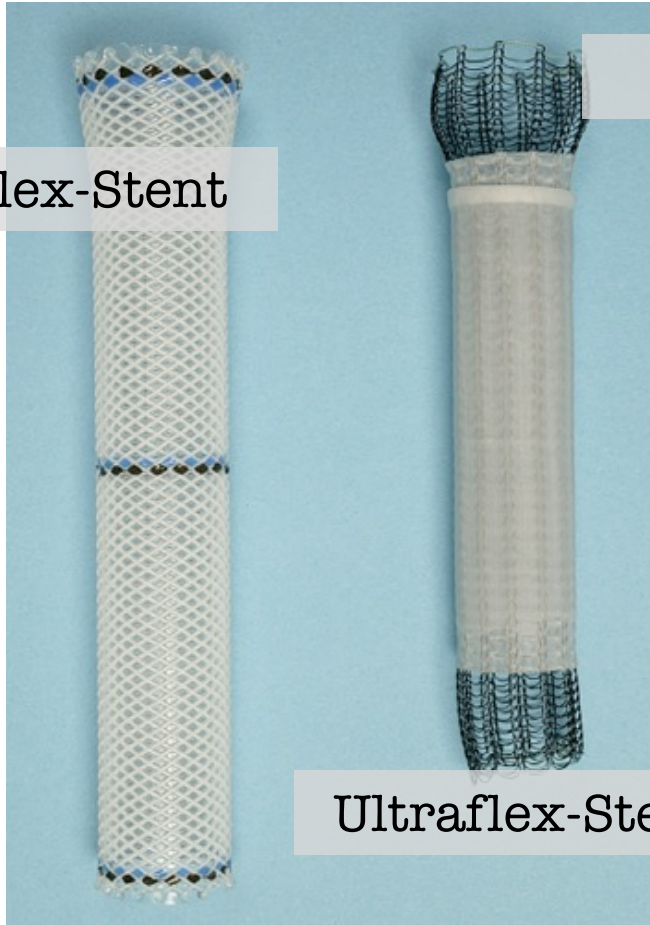


Sleeve gastrectomy - Leaks



Sleeve gastrectomy - Leaks

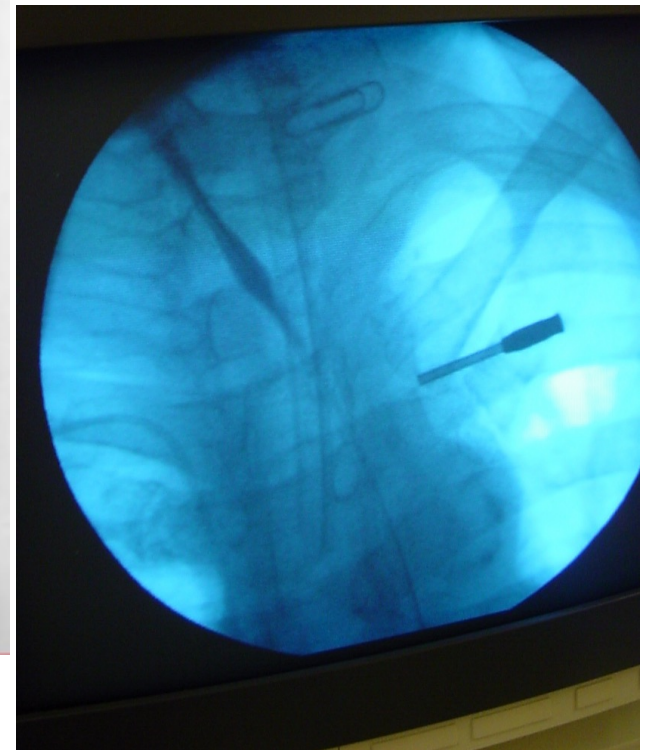
Polyflex-Stent

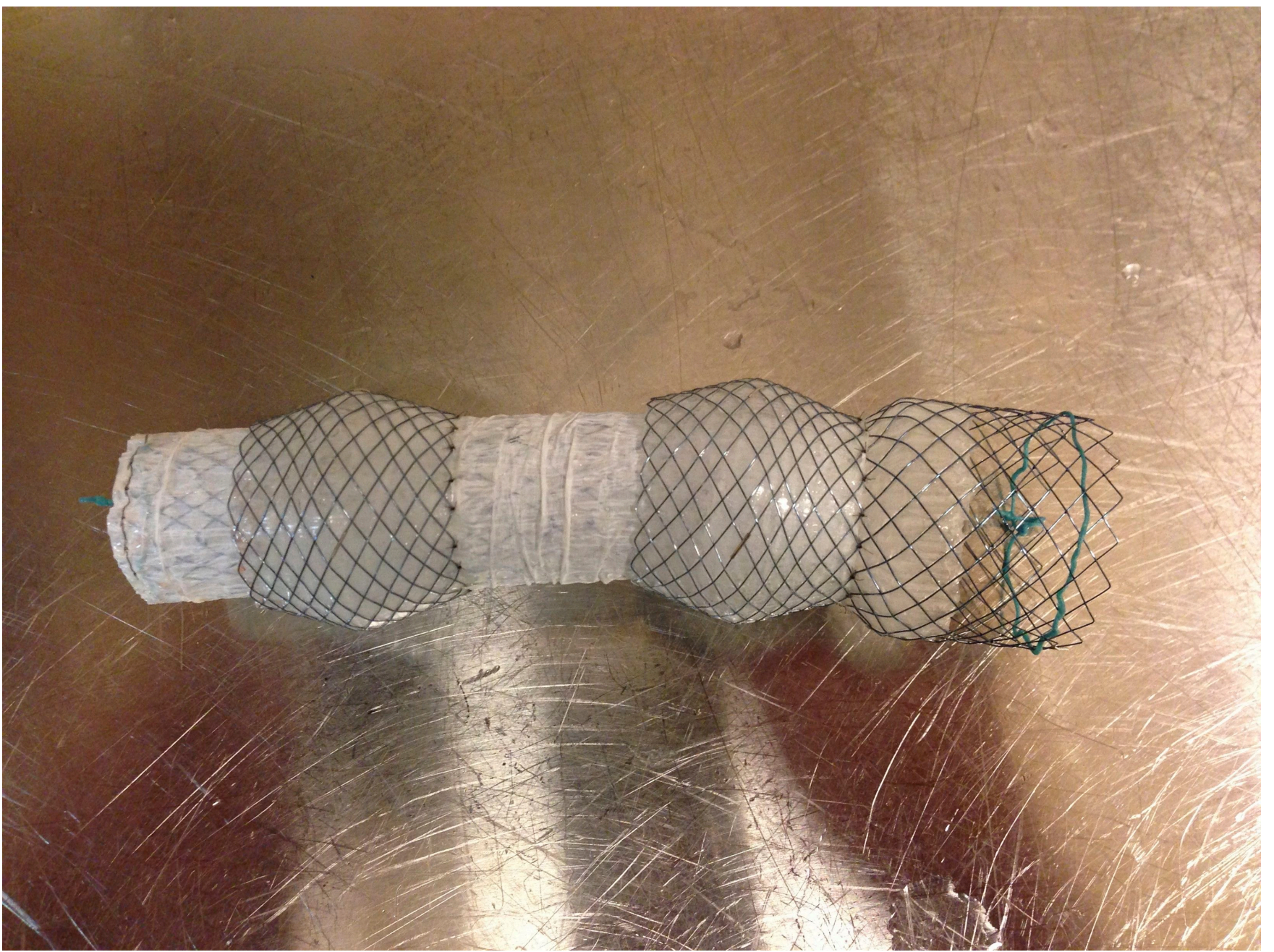


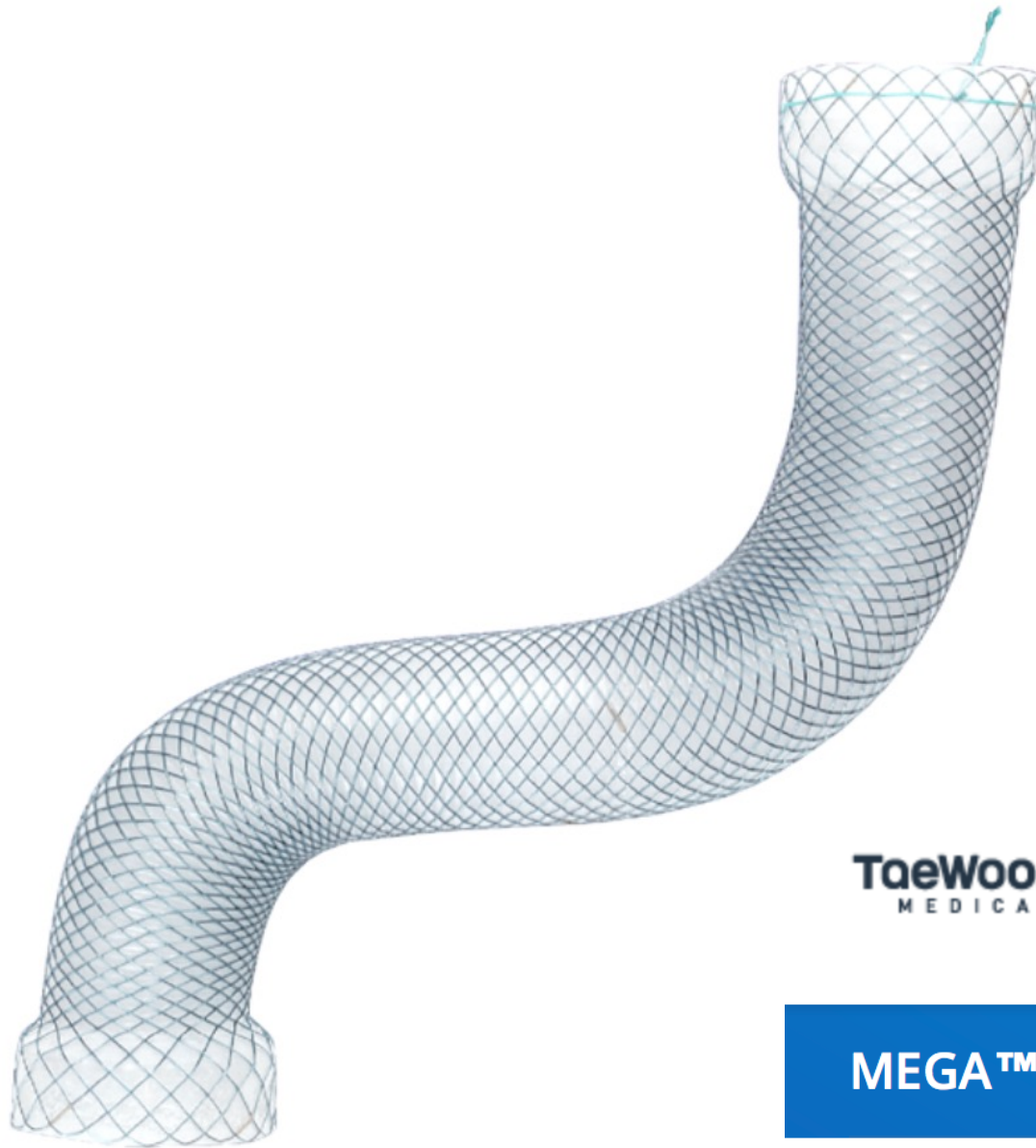
Niti-S Stent



Ultraflex-Stent

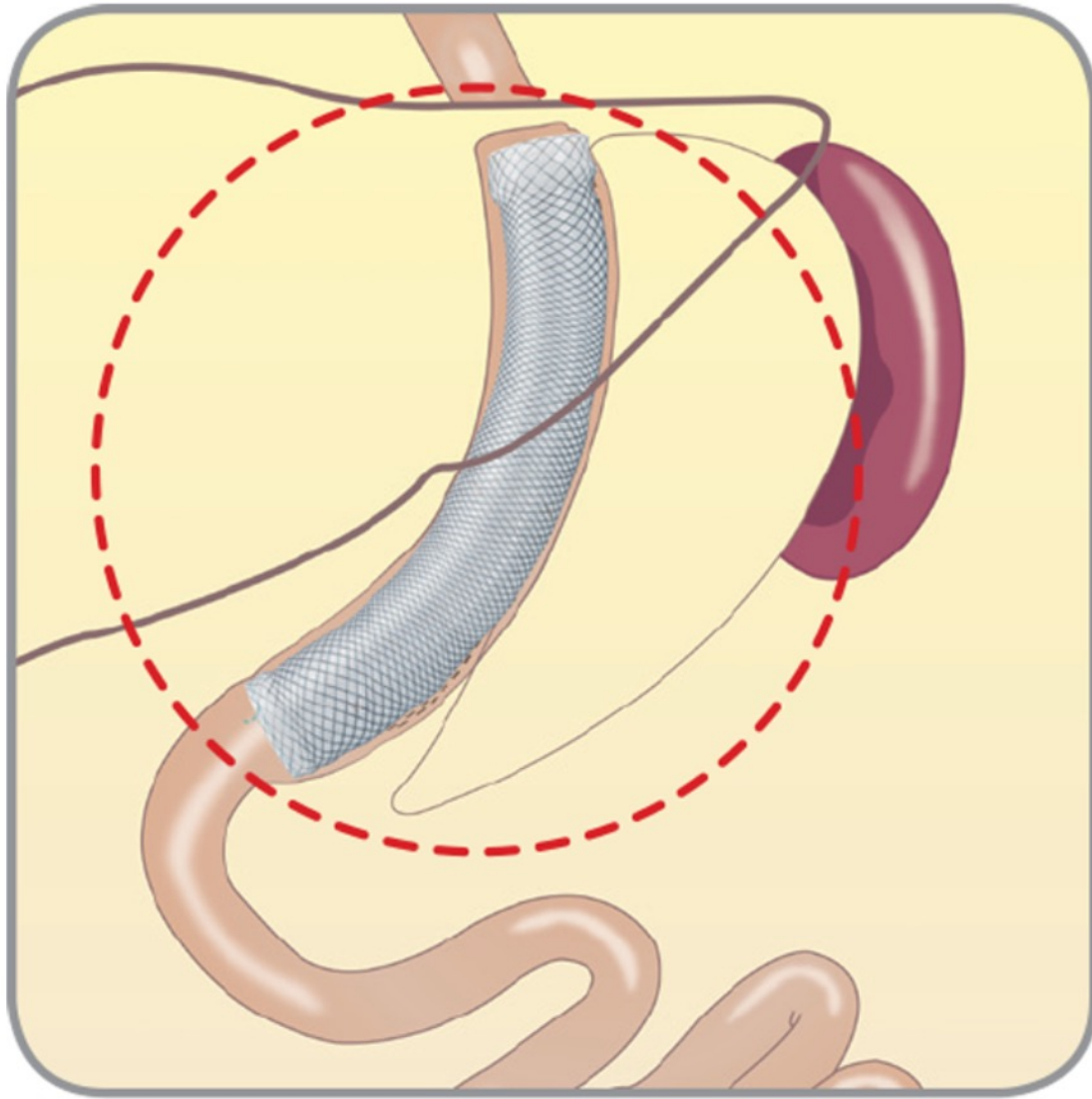






HOME

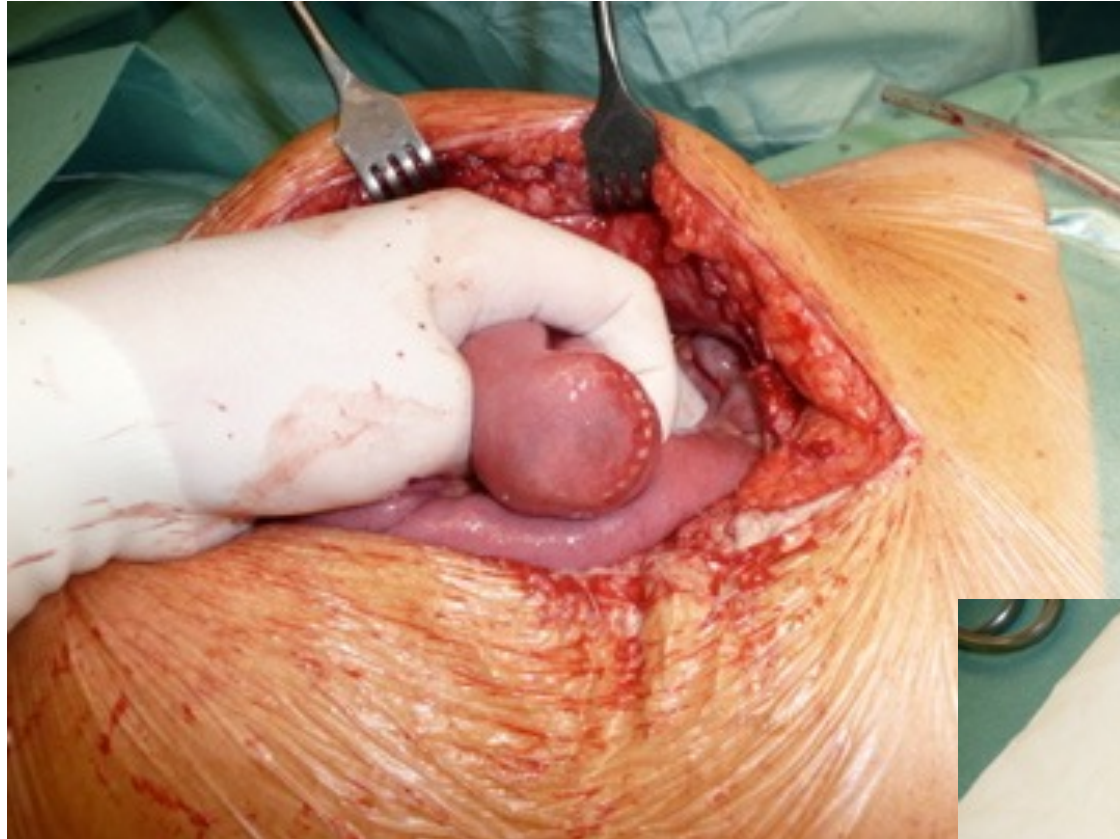
MEGA™ Esophageal Stent



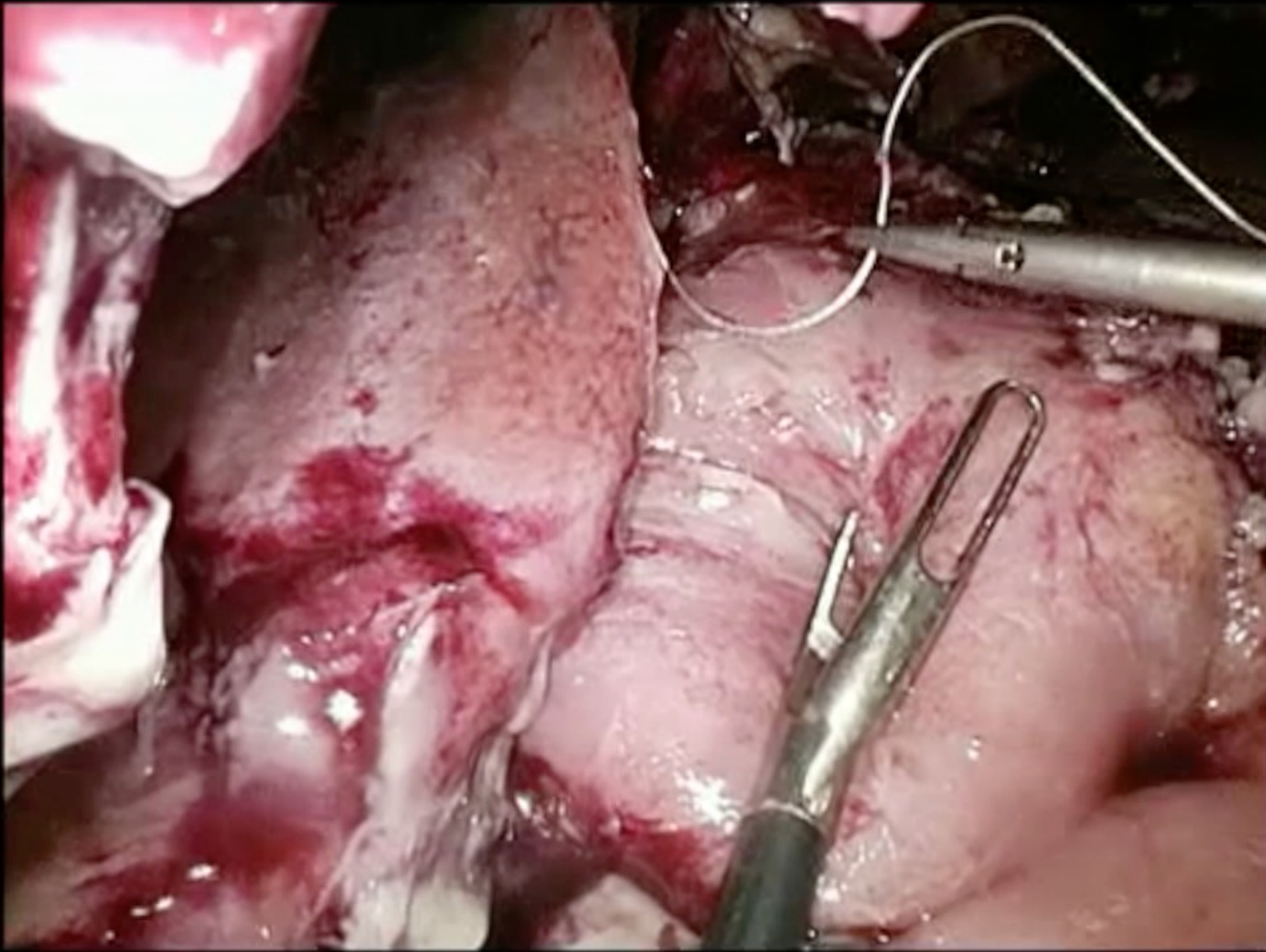
From the esophagus
to the duodenum

Converting a high
pressure system to
a low pressure
system





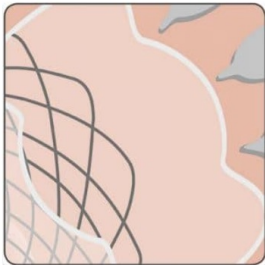
How to avoid Stent Migration: Laparoscopic Fixation



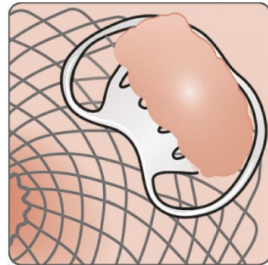
