How can the surgeon help?

M. Lannoo

B. Navez

Reimbursed indications

- > 18 year
- BMI > 40
- BMI >35 in combination with:
  - OSAS
  - Hypertension with 3 anti-hypertensive drugs
  - Diabetes type II
- Multidisciplinary intake internal medicine and psychology.
- At least 1 year of unsuccesful conservative weight loss therapy

Preoperative intake

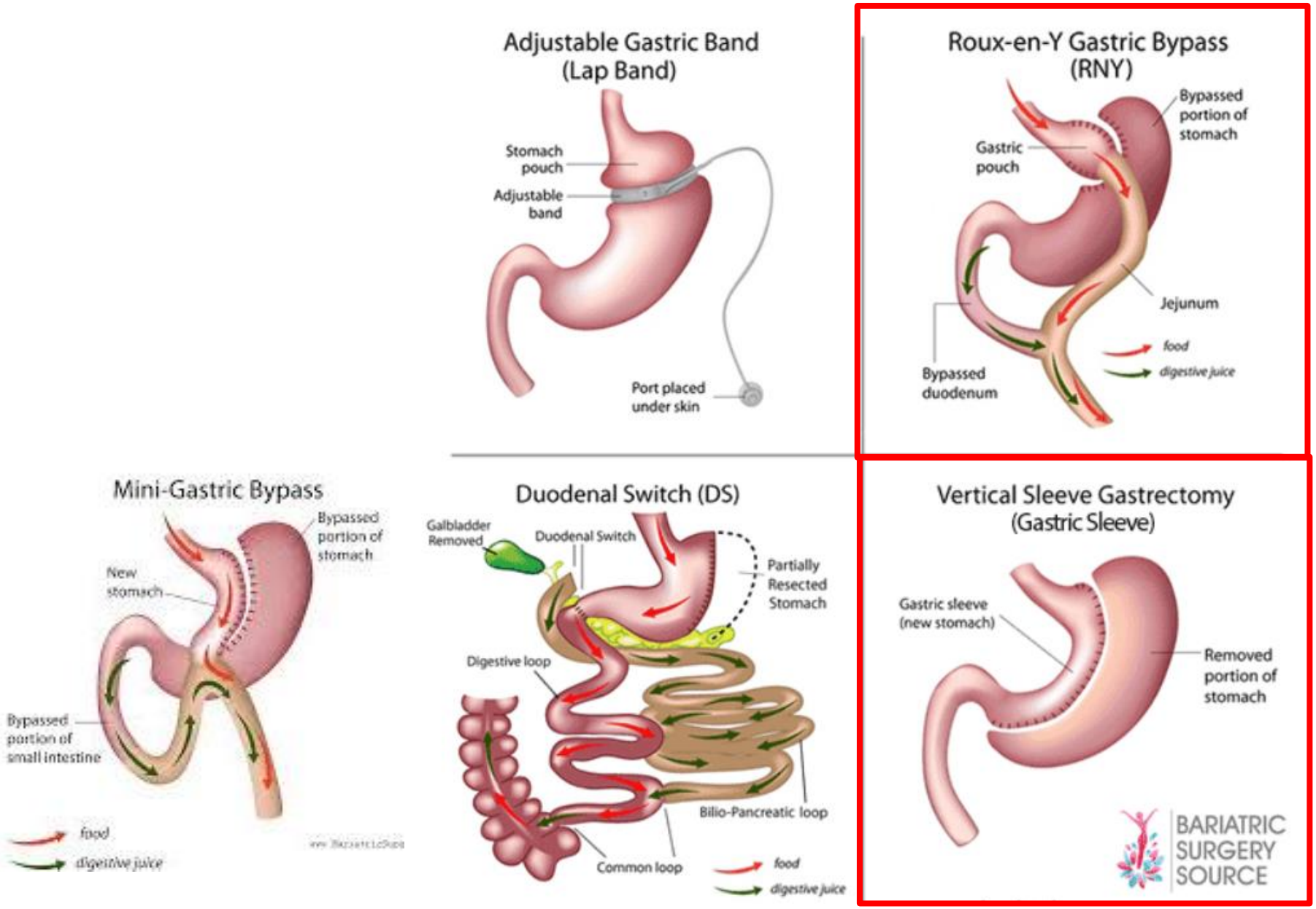
- Multidisciplinaire evaluatie
  - GP!
  - Dietician
  - Psychologist
  - Endocrinologist
  - Surgeon

- Preoperative tests
  - Gastroscopy + HP screening
  - Echo abdomen
  - Lab ananlysis: preoperative deficiencies in 57% of patients.

‘ Healthcare professionals should be aware that the morbidly obese patient is by definition not a well-nourished patient.’

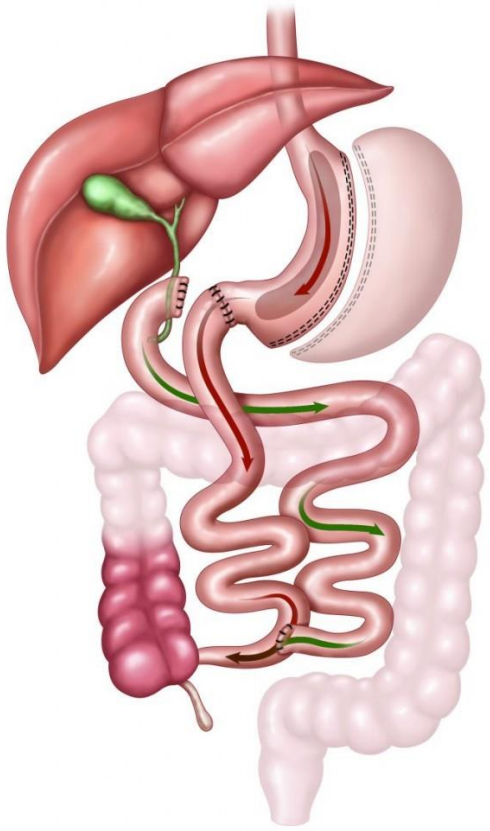
Liz Goldberg and Alfons Pomp. The ASMBS textbook of bariatric surgery. Volume 1. New York: Springer-Verlag; 2015. 257 p.
Gehrer S, Kern B, Peters T et al. Fewer nutrient deficiencies after LSG tah after LRYGB – a prospective study. Obes Surg (2010) 20: 447 – 453,

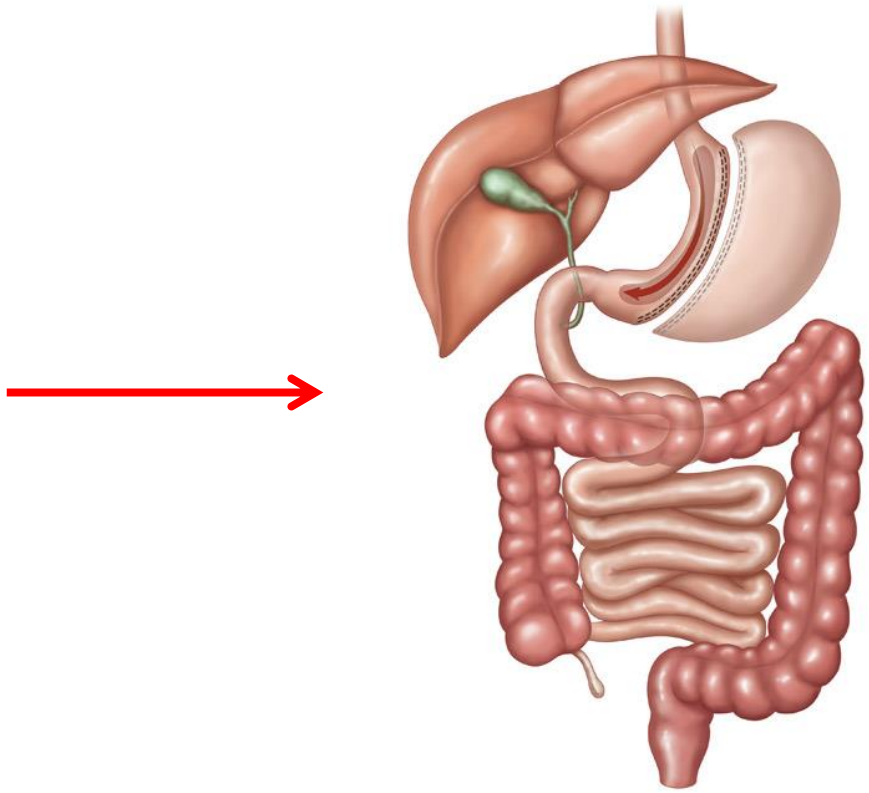
Surgical procedures



Sleeve gastrectomie (SG)

- First step in two step BilioPancreatic Diversion + Duodenal Switch.