Alternative Stent fixation: OVESCO – Stentfix OTSC System

Application of the stentfix OTSC® System

→ PROXIMAL FIXATION OF THE STENT

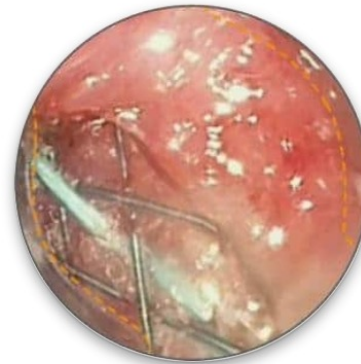


Aim at application site;
align clip tooth rows parallel
to stent opening so that
tissue and stent mesh are
evenly captured;
mobilization of tissue by
suction



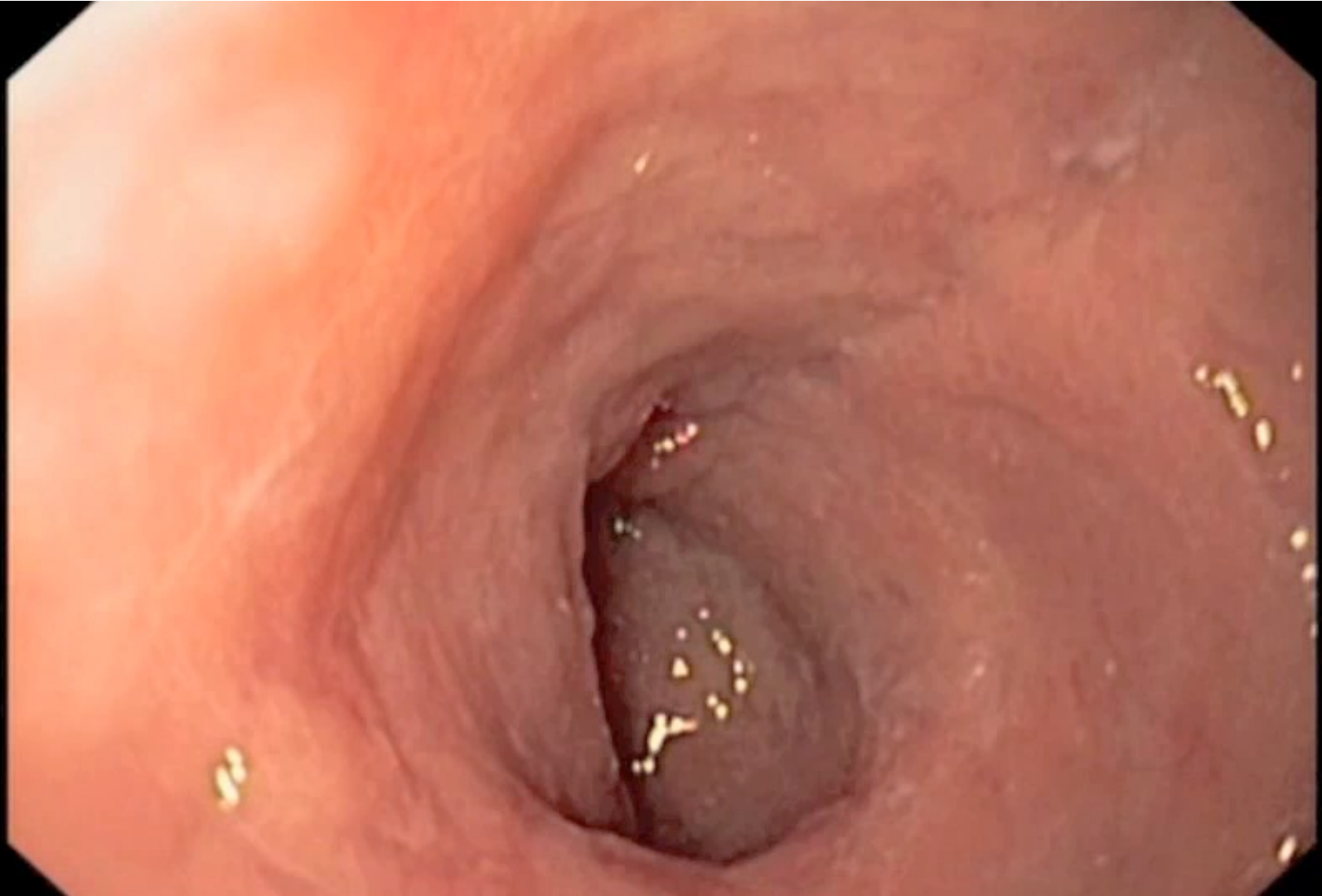
Clip application by turning
the hand wheel; optimal
adaptation of the clip to the
wall

Example*:



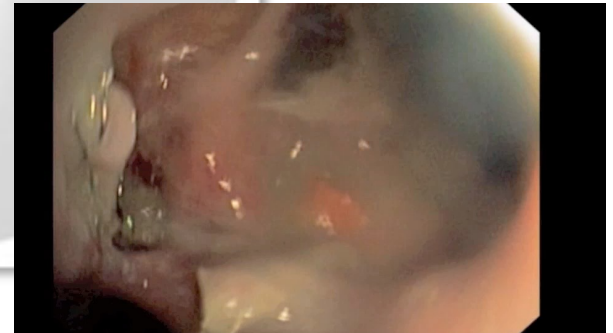
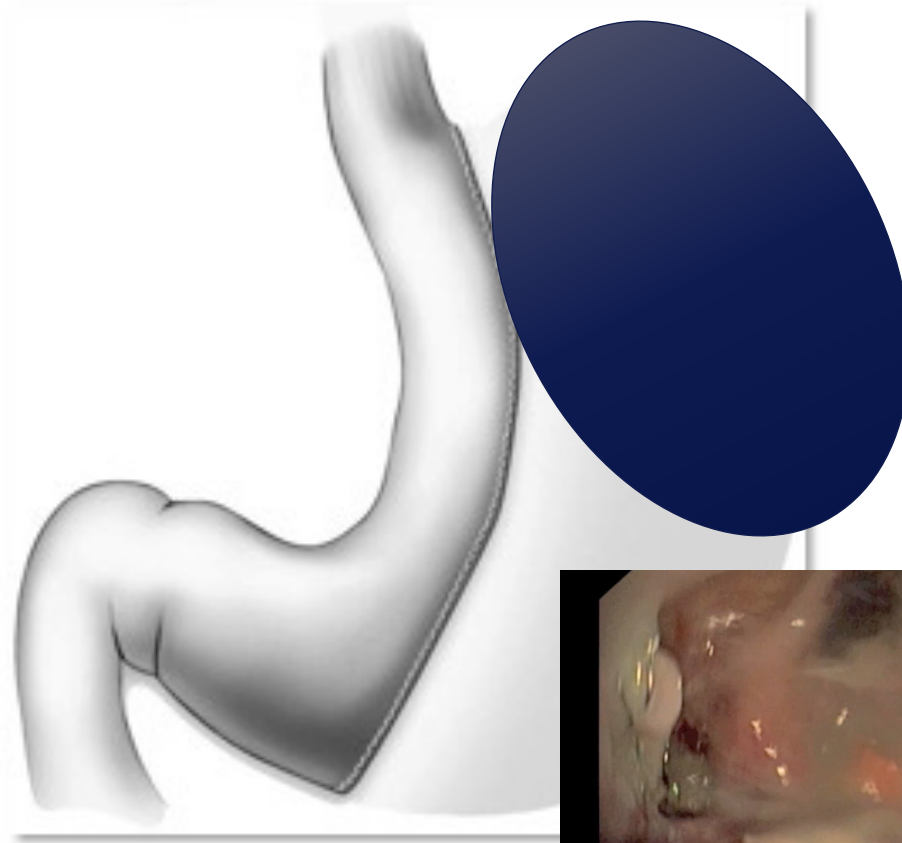
* Source: Dr. Massimo Conio, Dept. of Gastroenterology, Sanremo Hospital, Italy

Chronic Leak: What Now?