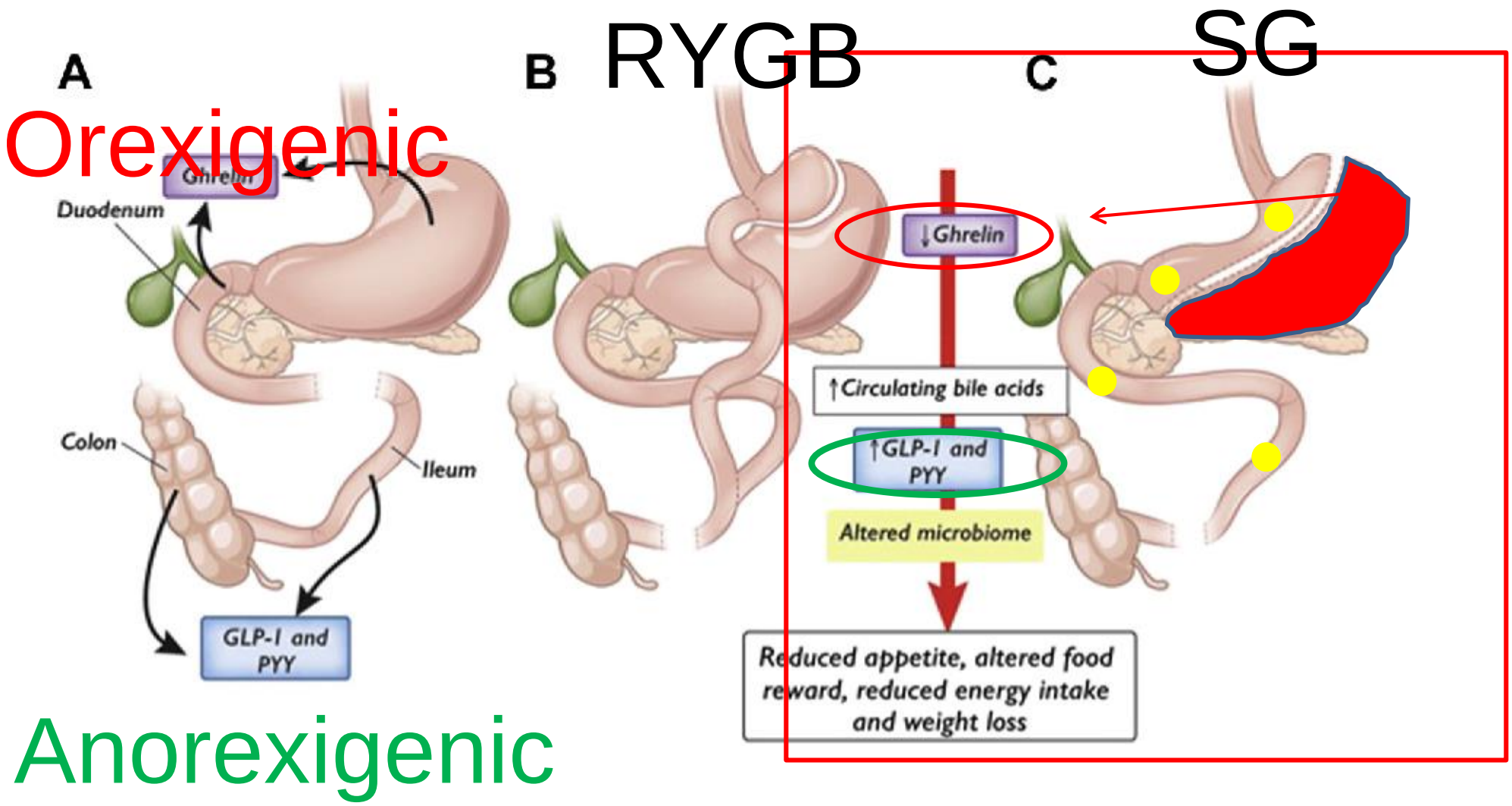




BPD-DS

Sleeve gastrectomy

SG: mechanisms of action



Why SG?

- Lowest morbidity/mortality ?
- Technical easyness
- No small bowel involvement (internal herniatie, SBO…)
- Less dumping and hypoglycemia on long term
- Minder postoperatieve micronutriëntdeficiënties

SG nutritional deficencies

Fewer Nutrient Deficiencies After Laparoscopic Sleeve Gastrectomy (LSG) than After Laparoscopic Roux-Y-Gastric Bypass (LRYGB)—a Prospective Study

Simone Gehrer · Beatrice Kern · Thomas Peters · Caroline Christoffel-Courtin · Ralph Peterli

Table 4 Preoperative and postoperative deficiencies

	Prevalence preop. in percent	LSG (group 1) incidence postop. in percent (n=50)	LRYGB (group 2) incidence postop. in percent (n=86)	P value
Vitamin B_1	0	0	0	
Vitamin B_6	0	0	0	
Vitamin B_{12}	3	18	58	<0.0001
Calcium	0	0	0	
Vitamin D	23	32	52	0.02
Secondary hyperparathyroidism	8	14	33	0.02
Folate	3	22	12	(0.11)
Iron	3	18	28	n.s
Zinc	14	34	37	n.s
Protein (mild)	6	4	8	n.s

2 jaar follow-up

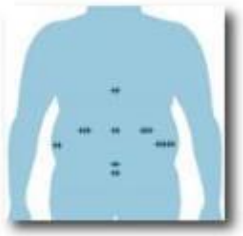
SG results

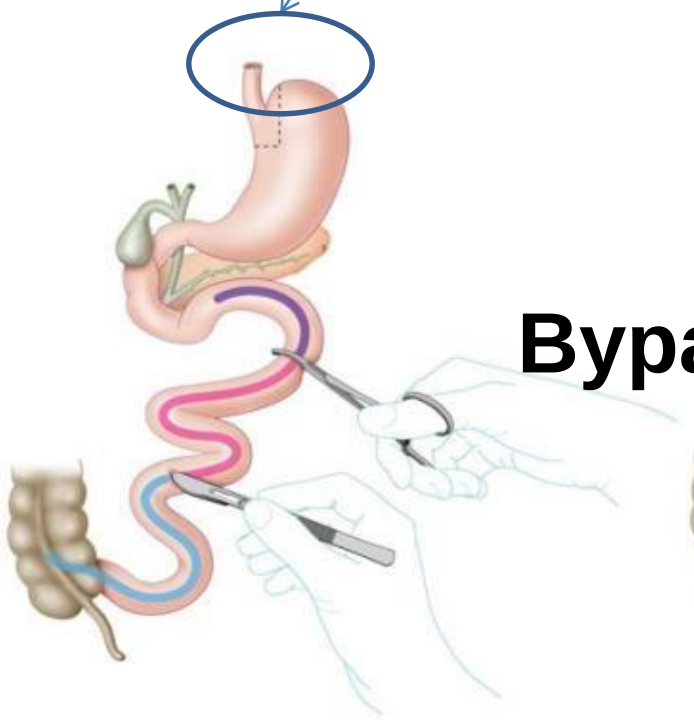
- Resultaten:
  - **Excess Weight Loss** op 5 jaar: 52.3% - 63%
  - **DM type II**: resolutie op 5 jaar: 66%
  - **aHT**: resolutie op 5 jaar: 50%

Nguyen NT, Blackstone RP, Morton JM, Ponce J, Rosenthal RJ. The ASMBS textbook of bariatric surgery. Volume 1. New York: Springer-Verlag; 2015. 208 p.