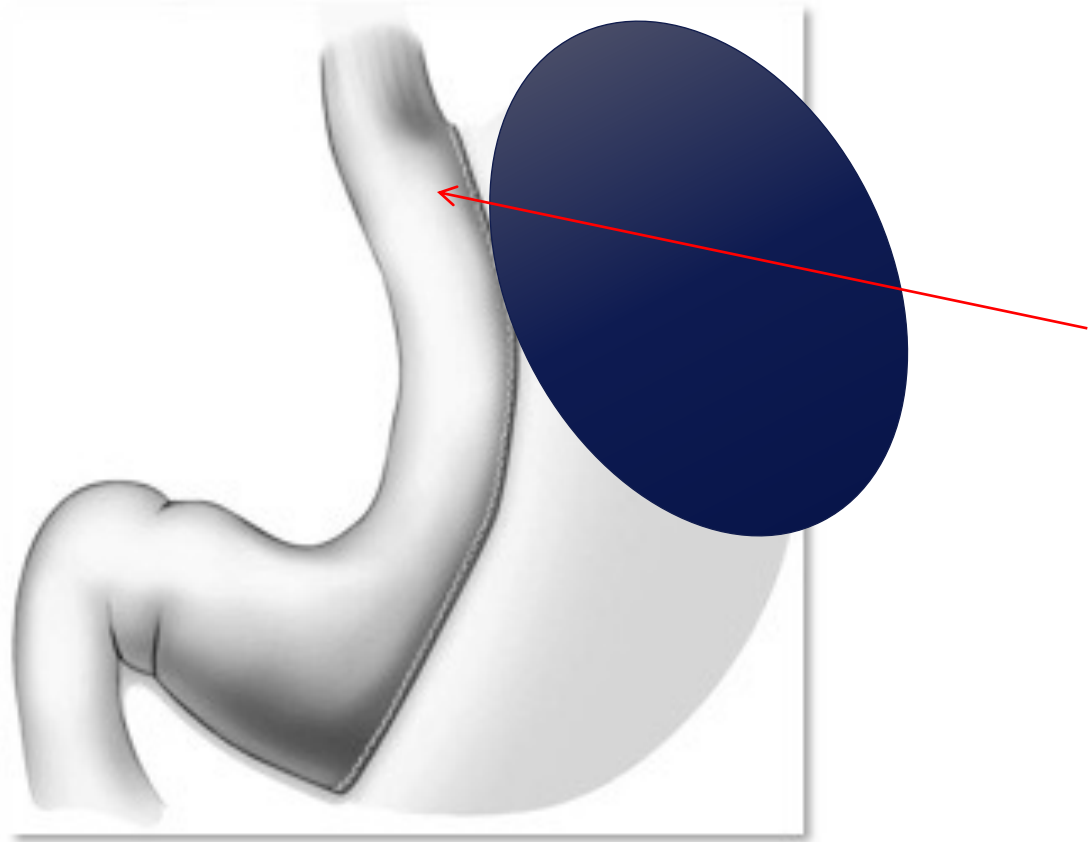
Sleeve gastrectomy - Leaks

Endo-VAC



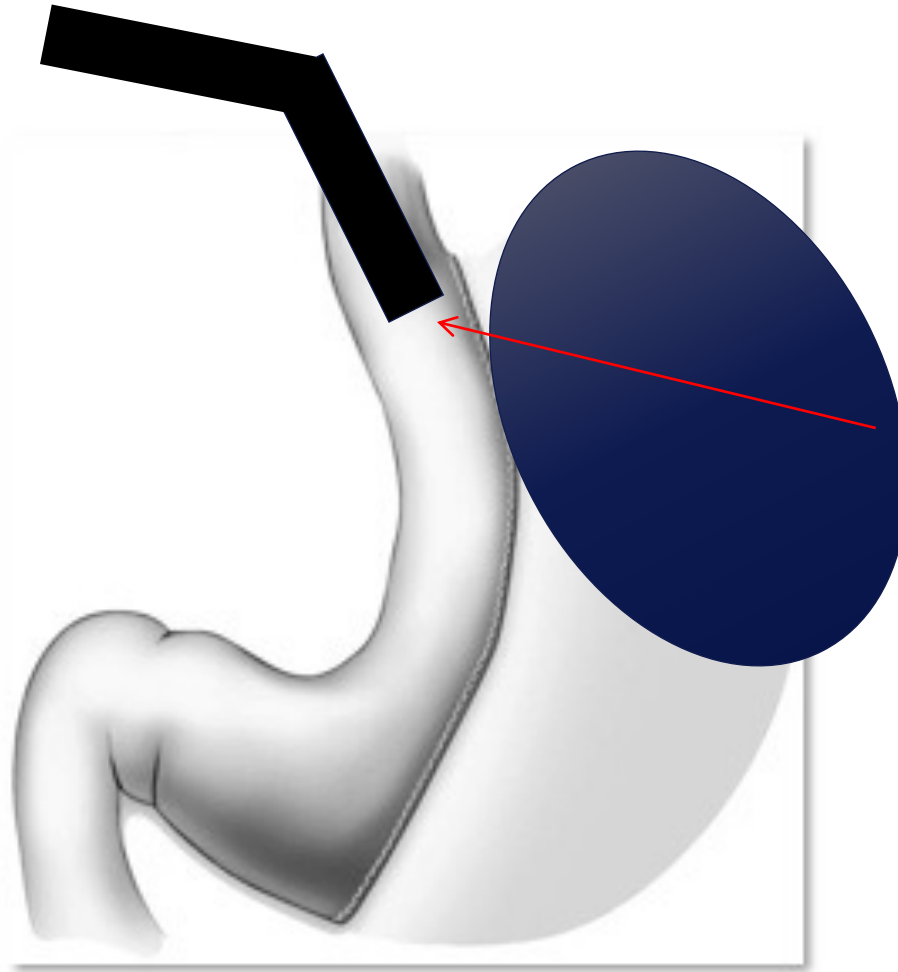
Sleeve gastrectomy - Leaks

Endo-VAC



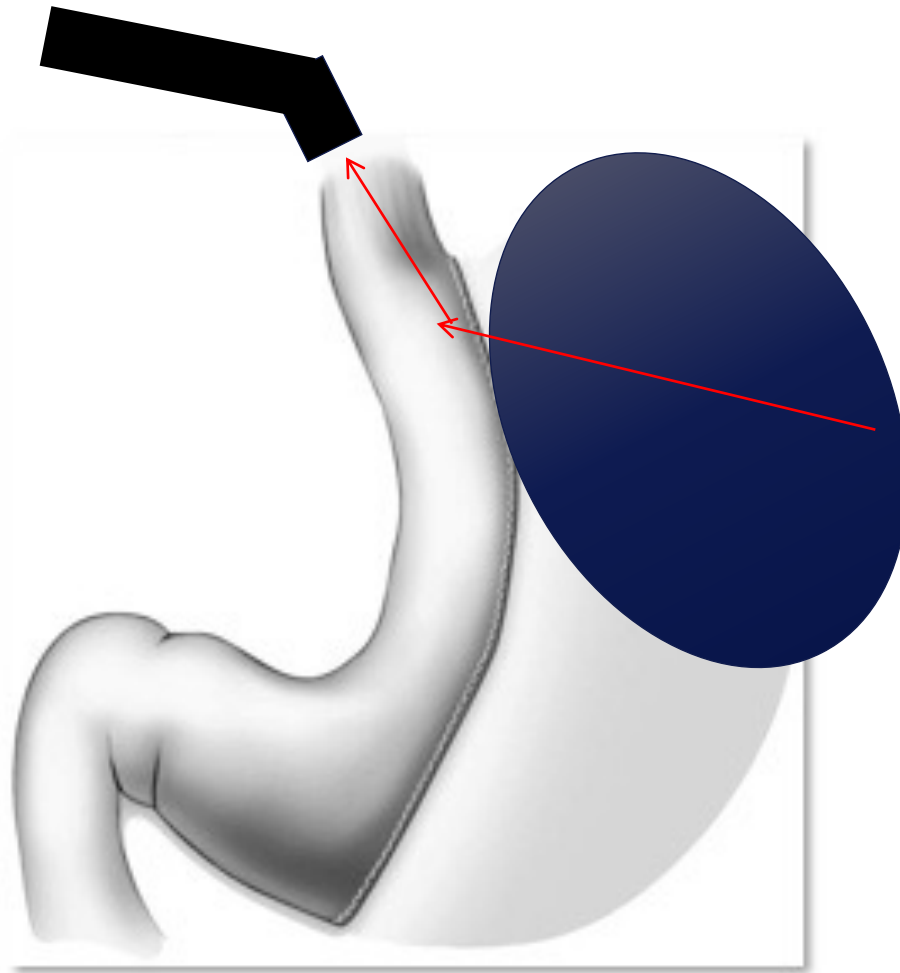
Sleeve gastrectomy - Leaks

Endo-VAC



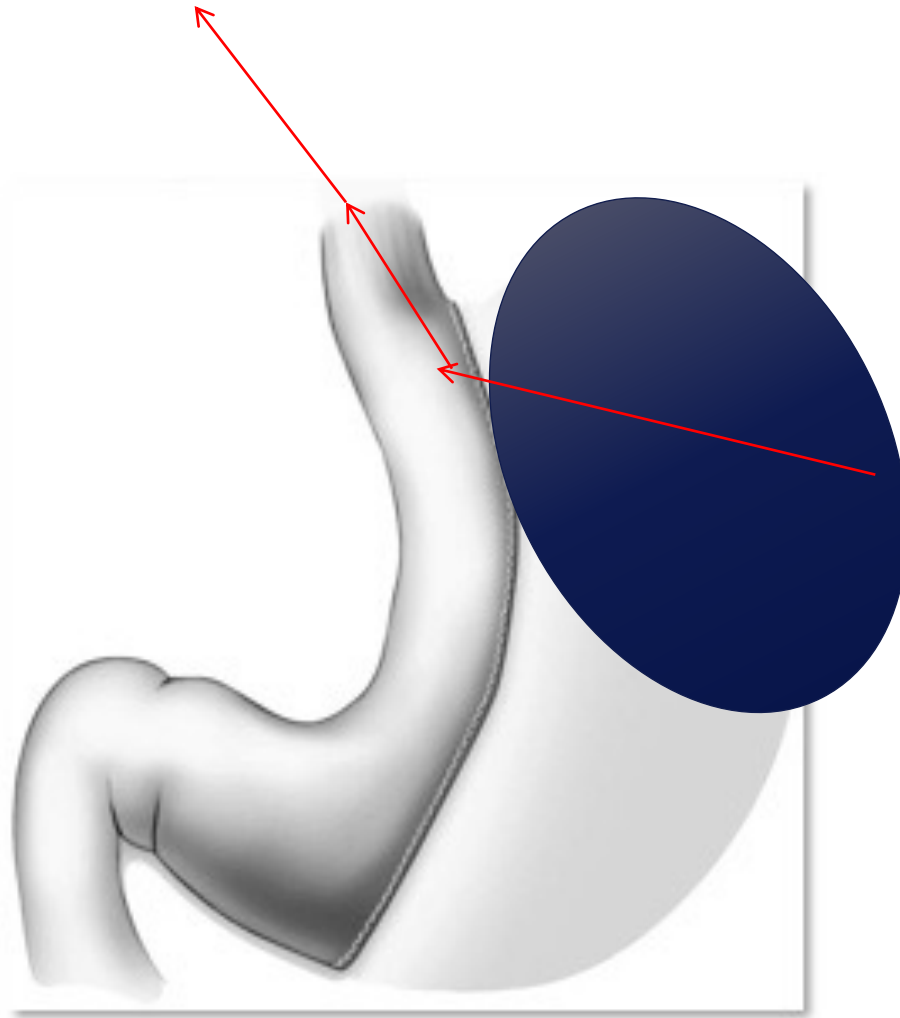
Sleeve gastrectomy - Leaks

Endo-VAC

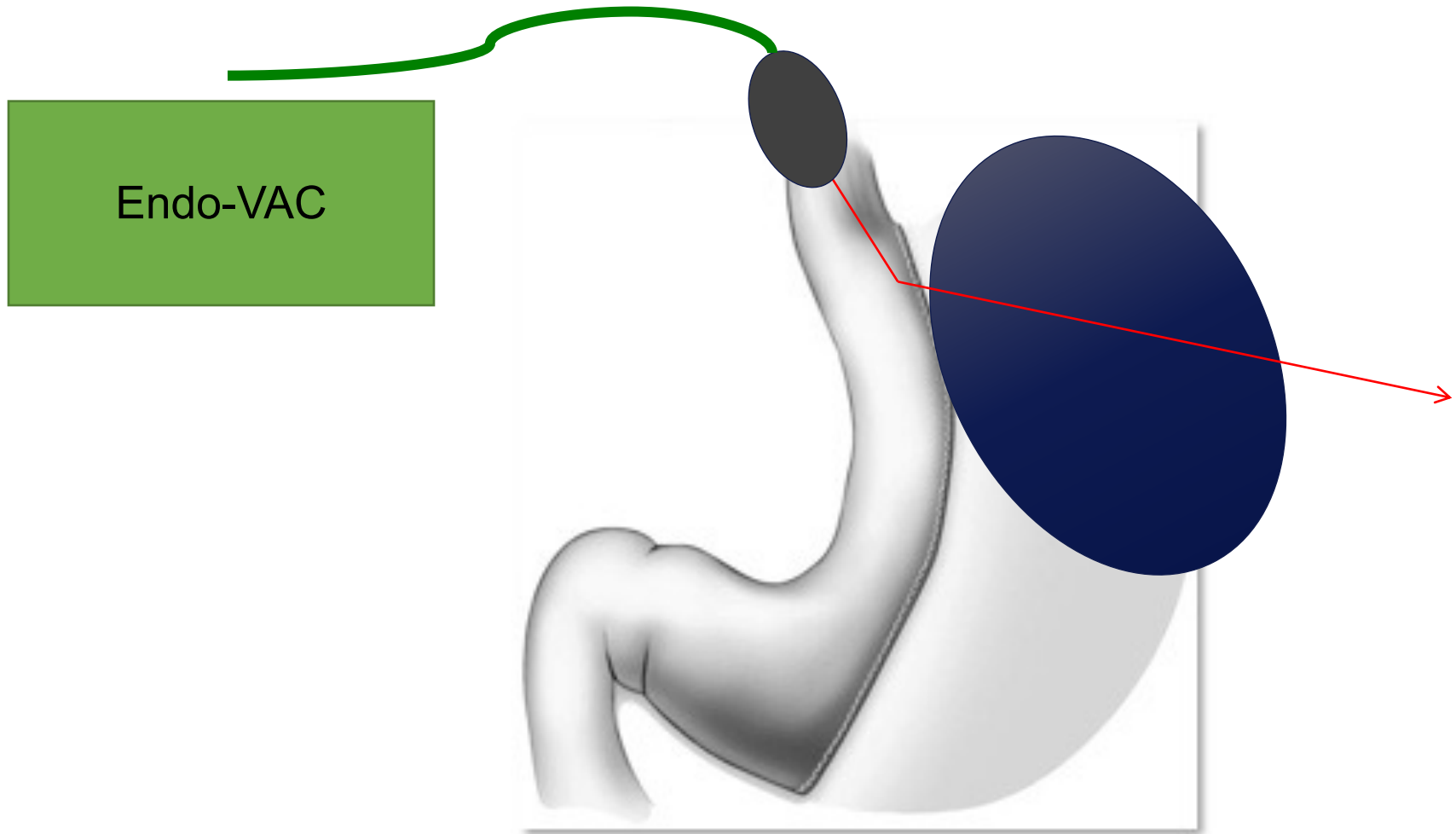


Sleeve gastrectomy - Leaks

Endo-VAC

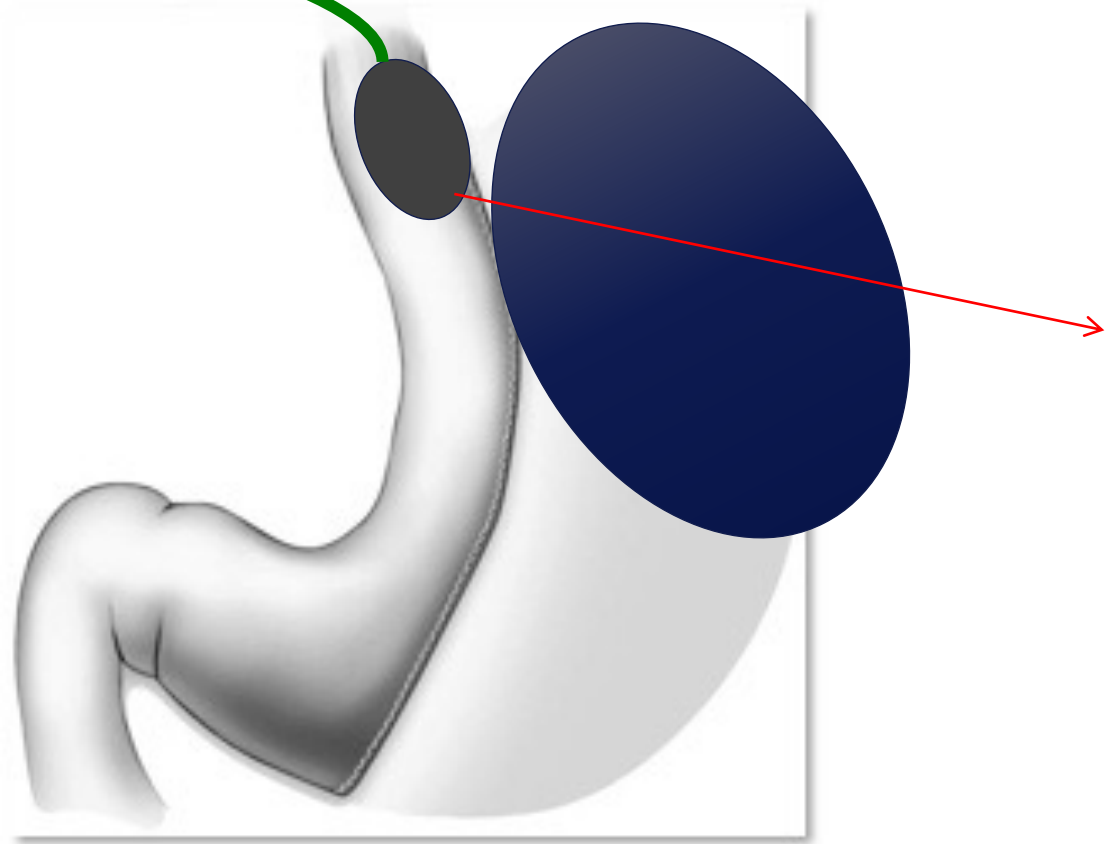


Sleeve gastrectomy - Leaks



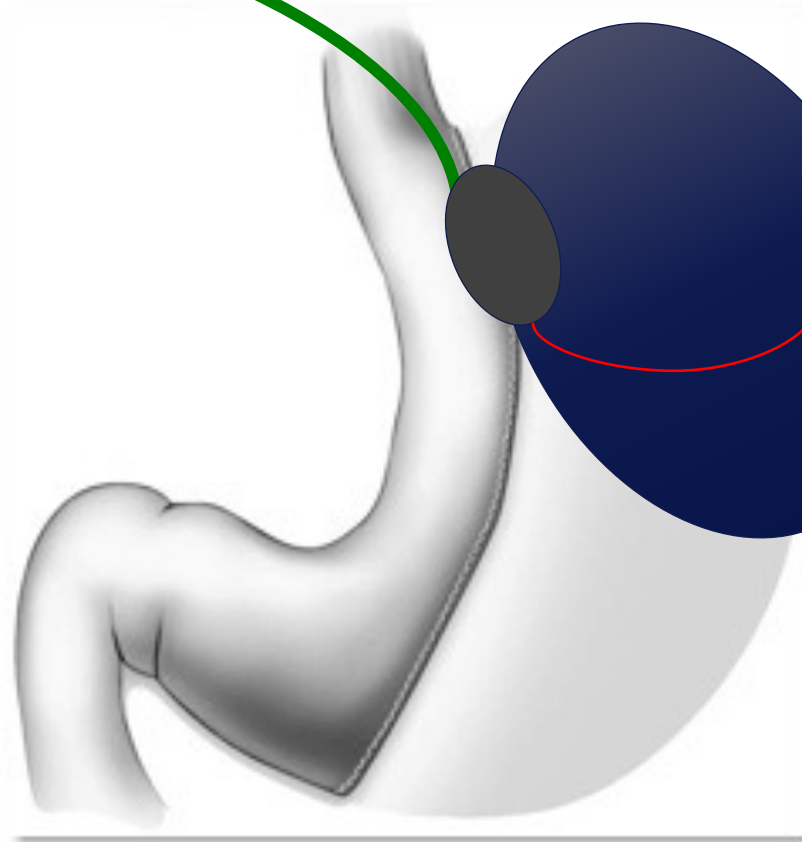
Sleeve gastrectomy - Leaks

Endo-VAC



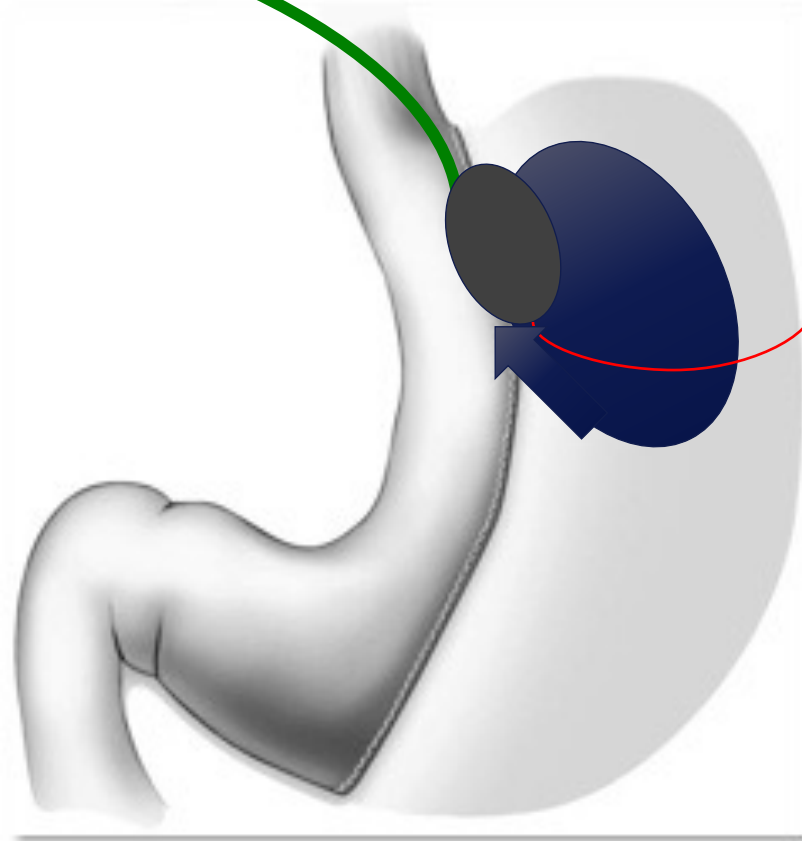
Sleeve gastrectomy - Leaks

Endo-VAC



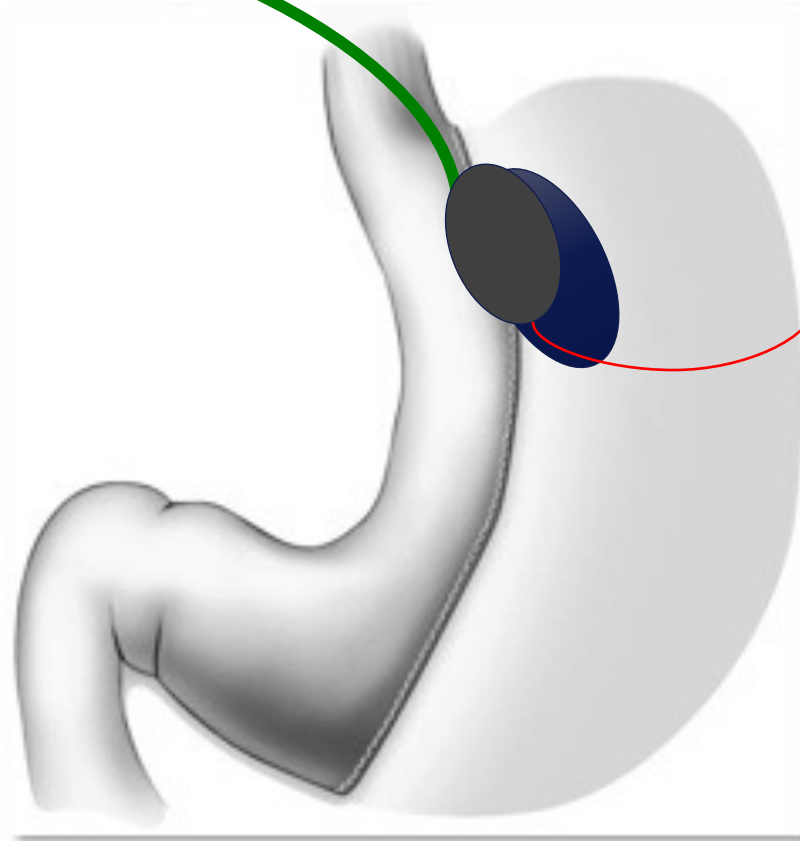
Sleeve gastrectomy - Leaks

Endo-VAC



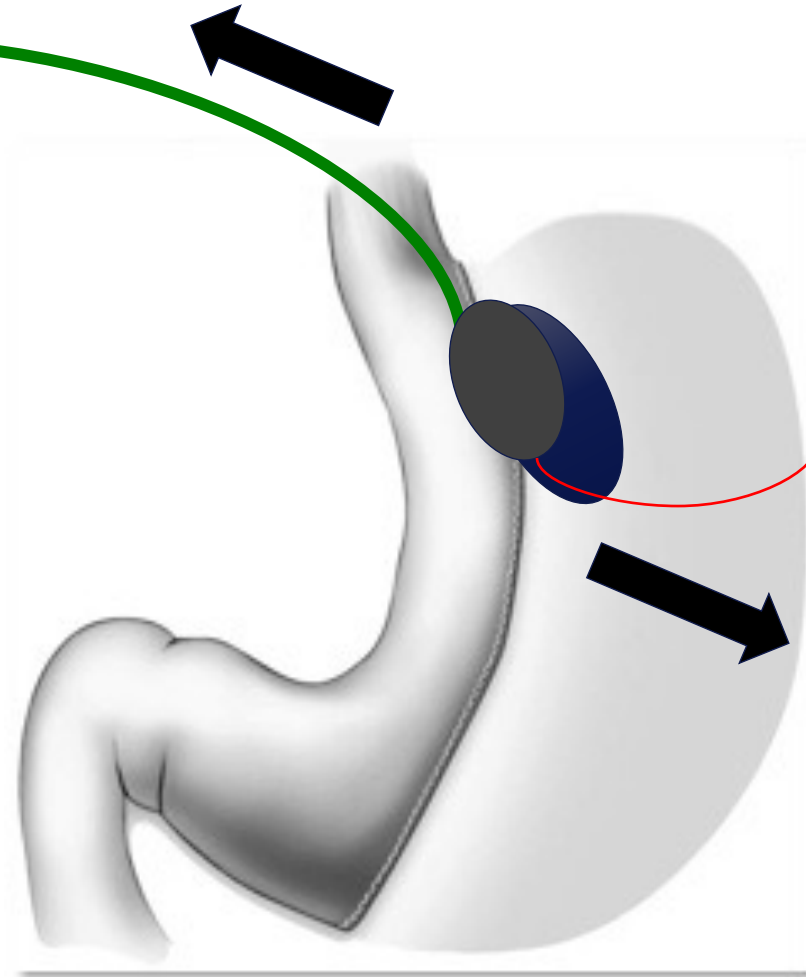
Sleeve gastrectomy - Leaks

Endo-VAC



Sleeve gastrectomy - Leaks

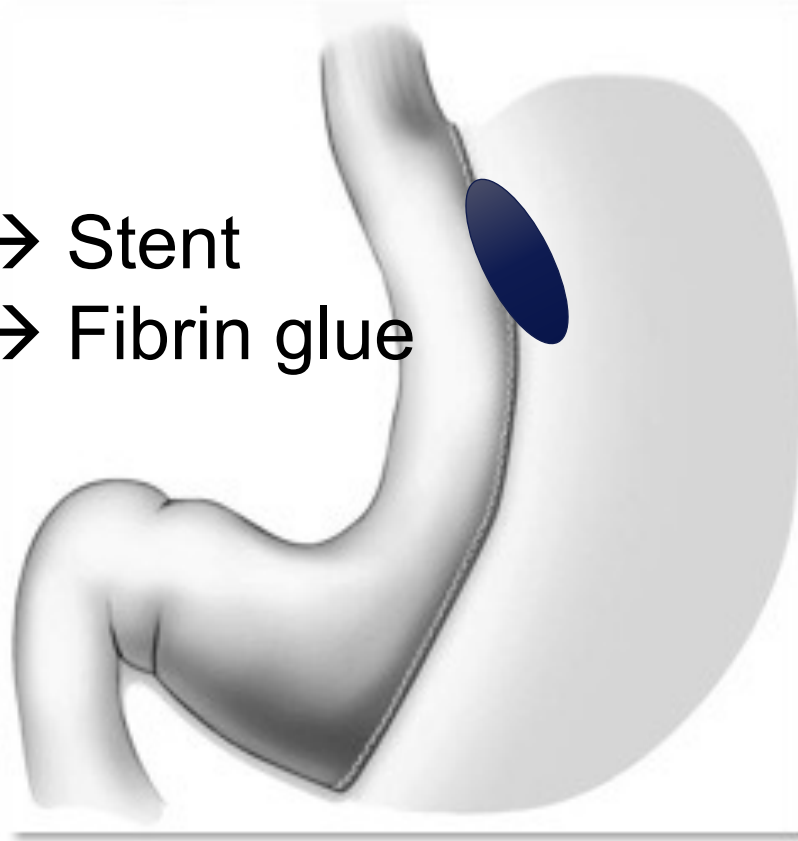
Endo-VAC



Sleeve gastrectomy - Leaks

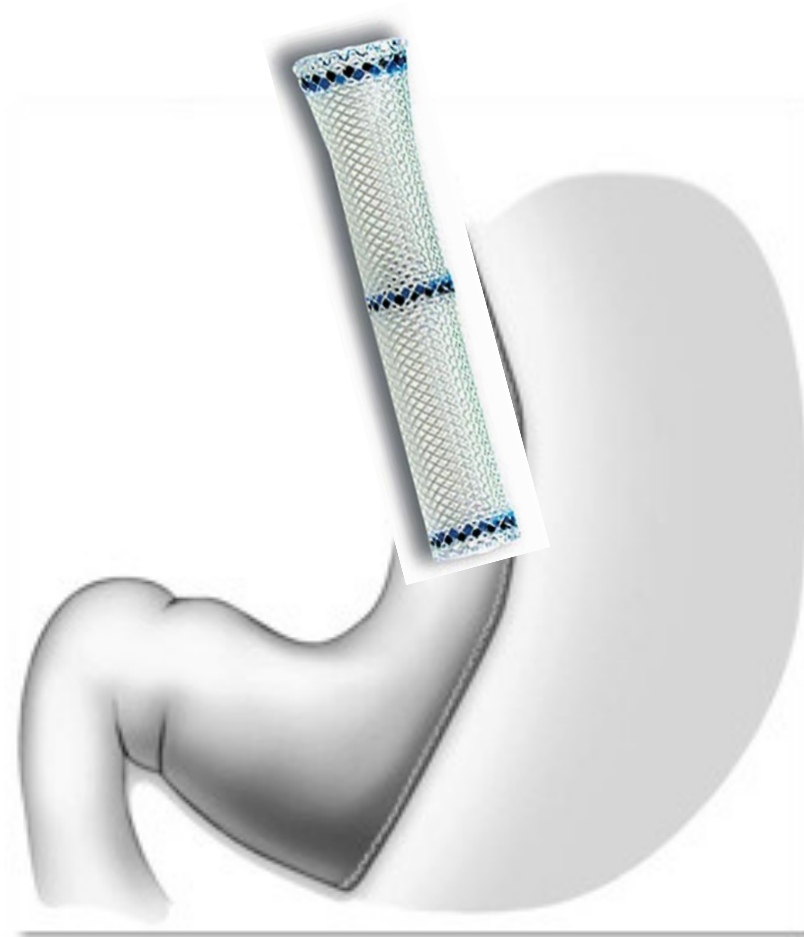
Endo-VAC

- Stent
- Fibrin glue



Sleeve gastrectomy - Leaks

Endo-VAC

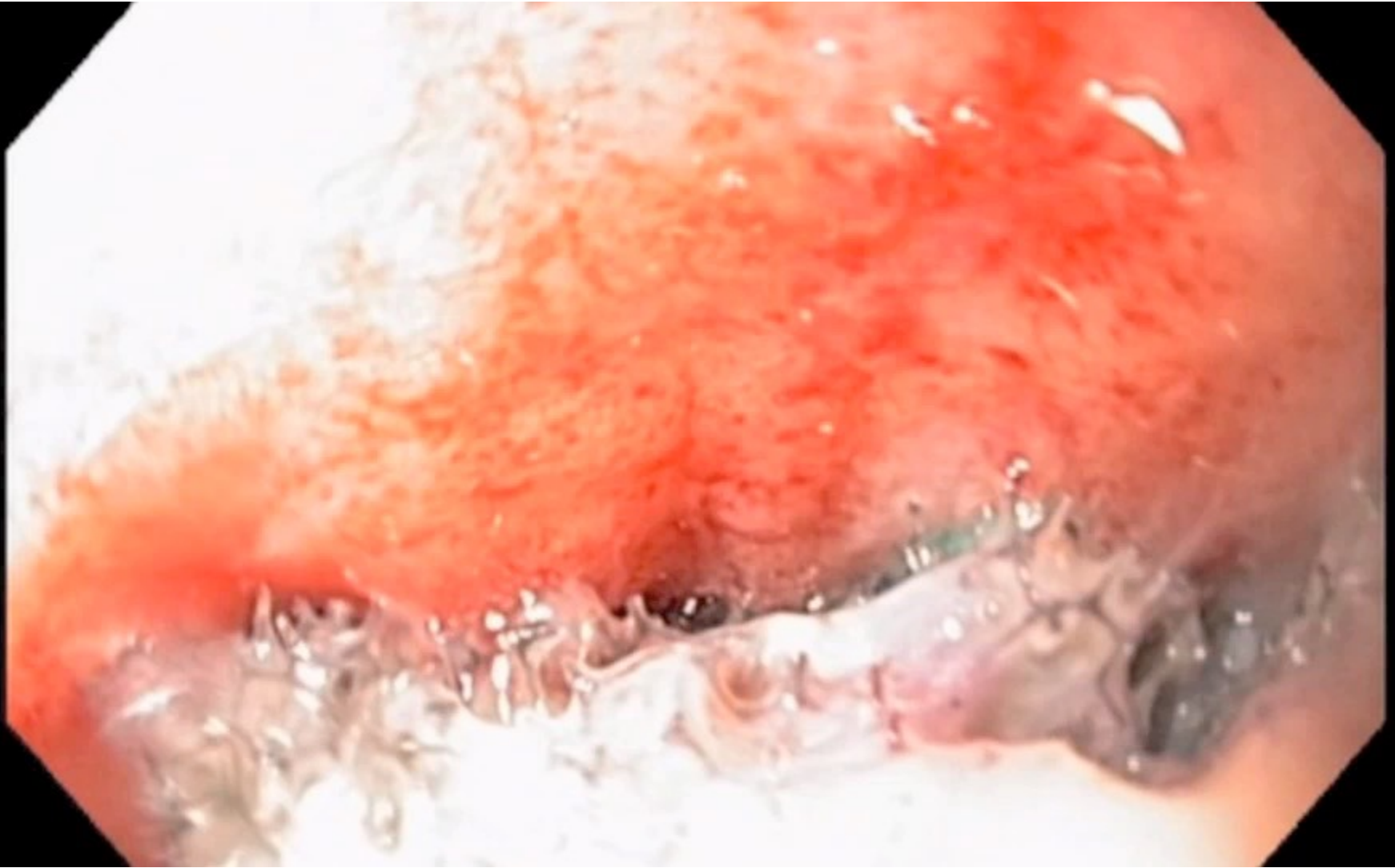


Sleeve gastrectomy - Leaks

Endo-VAC



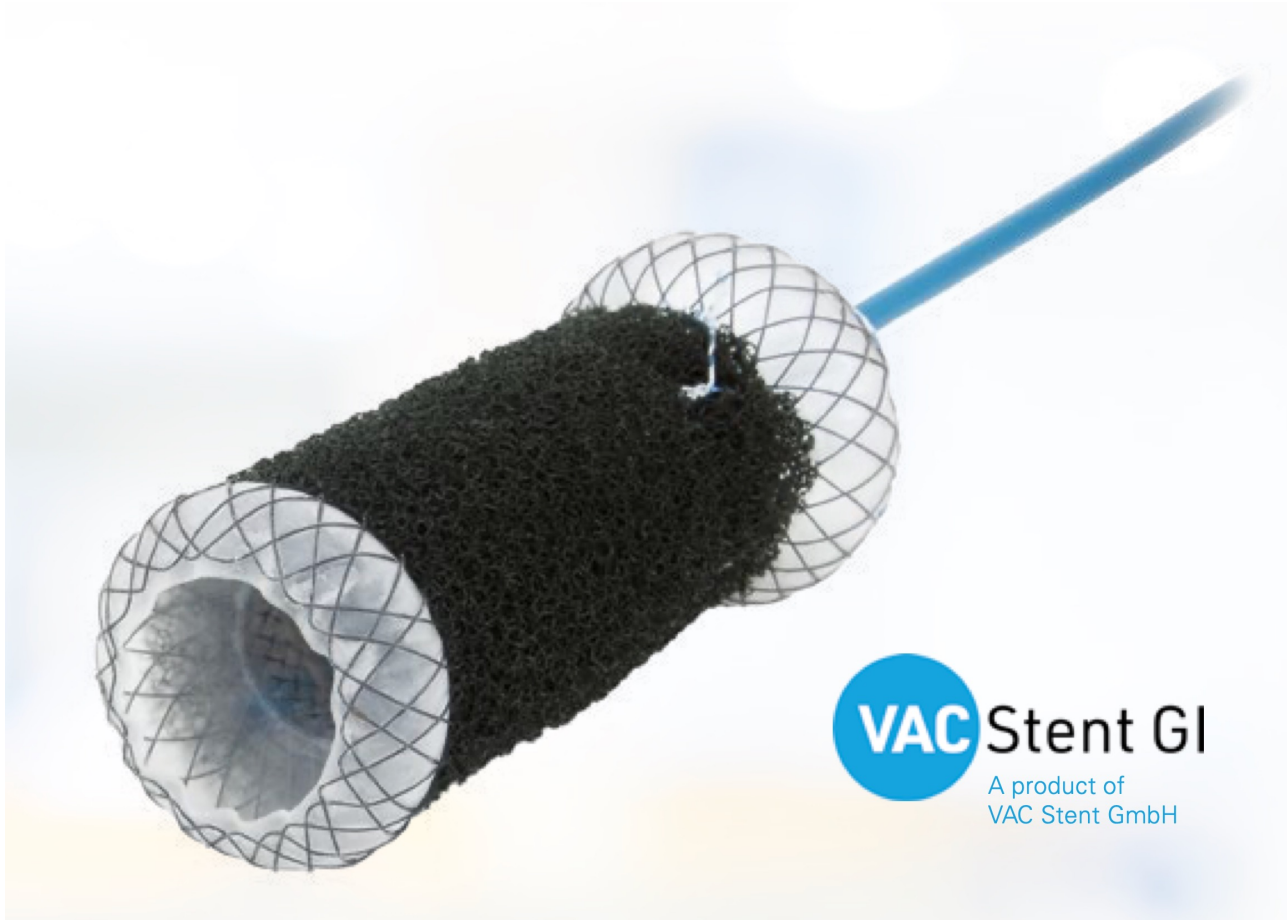
Sleeve gastrectomy – Leaks - EndoVac