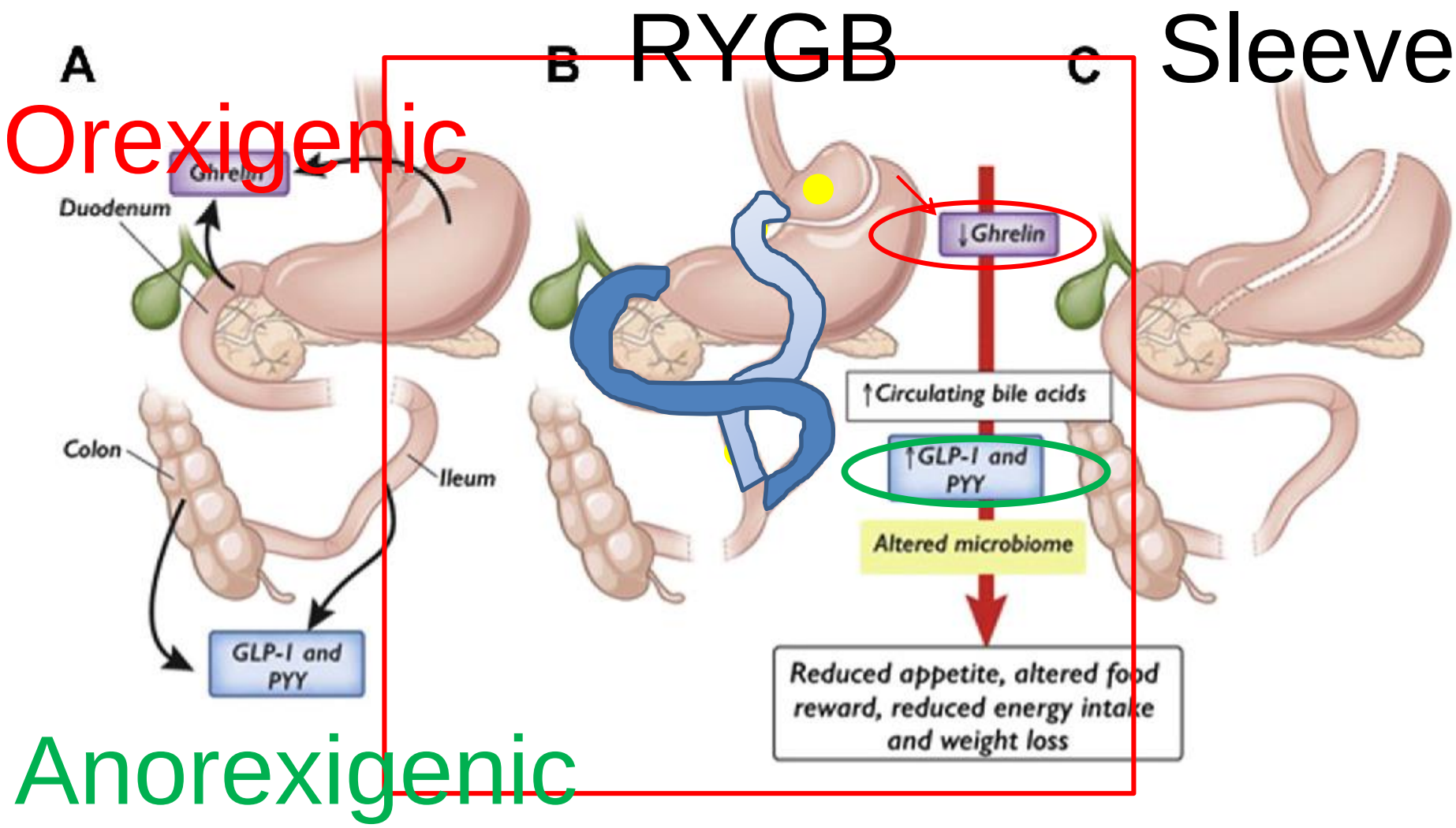
Roux-en-Y Gastric bypass (RYGB)

1994: First laparoscopic RYGB





RYGB: mechanisms of action



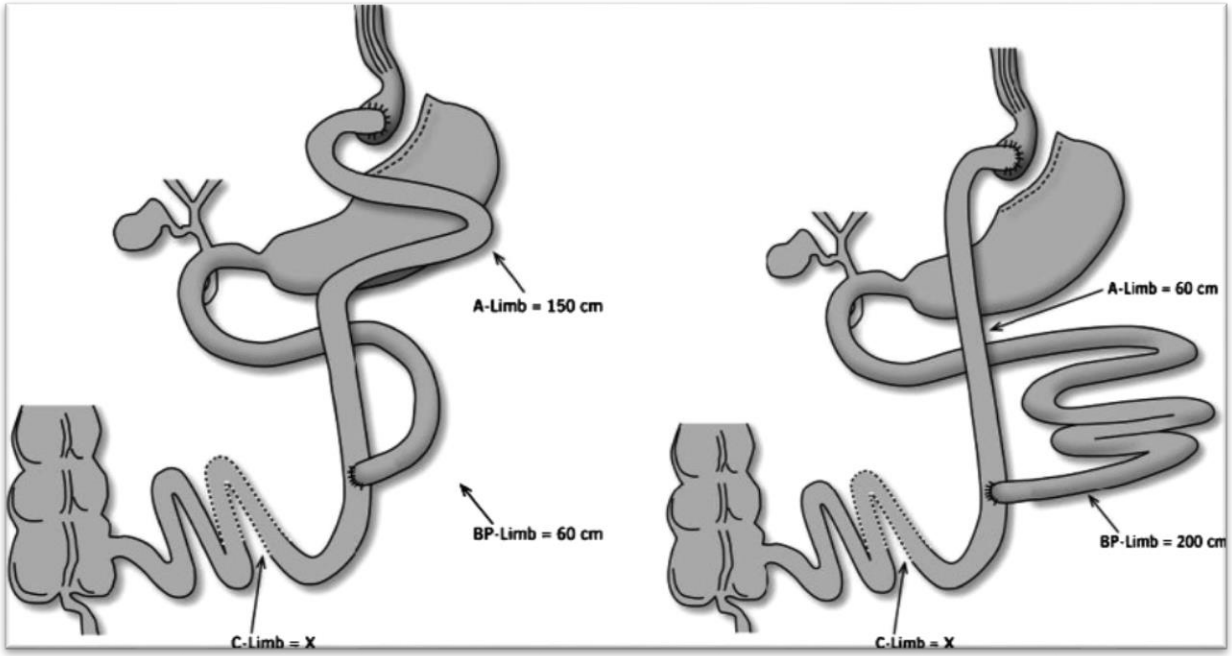
RYGB results

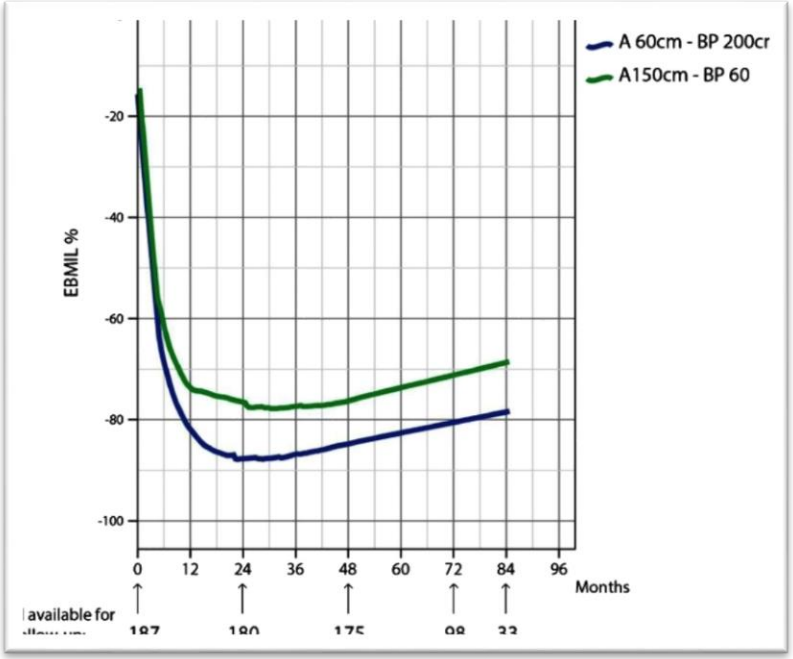
- **Excess Weight Loss: 52 – 63 %**
- **DM type II: 2 jaar FU: 80 % resolutie**
  - **Himpens et al.: 27.9% new onset DM type II na 9 jaar FU.**
- **aHT: 75 % resolutie**
- **Dyslipidemie: 94 % resolutie**
- **OSAS: 87% resolutie**

Buchwald H, Estok R, Fahrbach K, et al. Weight and type 2 diabetes after bariatric surgery: systematic review and metaanalysis. Am J Med. 2009;122:248–56. e245.

RYGB variations

- More WL? No DOUBT!





MALABSORPTION!