B Braun: Eso-SPONGE®



Sleeve gastrectomy - Leaks



Sleeve gastrectomy - Leaks

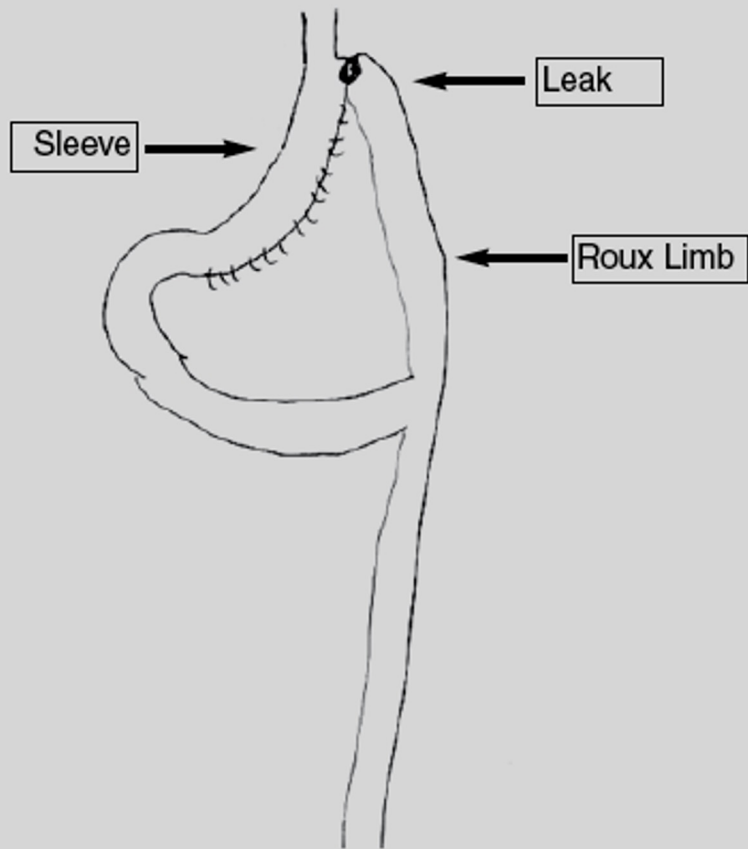
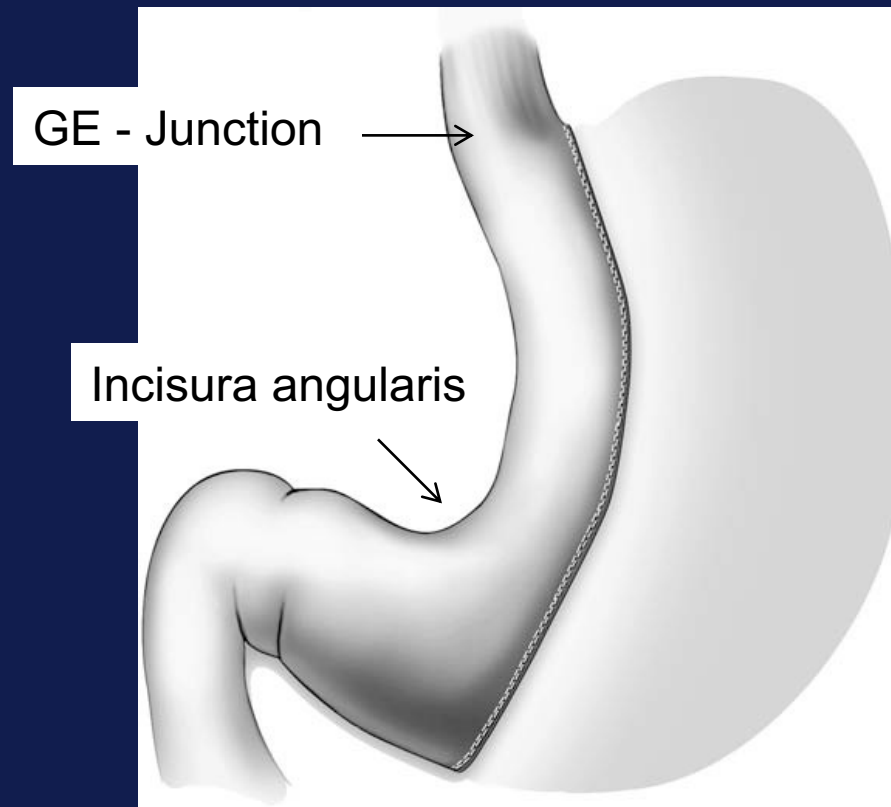


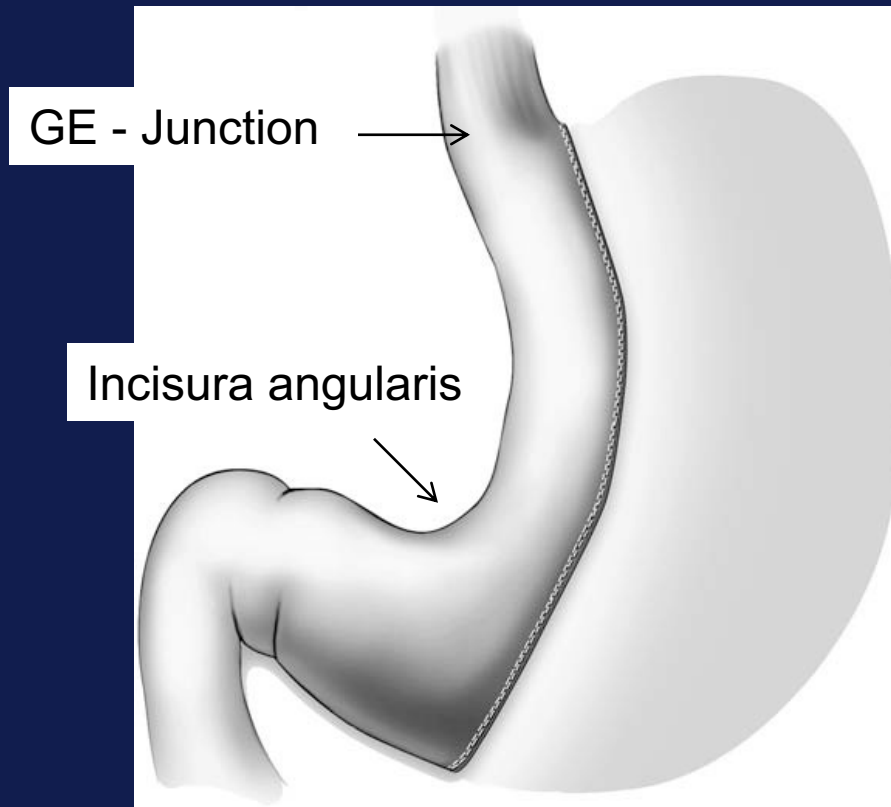
Figure 1. The sleeve and Roux-en-Y limb are draining the EGJ lumen.

Baltasar, Obes Surg 2007

Acute Obstruction



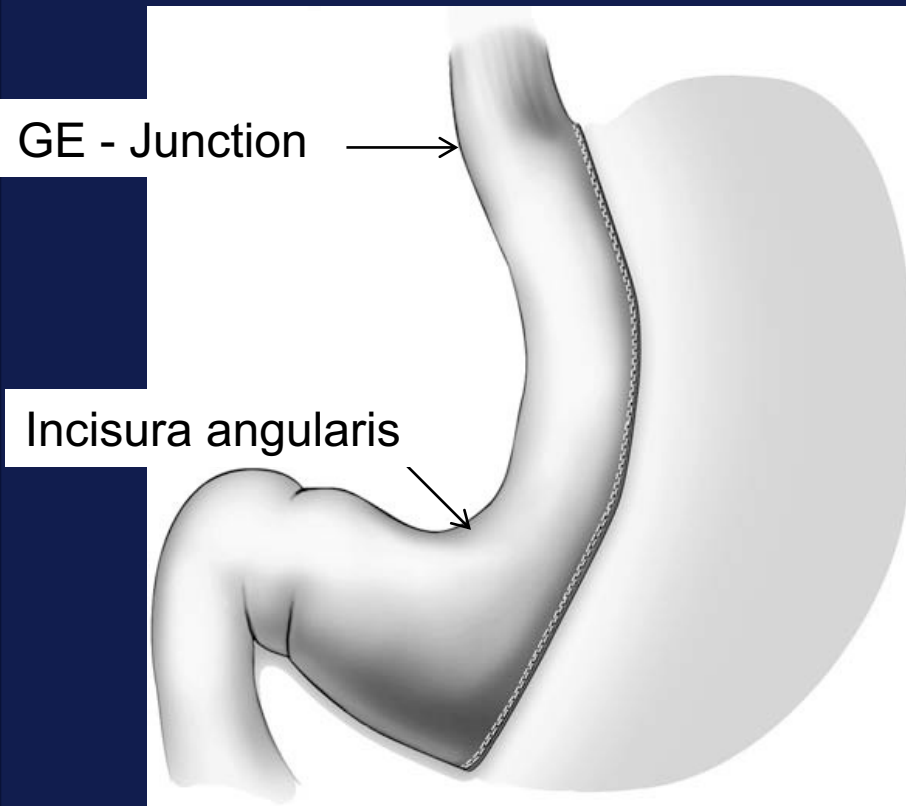
Acute Obstruction



Bolus Impactation:
Endoscopy+removal
of the bolus

Dilatation
Stent

Obstruction: How to avoid



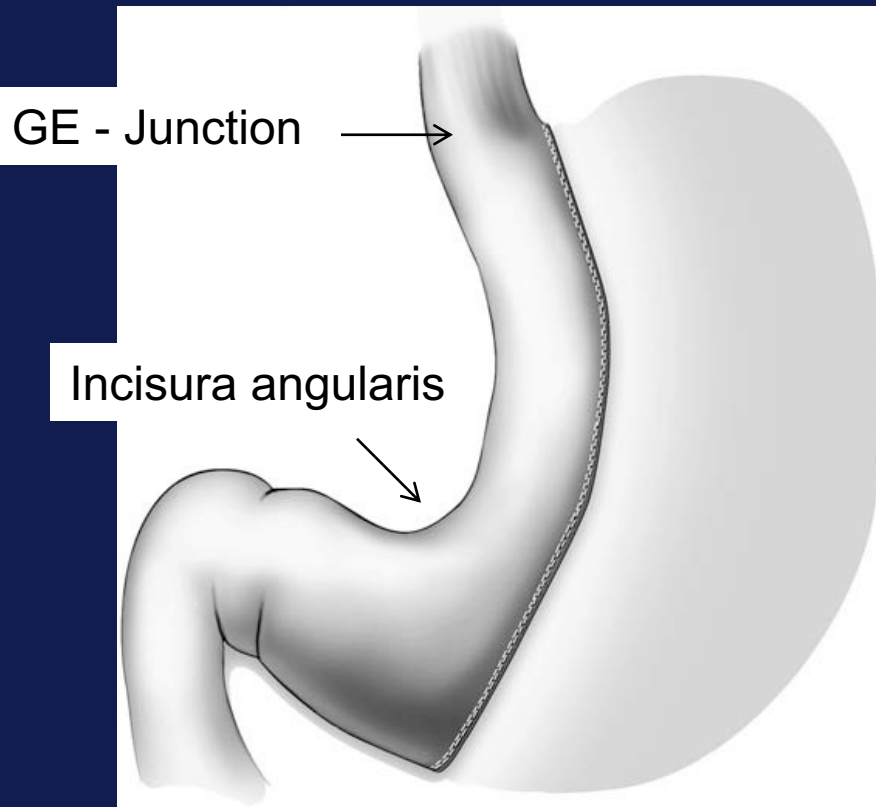
Do not staple too close to the angle of His