	All	long BP limb	long A limb	P value
Vitamin D	57 (30.5 %)	39 (44.8 %)	18 (20.9 %)	<0.001
PTH	1 (0.5 %)	15 (17.2 %)	3 (3.5 %)	0.003
Iron	2 (6.4 %)	32 (36.8 %)	13 (15.1 %)	<0.001
Ferritin	11 (5.9 %)	58 (66.7 %)	45 (52.3 %)	0.055
Haemoglobin	2 (1.1 %)	53 (60.9 %)	37 (43.0 %)	0.019
diarrhea (GSRS)		2,66	1.19	0.007

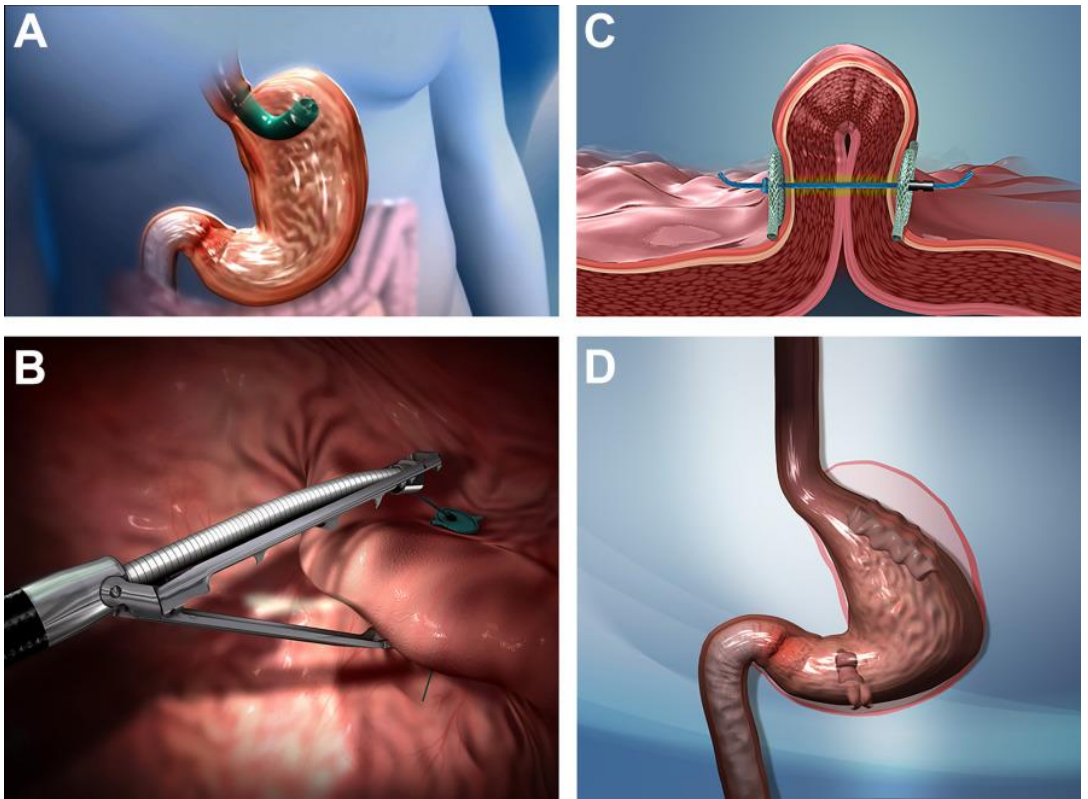
Trophic effect on L- cells

Nergaard et al. Obes Surg. 2014; 24:1595-1602
Nergaard et al. SOARD 2015; 11:1237-1247

Endoscopic plication

- BMI 30-40 kg/m^2
- RCT Sullivan et al.
- TWL 1y is only 4,9% vs 1,4% sham
- Secondary endpoint:

  > 50% pat > 5% TWL not reached
- 5% complication rate



Surgical Complications after Bariatric Surgery

Pr B. Navez

Service de Chirurgie et
Transplantation Abdominale

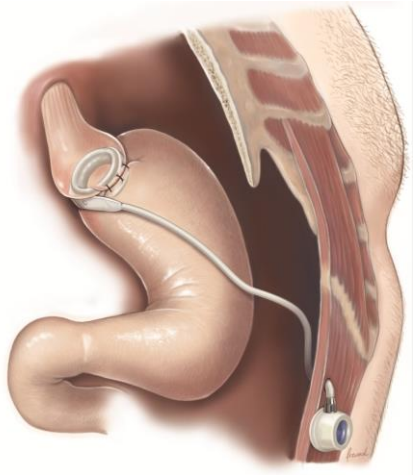
Cliniques Universitaires St Luc
Bruxelles

Cliniques universitaires SAINT-LUC UCL BRUXELLES

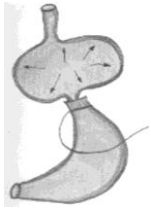
UCL Université catholique de Louvain

	Operative Mortality %	Early Complications %	Late Complications %	Excess Weight Loss %
BANDING	0.1	4 > 30 % reintervention	20	55
SLEEVE	0.2	6 Fistula : 2.3 %	GERD : 8-20 % Stenosis	65
BYPASS	0.4	9 Fistule 1.9 %	15 Obstruction Stenosis/Ulcer Dumping	75

Gastric Banding complications

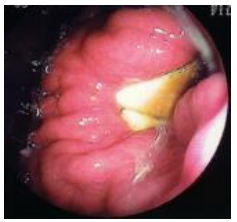


- Food impaction : food intolerance, Vô

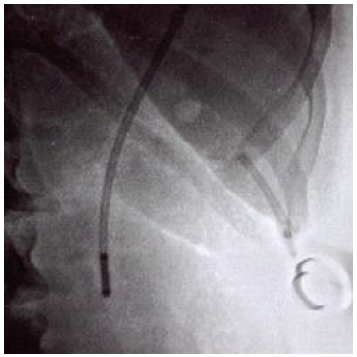


- Pouch dilatation (14%)

- Esophageal dysmotility



- Intra-gastric migration (5-10%)



- Infected port'a cath, catheter break …
- Small bowel on-bstruction (rare)

The General Practitioner facing early complications of bariatric surgery

- Return to home on p.o. day 2-4
- Possible symptoms :
  - Pain : intra-abdo >< abdo wall (trocars) ?
  - Fever : intra-abdo sepsis >< lung, urine, wound infection ?
  - Vomiting : abdo complic. >< no respect of dietary counseling ?
  - Dyspnea : abdo complic. >< cardio-respiratory problem ?
  - Ileus : mechanical obstruction >< paralytic ileus ?
  - Anemia, hematemesis, rectorrhagia

NAUSEA - VOMITING

What to think ?

Too much food ingestion

Swallowing too fast

Insufficient chewing

Drinking during meals

Too spicy/fatty dishes

Stenosis of sleeve / G-J anastomosis

Postop intra-abdo septic complications

Early clinical signs

- TACHYCARDIA (> 110/')
- DYSPNEA

constant

- Others :
  - Pain/abdominal discomfort
  - ileus
  - Fever
  - Hiccup
  - Guarding, peritonism : difficult to highlight

Postop intra-abdo septic complications

Tachycardia : > 110/'

Exclude :

- **Hémorrhage**
- **Dehydration**
- **Pulmonary Embolism**

Dyspnea

Exclude :

- **Pulmonary Embolism**
- **Pneumonia**

BLOOD TESTS + **CT Scan** (injection & ingestion)

CRP ↑↑

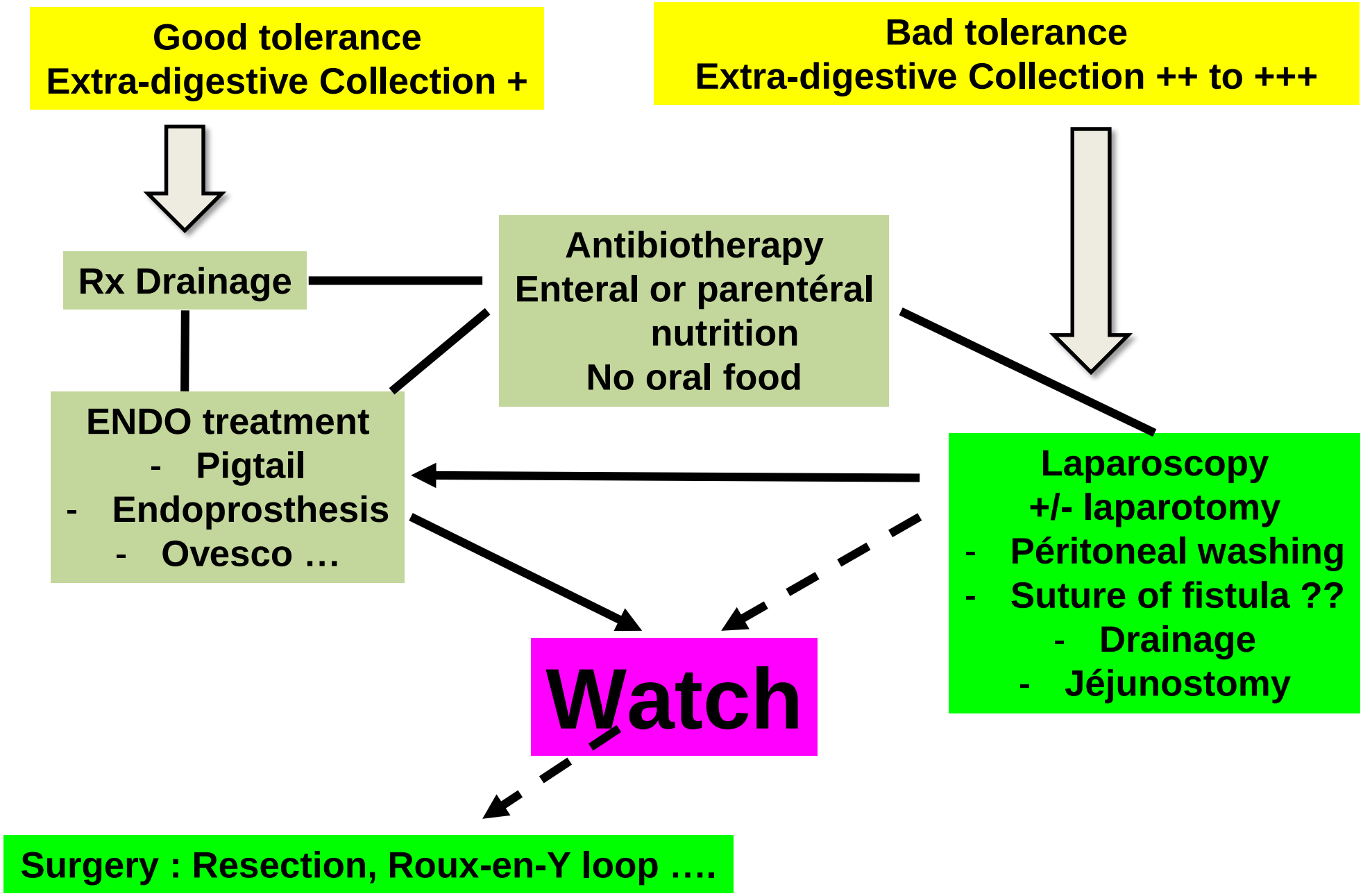
WBC ↑

Abdo Collection

Peritonitis

SUSPECTED FISTULA

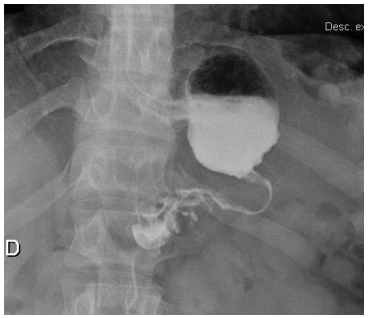
Fistula Management



Post-Sleeve Complications

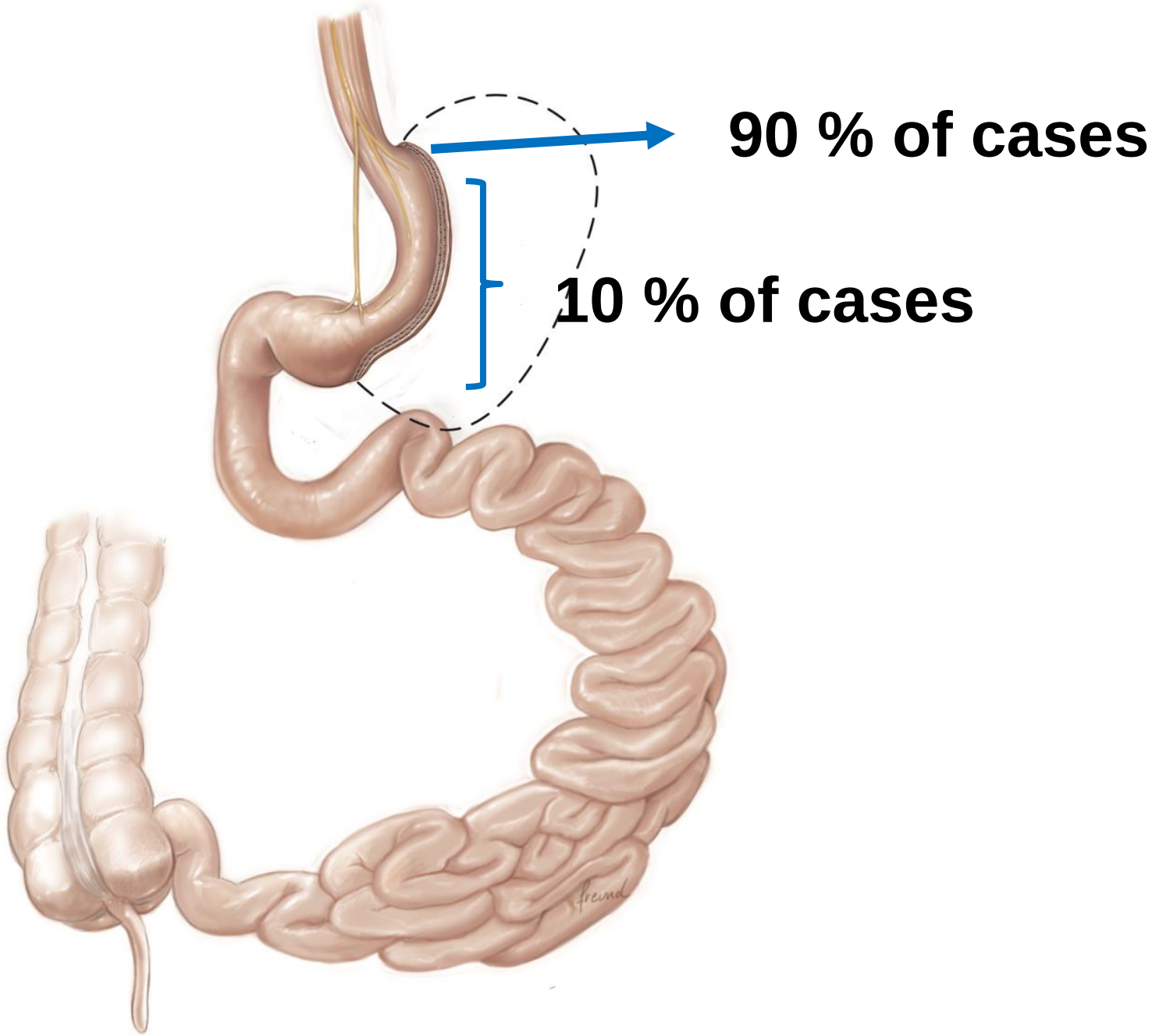
- **Operative Mortality : 0.2 %**

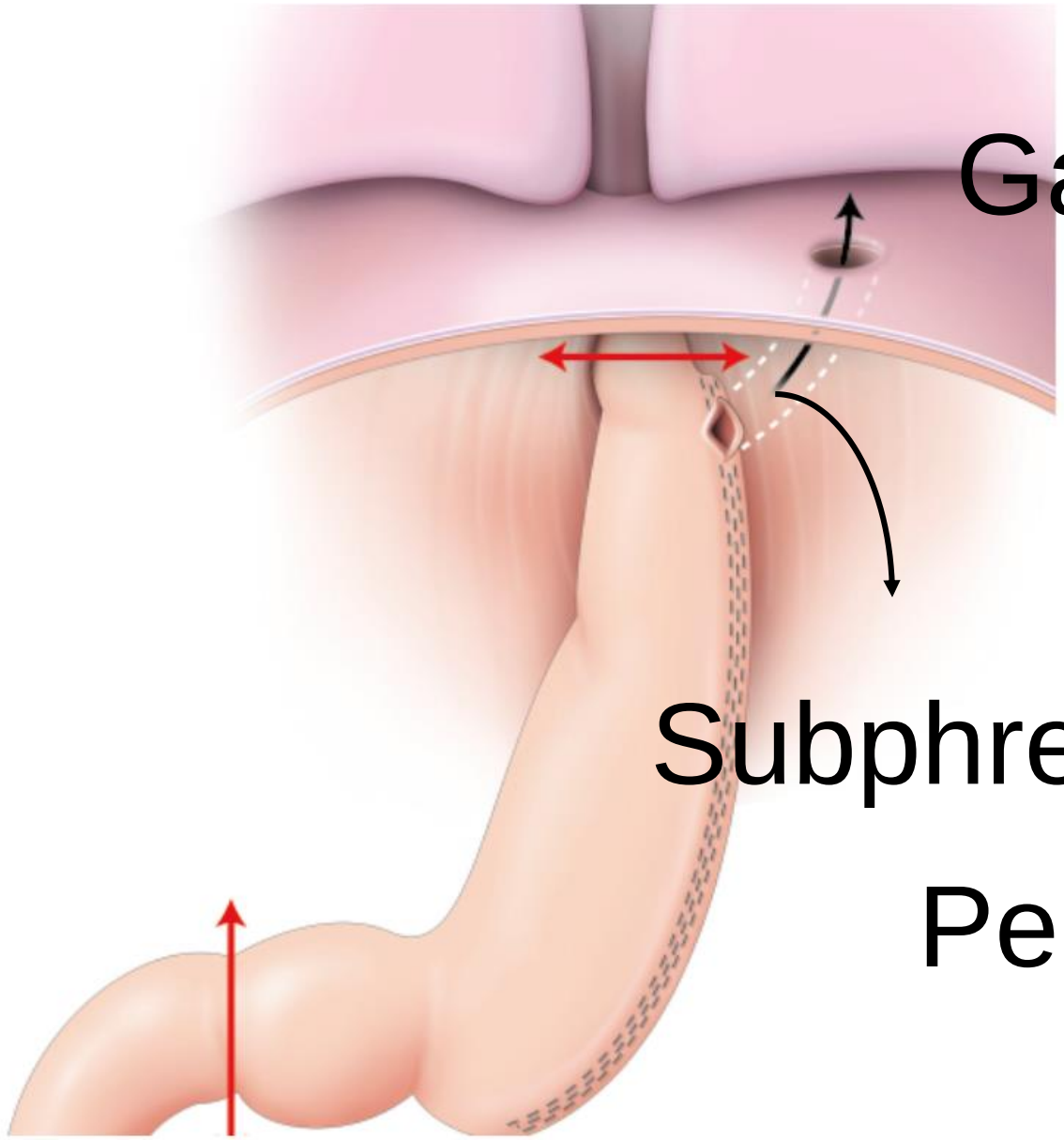
- **Early Complications : 6 %**
  - Hemorrhage/hematoma : **2 %**
  - Fistula from staple line : 2.3 %
  - Stenosis : **0.1 – 3.9 %**
  - Portal Thrombosis : 0.3 %
  - General Complic : 1-2 %