Landmark: Vessels from the lesser curve

Oversewing: Stop every 5-6cm, avoid kinking

Fix greater curvature to the omentum

Obstruction: Treatment



Dilatation

Stent

(Seromyotomy)

**Conversion to other
procedures
(e.g. RY-Gastric Bypass)**

Bleeding

Sleeve gastrectomy - Hemorrhage

- Staple line** → oversewing/buttressing material
- Trokar sites → close all 10/12/15mm trocars
- Splenic injury → take care
- Liver laceration → type of liver retractor (probe)

Sleeve gastrectomy - Hemorrhage

Staple line

→ oversewing staple line with pledget material

Trokar sites

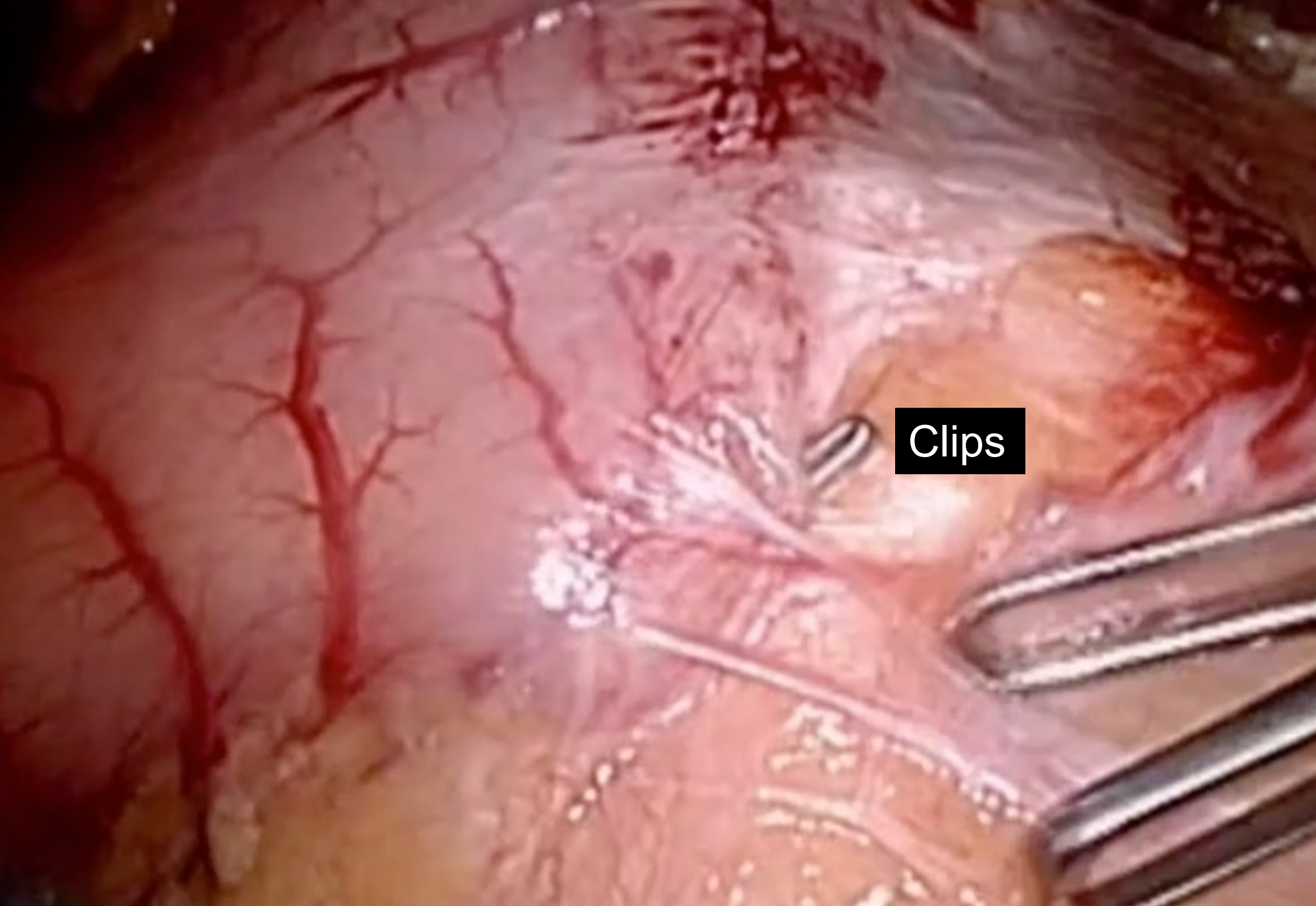
→ close with 15mm trocars

Splenic injury

Liver laceration

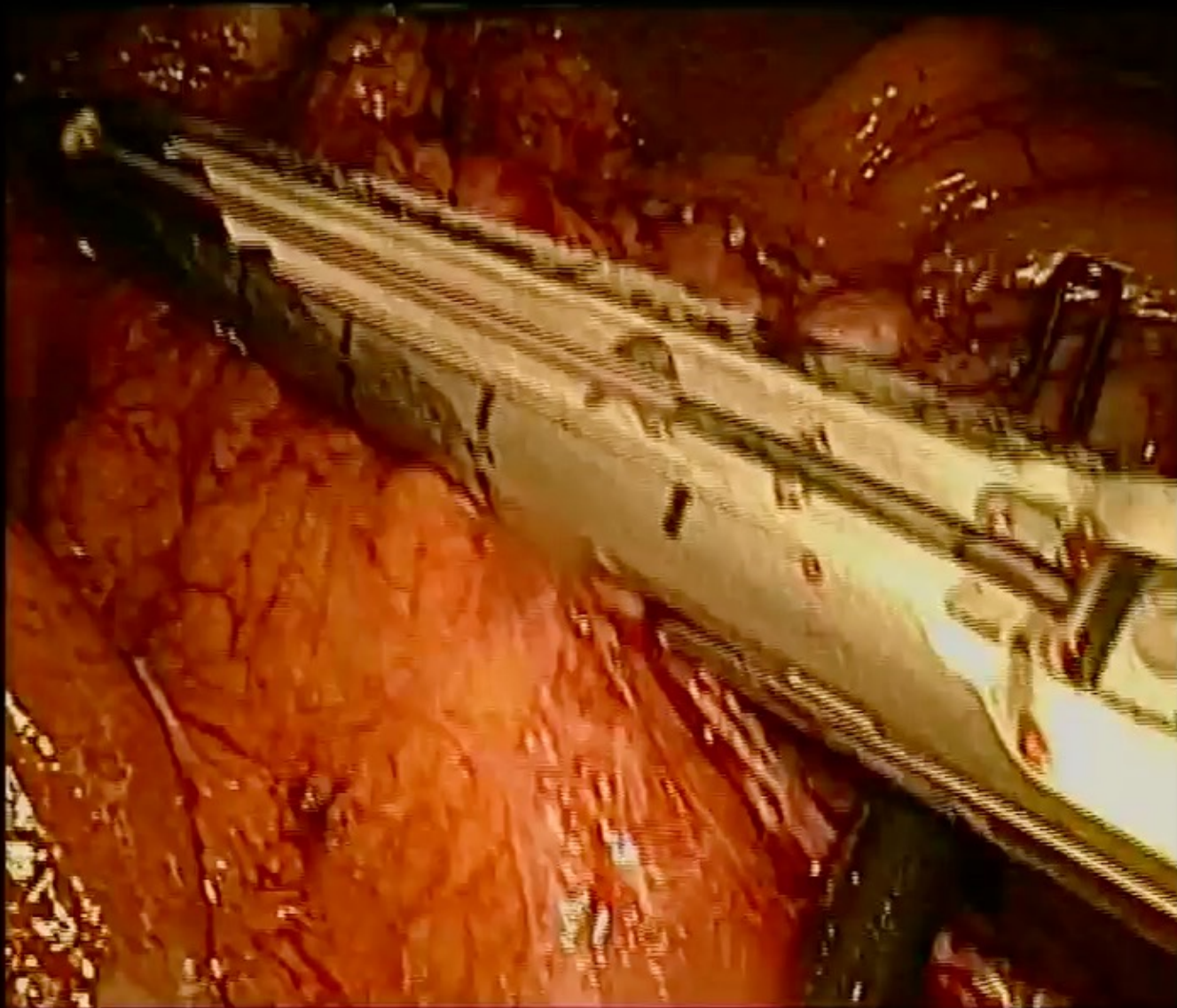
→ repair with suture of liver retractor (probe)

**No Clips for Bleeding
from the staple line**



Clips





Sleeve gastrectomy - Hemorrhage

Avoid bleeding:

1. Use appropriate Staple line height
2. Raise blood pressure at the end of the operation
3. Staple line reinforcement
4. Oversee Staple line
5. Tranexamic acid

N Engl J Med 2022; 386:1986-1997

Emergencies after Sleeve

Acute Leak: Relaparoscopy, Irrigation,
Drain, Stent, (T-Tube, Double pig tail)

Acute Bleeding: Relaparoscopy

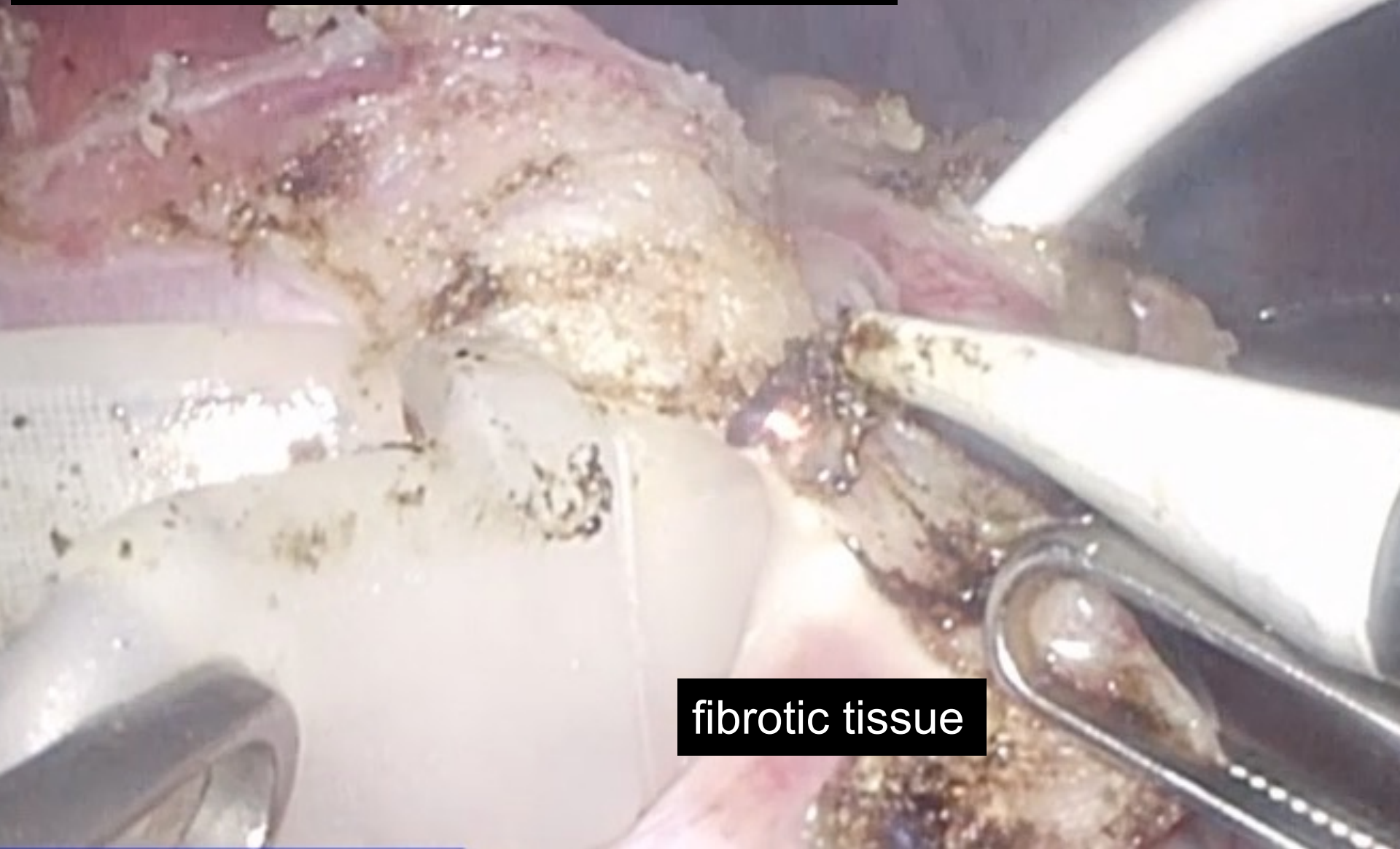
Acute Obstruction: Endoscopy

Complex situations:

**Center with experience in revisional
bariatric surgery!**

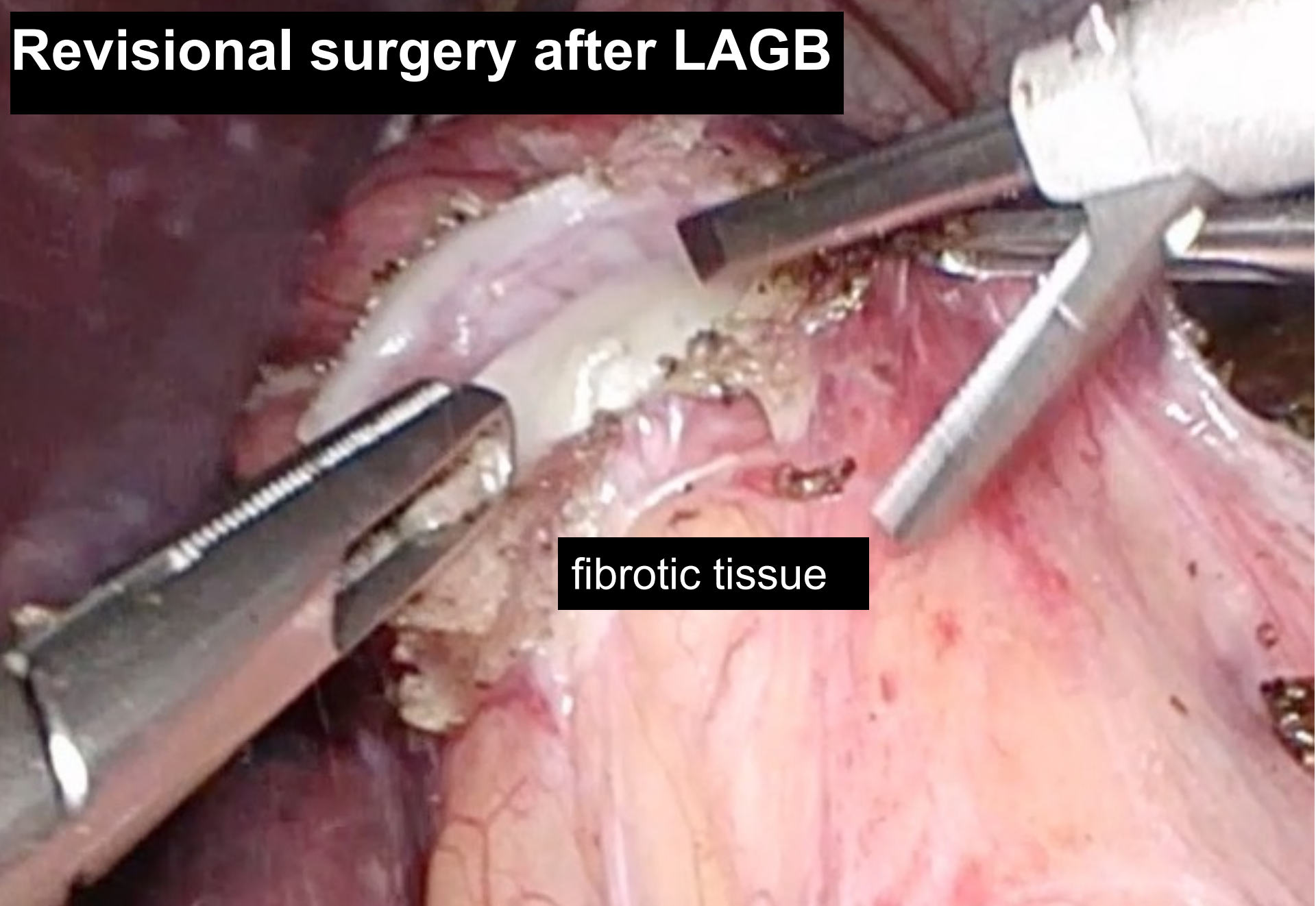


Revisional surgery after LAGB



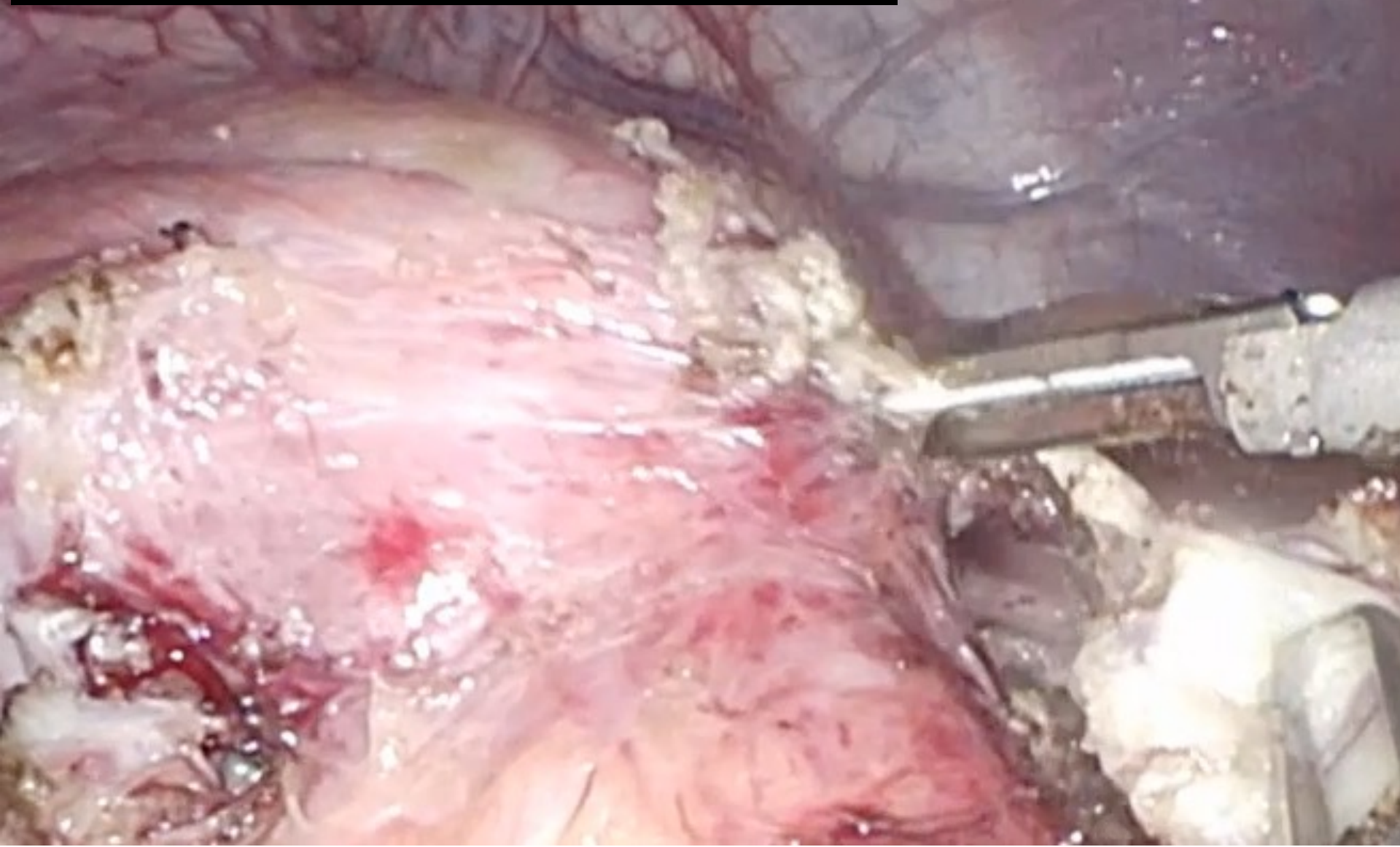
fibrotic tissue

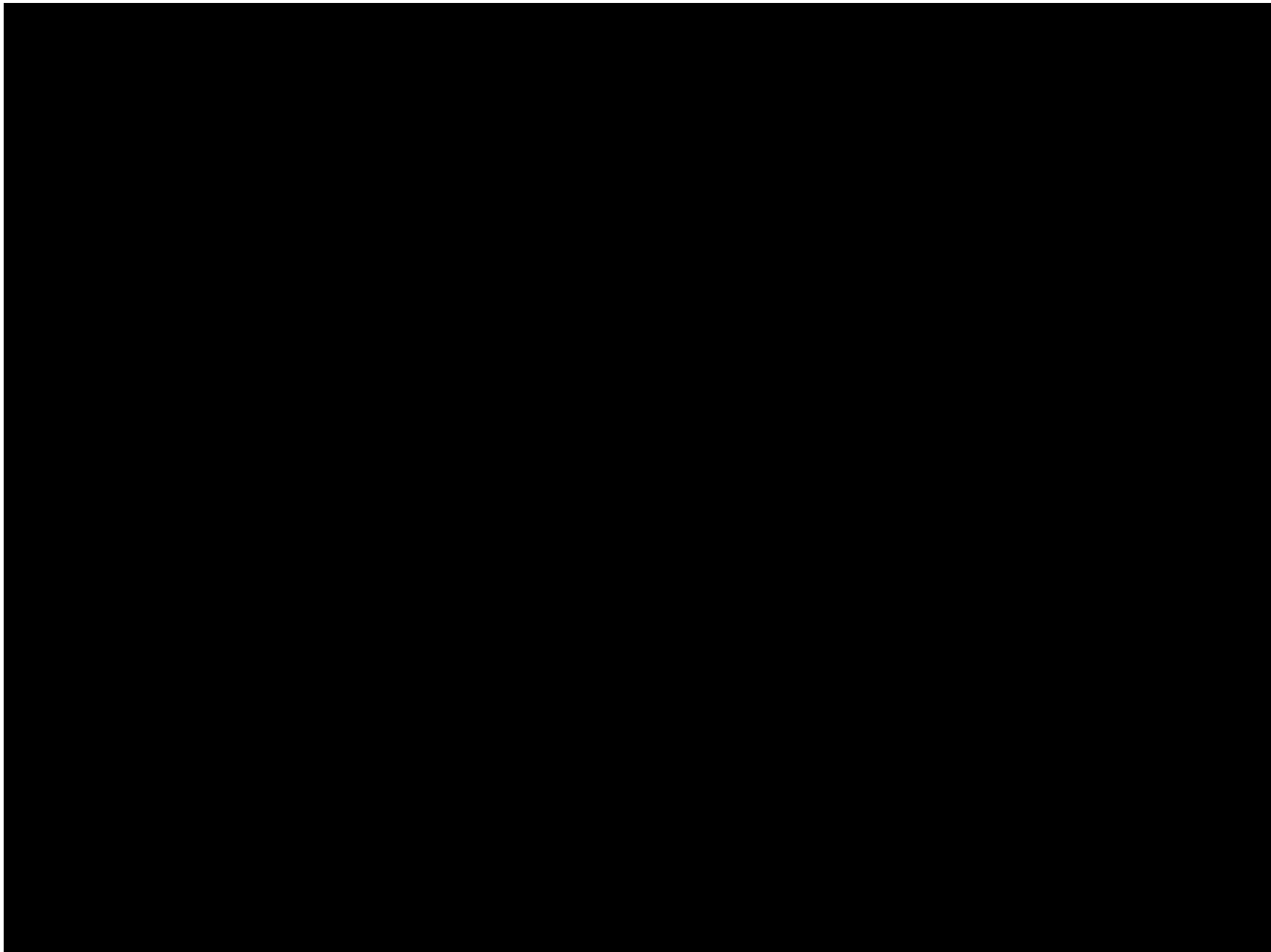
Revisional surgery after LAGB



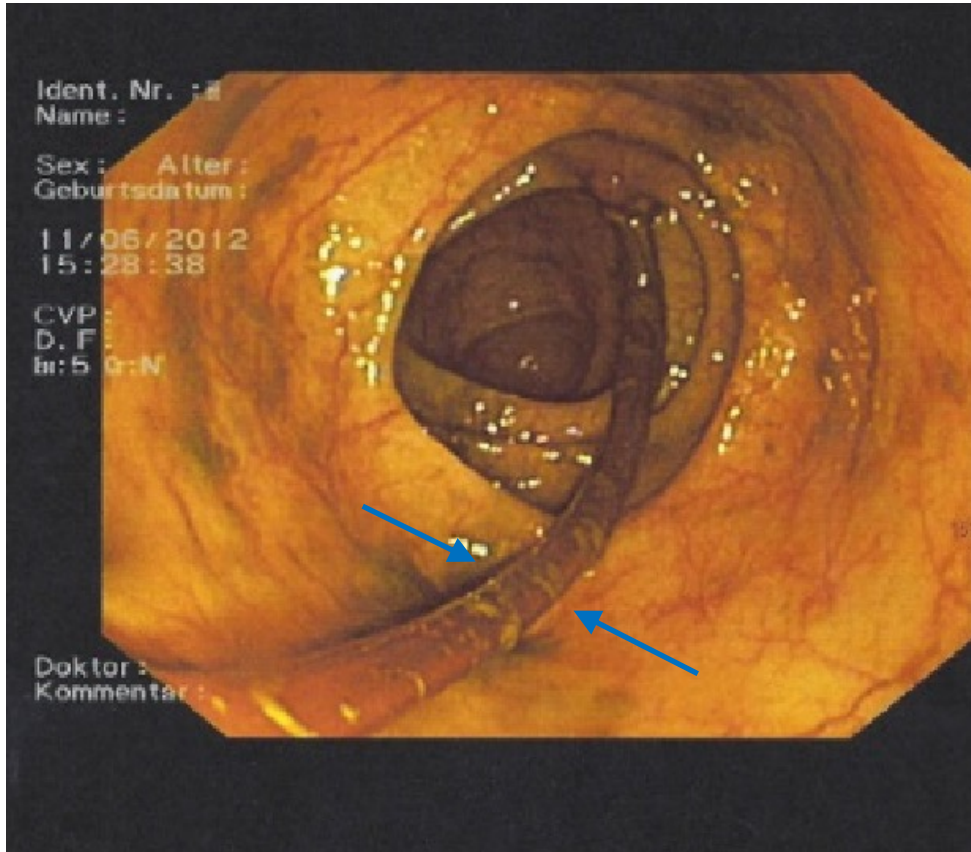
fibrotic tissue

Revisional surgery after LAGB





Complications after



Patient admitted to
Colonoscopy due to
hematochezia.

Oligosymptomatic

Next Step?

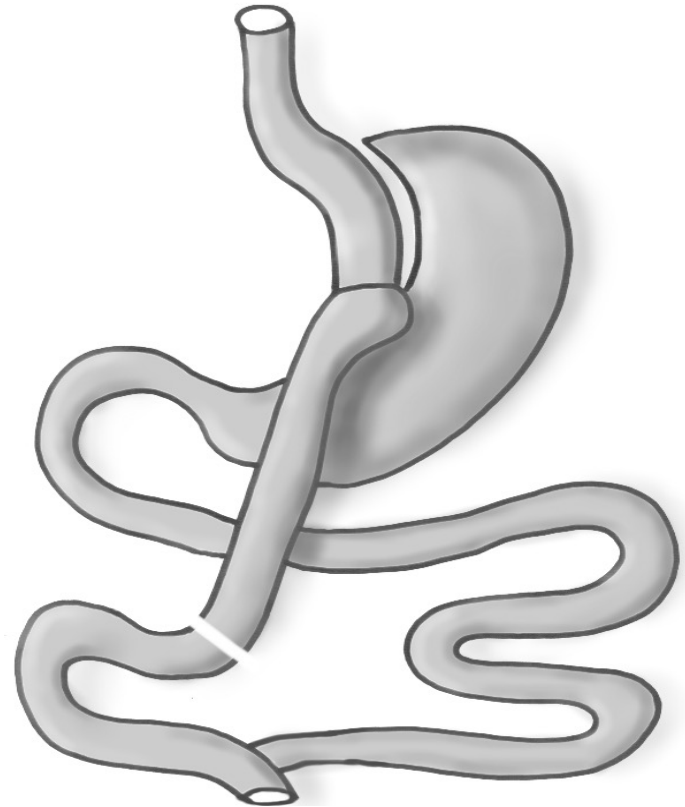
Questions/investigations

RYGB

Internal Hernia

Marginal Ulcers

Invagination



Closure of mesenteric defects in laparoscopic gastric bypass: a multicentre, randomised, parallel, open-label trial

Erik Stenberg, Eva Szabo, Göran Ågren, Johan Ottosson, Richard Marsk, Hans Lönroth, Lars Boman, Anders Magnuson, Anders Thorell, Ingmar Näslund

At 3 years after surgery, the cumulative incidence of reoperation because of small bowel obstruction

closure group 0.055
non-closure 0.102
(cumulative probability)

p=0.0002

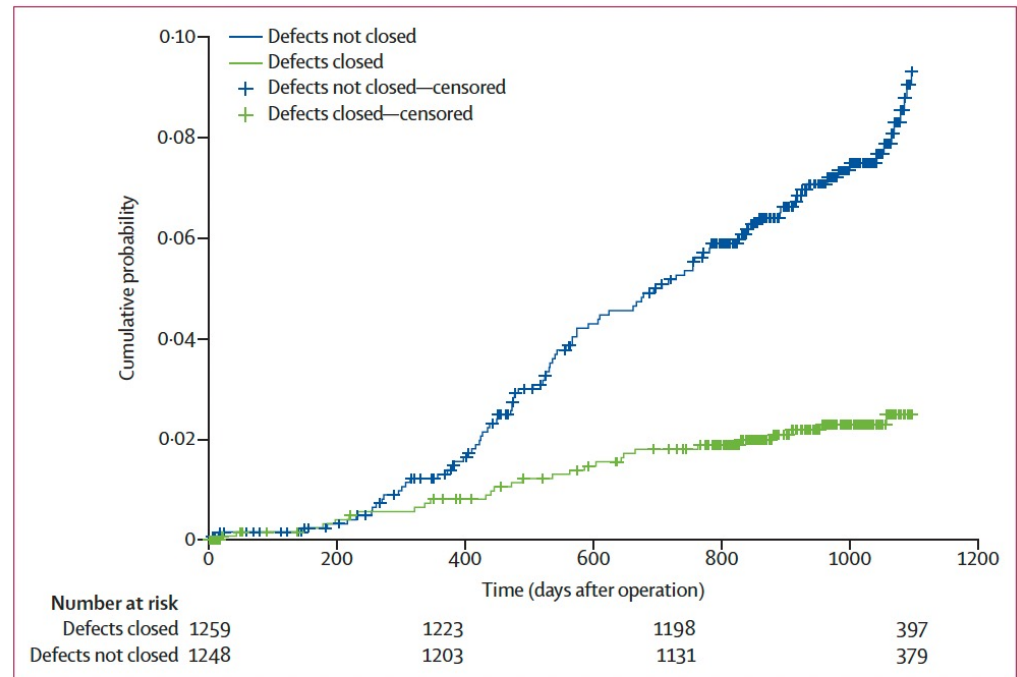


Figure 3: Cumulative probability of reoperation because of small bowel obstruction due to internal hernia

www.thelancet.com Vol 387 April 2, 2016

Epub 2023 May 10.