- **Late Complications** :
  - **Gastro-esophageal Reflux** (Barett = CI SL) : 8-20 %

Post SLEEVE Fistula



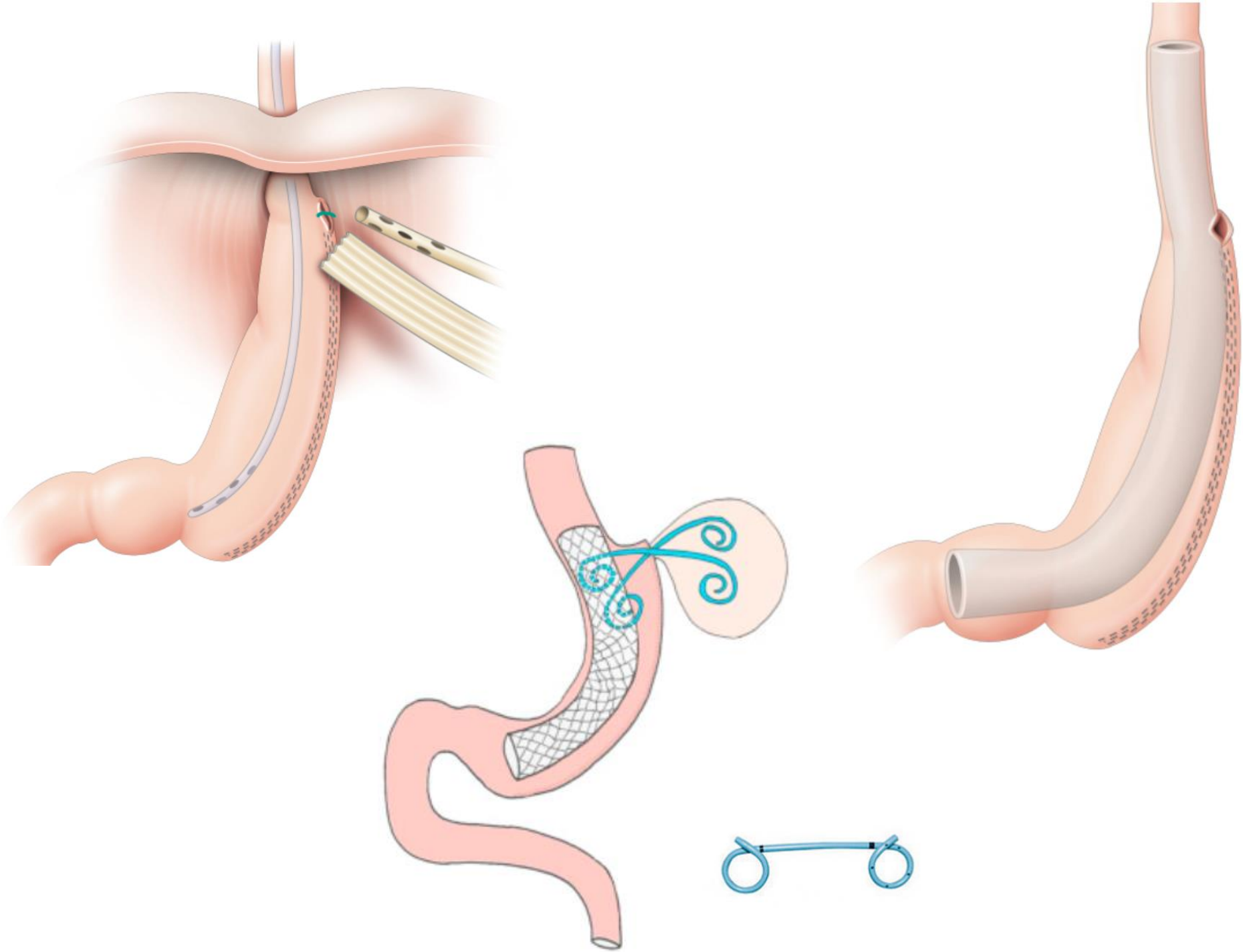


Gastro-pleural Fistula

Extremely serious !!!

Subphrenic abscess

Peritonitis

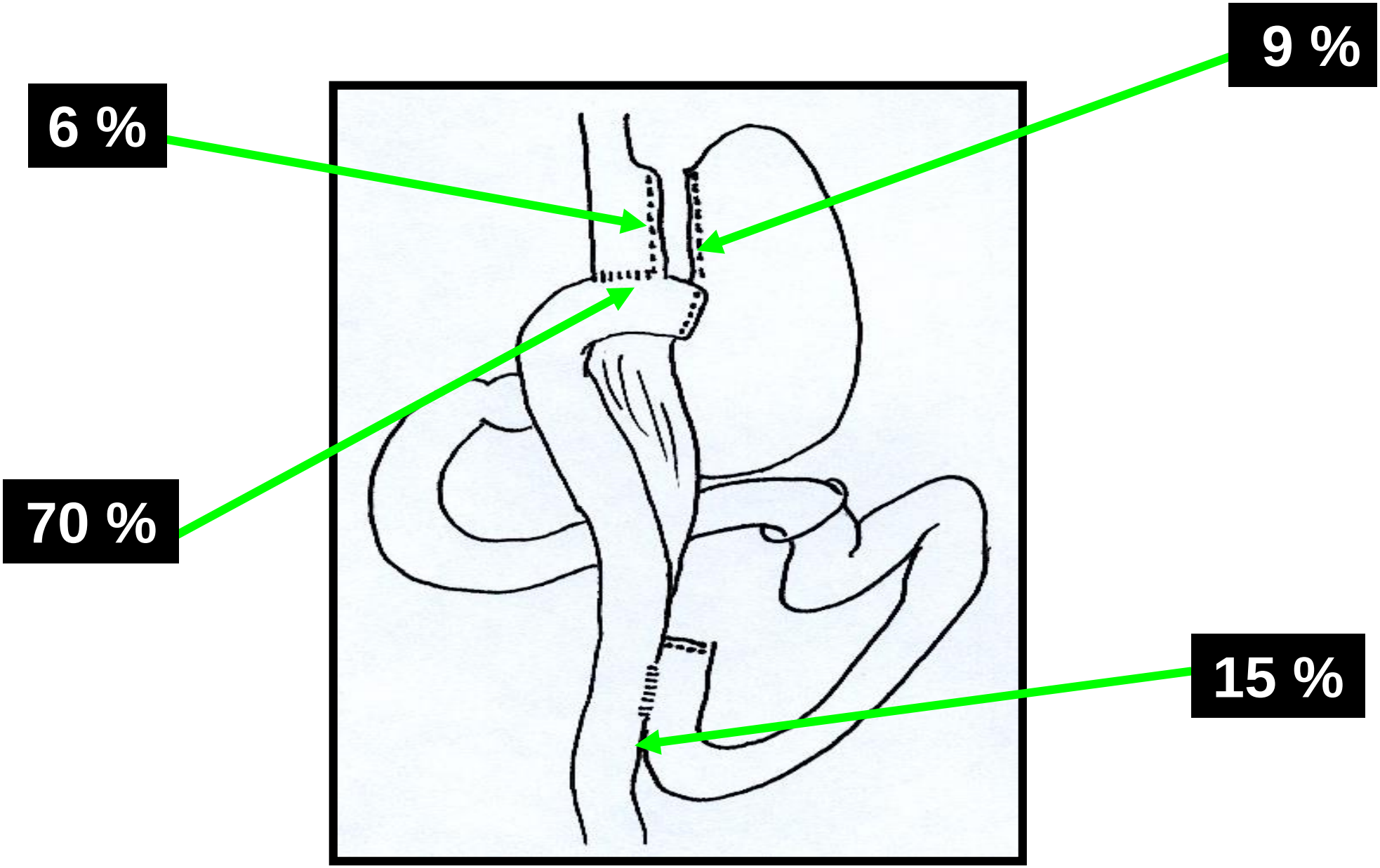


POST-BYPASS COMPLICATIONS

EARLY : 9 %		LATE : 10 %	
Anastomotic leakage	1.9 %	Obstruction	1 – 10 %
Hemorrhage	3 %	Reoperation	4.4 %
Stenosis/anast. ulcer	3.4 %	Late Dumping (hypoglycemia)	
Wound infection	0.2 %		
DVT/Pulm embolism	< 1 %	Nutritional deficiencies	

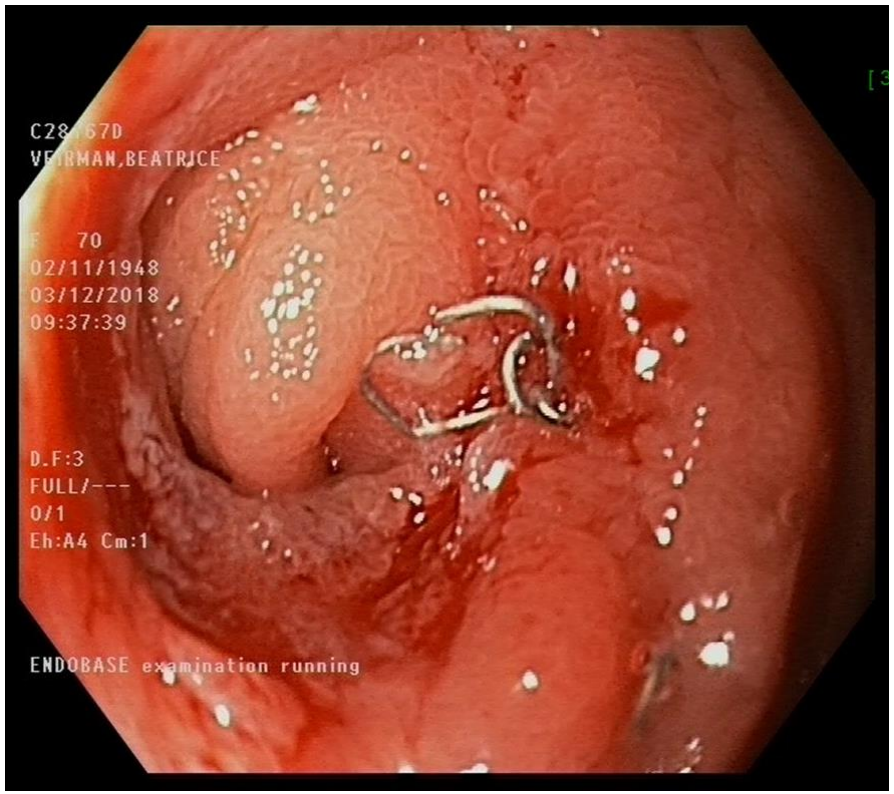
ERATIVE MORTALITY : 0.4 %

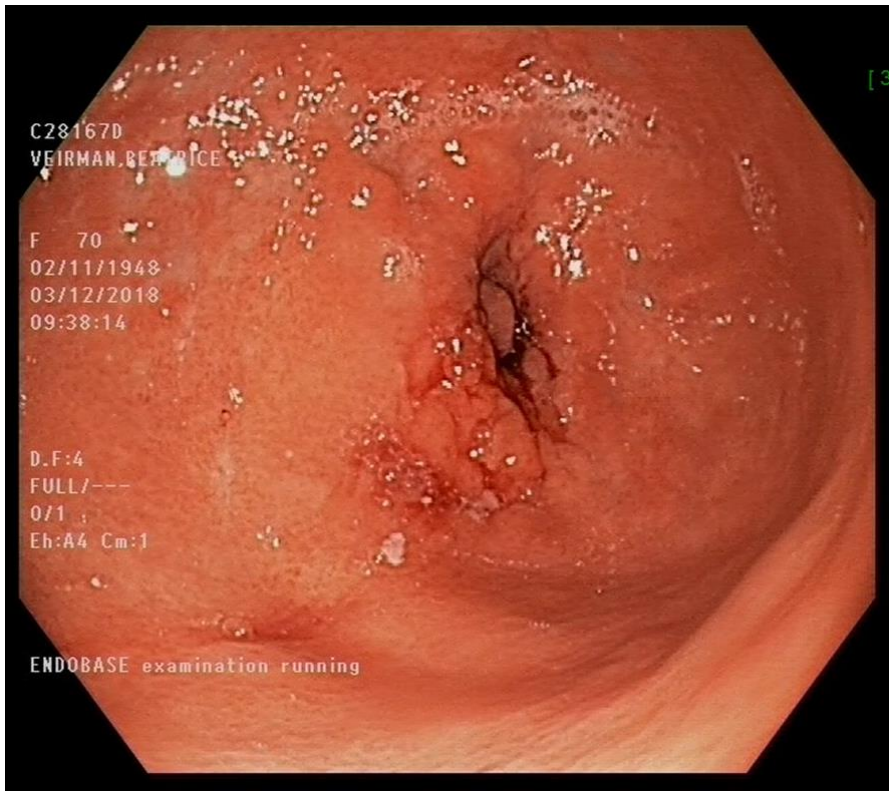
BYPASS : leakages



G-J STENOSIS : → Barium swallow, Gastroscopia

- Epigastric pain, vomiting
- Early : often linked to anastomotic oedema , could be reversible
- Late : ischemic, ulcer, fibrosis





Post-BP Internal hernia

stly after weight loss +++

- Inter-mesenteric (1)
- Petersen space (2)

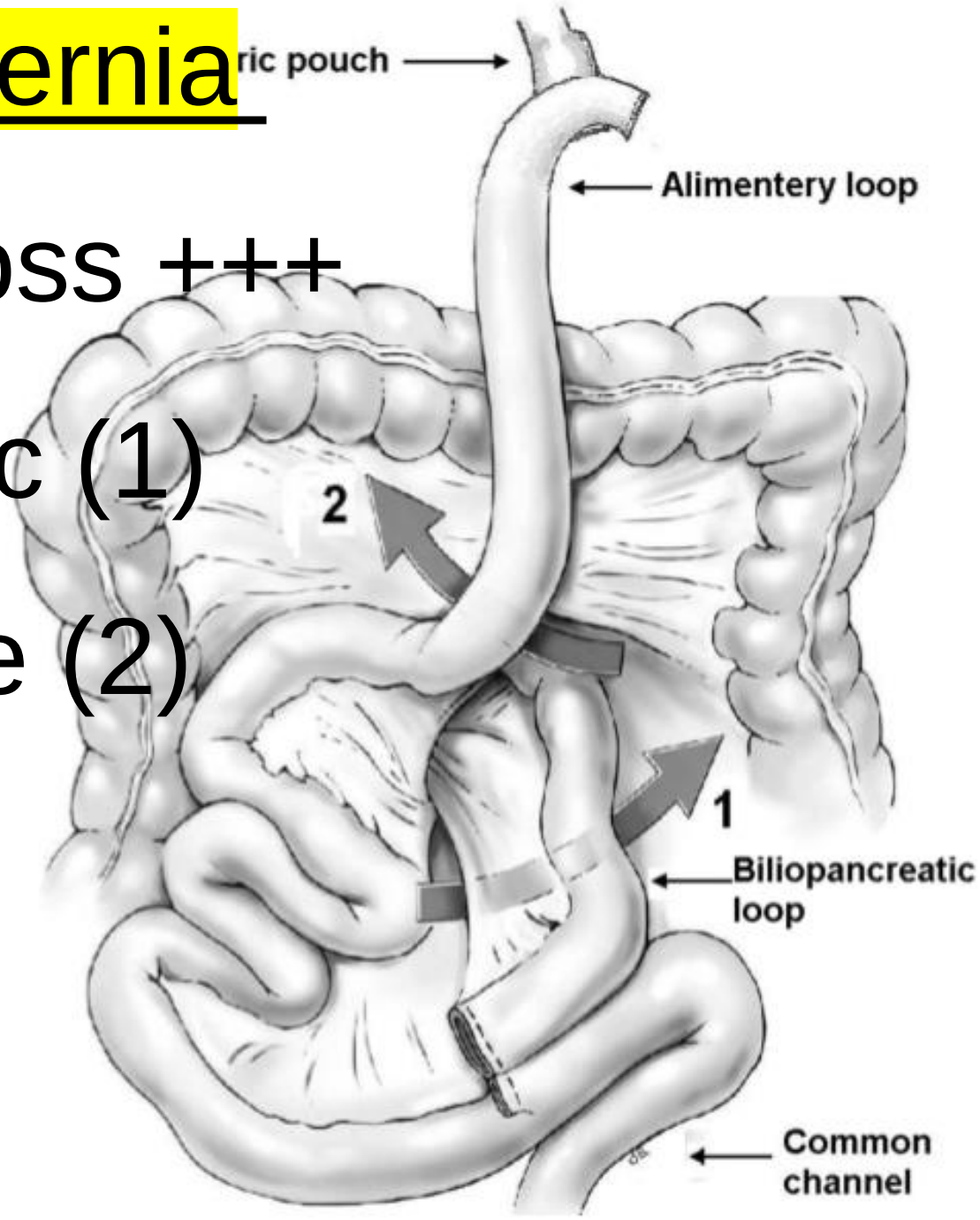
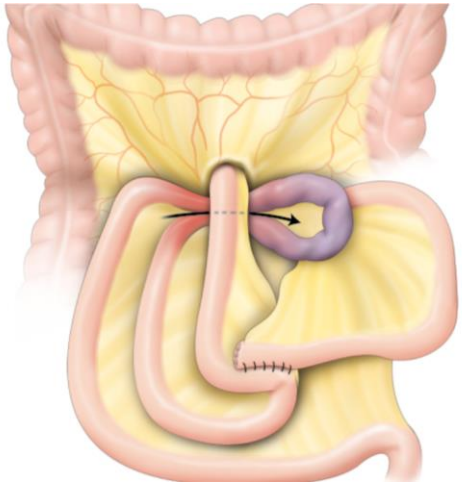