Mesenteric Defect Closure and the Rate of Internal Hernia in Laparoscopic Roux-en-Y Gastric Bypass: A Systematic Review and Meta-analysis

Duncan Muir¹, Byung Choi², Caterina Clements², Kumaran Ratnasingham², Shashi Irukulla²,
Samer Humadi²

14 studies - 20,553 patients undergoing RYGB

Internal hernia rate 2% closure

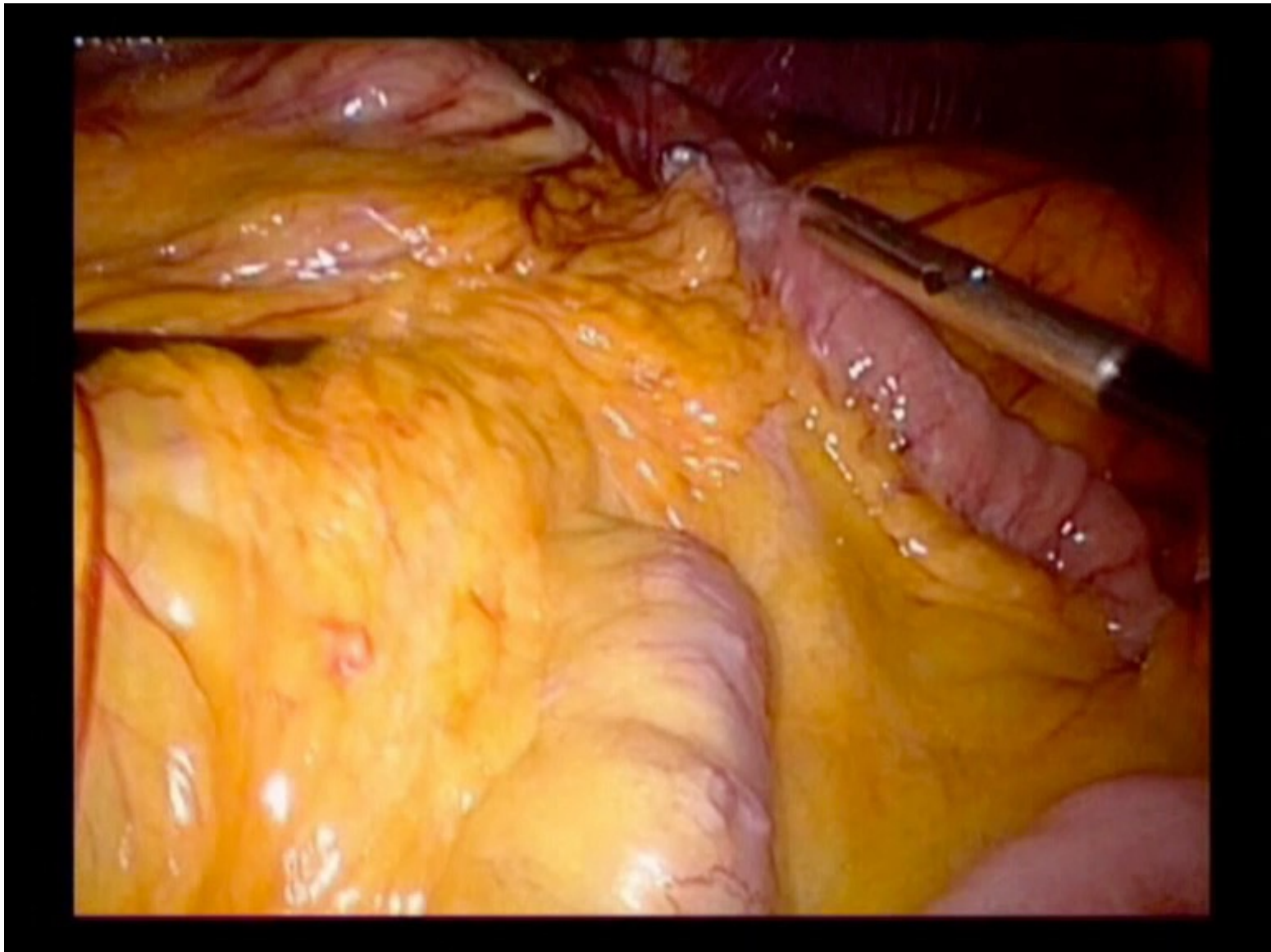
6% non-closure

re-operation for small bowel obstruction

2% closed

10% non-closure

Obes Surg 2023 Jul;33(7):2229-2236

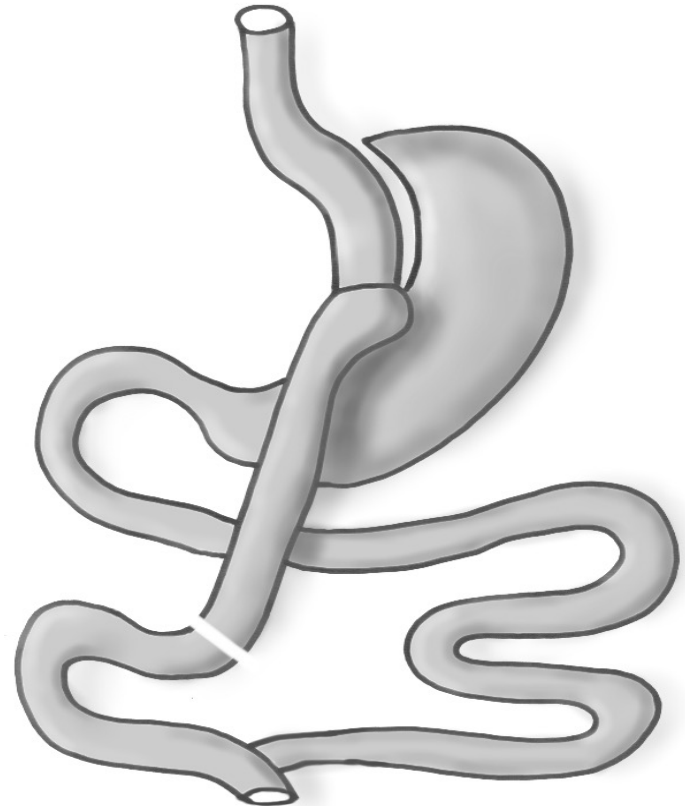


RYGB

Internal Hernia

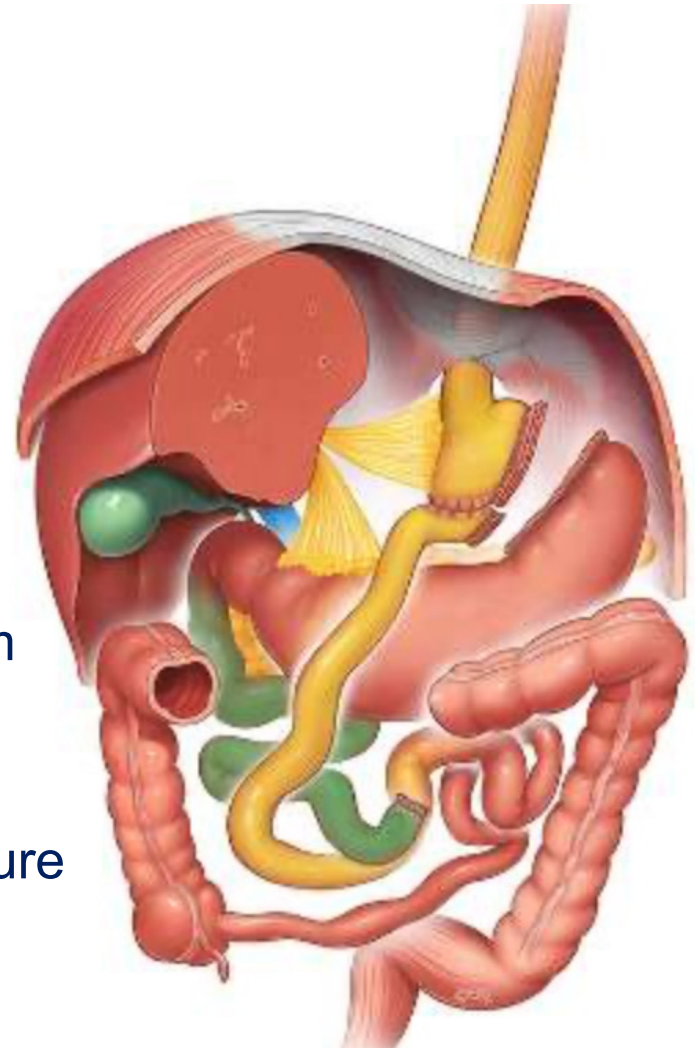
Marginal Ulcers

Invagination



Ulcers after RYGB – a big problem?

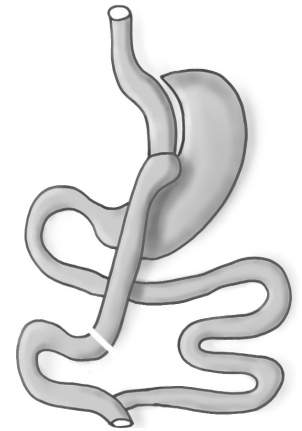
- **Ranging from 1% to 16% in literature**
- Most commonly at the site of the jejunum
- Underlying pathophysiology: acid exposure



One problem – several ways out



Conservative Therapy - what we do



Pharmacological therapy:

PPI Therapy: **doubled standard dose** for 2 weeks, then reduction to standard dose always combined with sucralfate (if positive H.p. eradication)

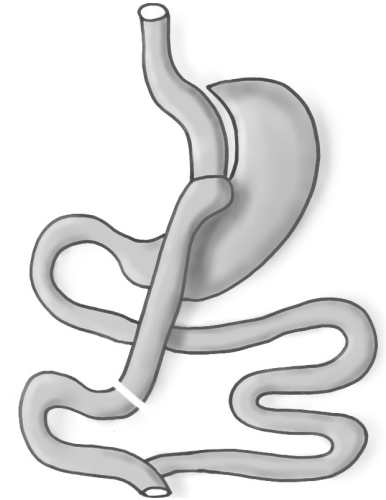
Therapeutic success checked after 4 weeks by EGD

Always combined with **lifestyle changes** (cessation of smoking, no alcohol, no coffee, no acidic fruits)

What is our approach?

When MU is suspected: **stepwise procedure**

- **Diagnostic EGD** in case of symptoms
- **Conservative therapy** (first step)

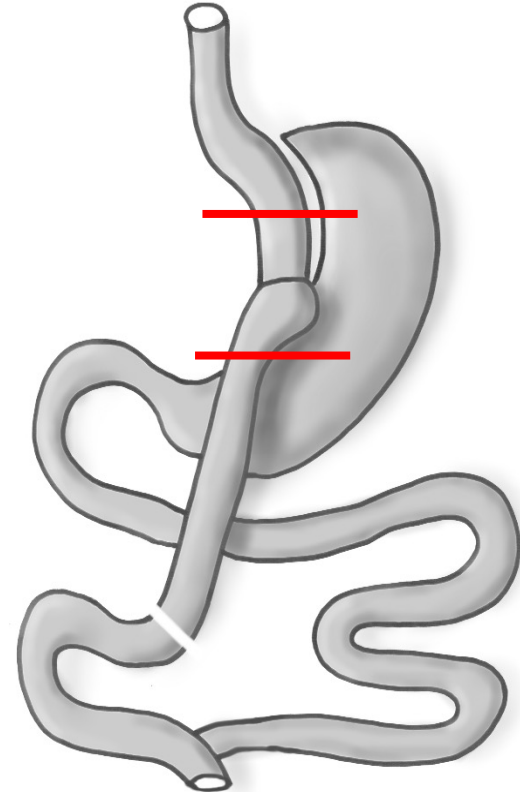


Persistence/Recurrence:

- **Redo of the GJ +/- truncal vagotomy**
- **Resection of the remnant stomach (Gastrin?!)**
- **Esophagojejunostomy**

Second step: Redo of the GJ

- Shortening of the pouch
- Reduction of acid exposure
- +/- truncal vagotomy



Chronic MU after RYGB: Resection of GJ

Summary Marginal Ulcers

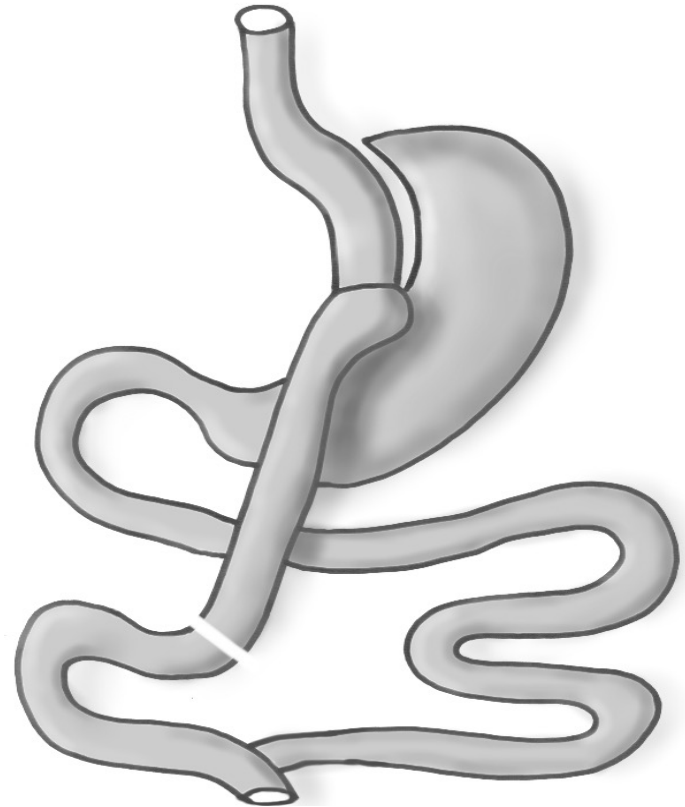
- Treating ulcer after RYGB is a **stepwise procedure**
- **Conservative therapy** should always be the **first step**
- **Revision of GJ is our surgical concept of choice as second step**
- Resection of remnant stomach/ esophagojejunostomy only in case of (re)recurrence as **salvage strategy**

RYGB

Internal Hernia

Marginal Ulcers

Invagination



Invagination:



Emergencies after Bariatric Surgery:

Be aware of big men

Be aware of old patients

Think of a plan B

Avoid revisional procedures

Humbleness



Learn from The Past...

An apple the day keeps the doctor away...

Sancho I died in 966 (31a) – by a poisoned apple by the rebel count Gonzalo Menéndez.



First Bariatric Procedure



Am Surg 2022 Jul;88(7):1526-1529.
Endocrinol Nutr. 2016;63:100–101.

12th

CONGRESS OF THE INTERNATIONAL FEDERATION
FOR THE SURGERY OF OBESITY AND METABOLIC DISORDERS
- EUROPEAN CHAPTER -

IFSO-EC2024



VIENNA

AUSTRIA

HILTON VIENNA PARK

2-4 MAY 2024



*See you
in
Vienna*

SAVE THE DATE

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