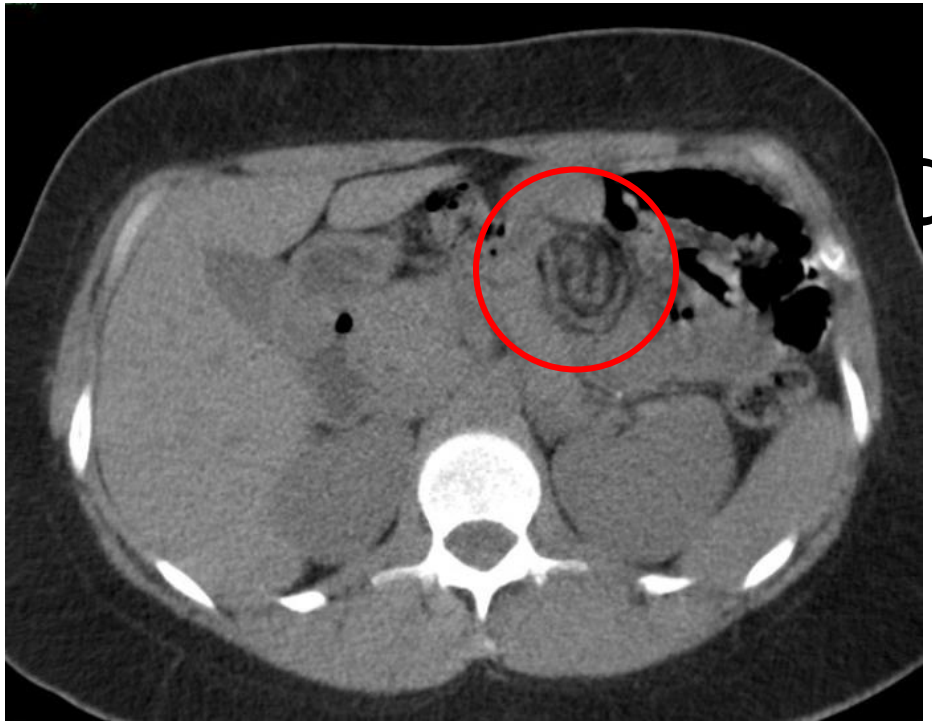
Figure 1. Possible herniation sites after antecolic Roux-and-Y gastric bypass.



Petersen Hernia

cific to Roux en Y Byp

Symptoms :



dominal transfixing cran

calmed by * Anteflexio

* left lateroflexio

Intussusception (rare)

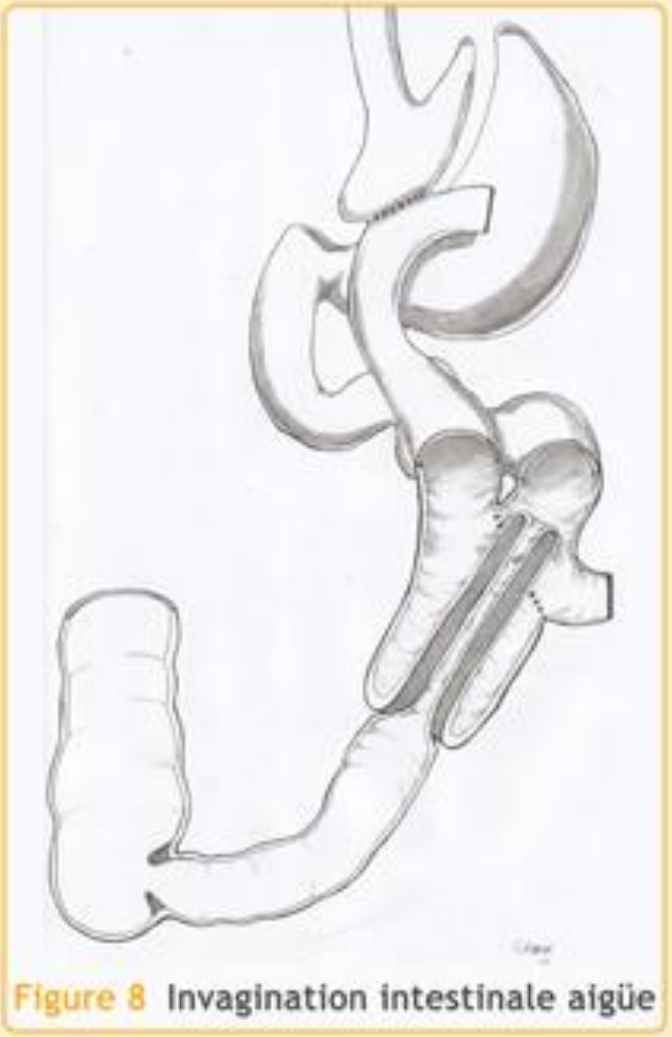


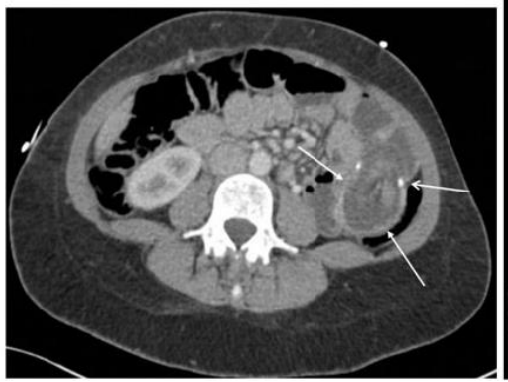
Figure 8 Invagination intestinale aigüe

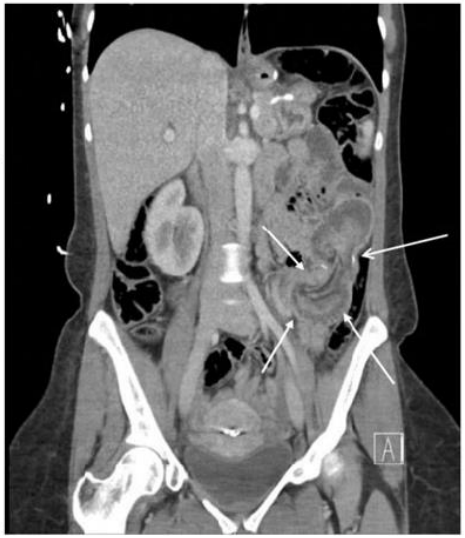
Jejuno-jejunal anterograde (30%)

or retrograde (70%)

Symptoms:

- Acute abdominal pain
- Vomiting
- Electrolytic disturbances





Marginal Ulcer after BP : 2 - 12 %

Contributing factors : Tabagism, NSAID, ASA, cortic, HP

Clinics : pain, dysphagia, dyspepsia, vomiting, bleeding

Traitement : PPI (+ Ranitidine), stop causal factors,

sometimes surger