10 years Experience with Bariatric Surgery in Treatment of Obesity and Metabolic Syndrome

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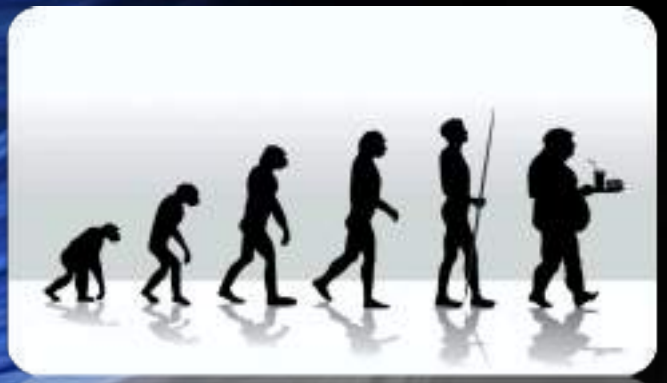
Podgorica, Montenegro, 25.04.2019.

,,GLOBESITY”



- ✓world-wide epidemic
- ✓prevalence (USA) 36% adult, 17% adolescent
- ✓15% adult population in USA = severe obesity (BMI > 35 kg/m^2)
- ✓fifth leading risk of death world-wide (WHO)
- ✓responsible for 80% cases with DMT2, 35% ischemic heart disease, 55% hypertensive disease

Fried M, Yumuk V, Oppert JM, Scopinaro N, Torres AJ, Weiner R, Yashkov Y, Fruhbek G. Interdisciplinary European Guidelines on Metabolic and Bariatric Surgery. Obes Facts 2013;6:449-468 .

Metabolic Syndrome (MS)

A disorder of energy utilization and storage (3 of 5)

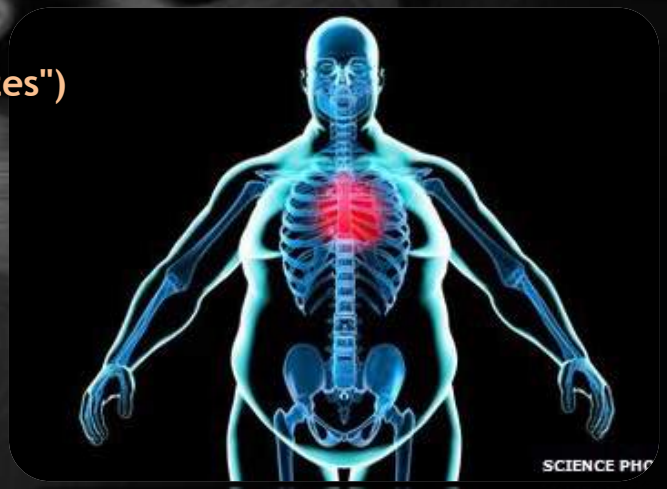
✓central obesity (CO)
✓elevated blood pressure (BP)
✓elevated fasting plasma glucose (FPG)
✓high serum triglycerides (TG)
✓low high-density cholesterol (HDL) levels

Other signs

impaired fasting glucose, insulin resistance ("prediabetes")

Associated conditions

hyperuricemia
fatty liver progressing to NAFLD
polycystic ovarian syndrome (in women)
erectile dysfunction (in men)
acanthosis nigricans



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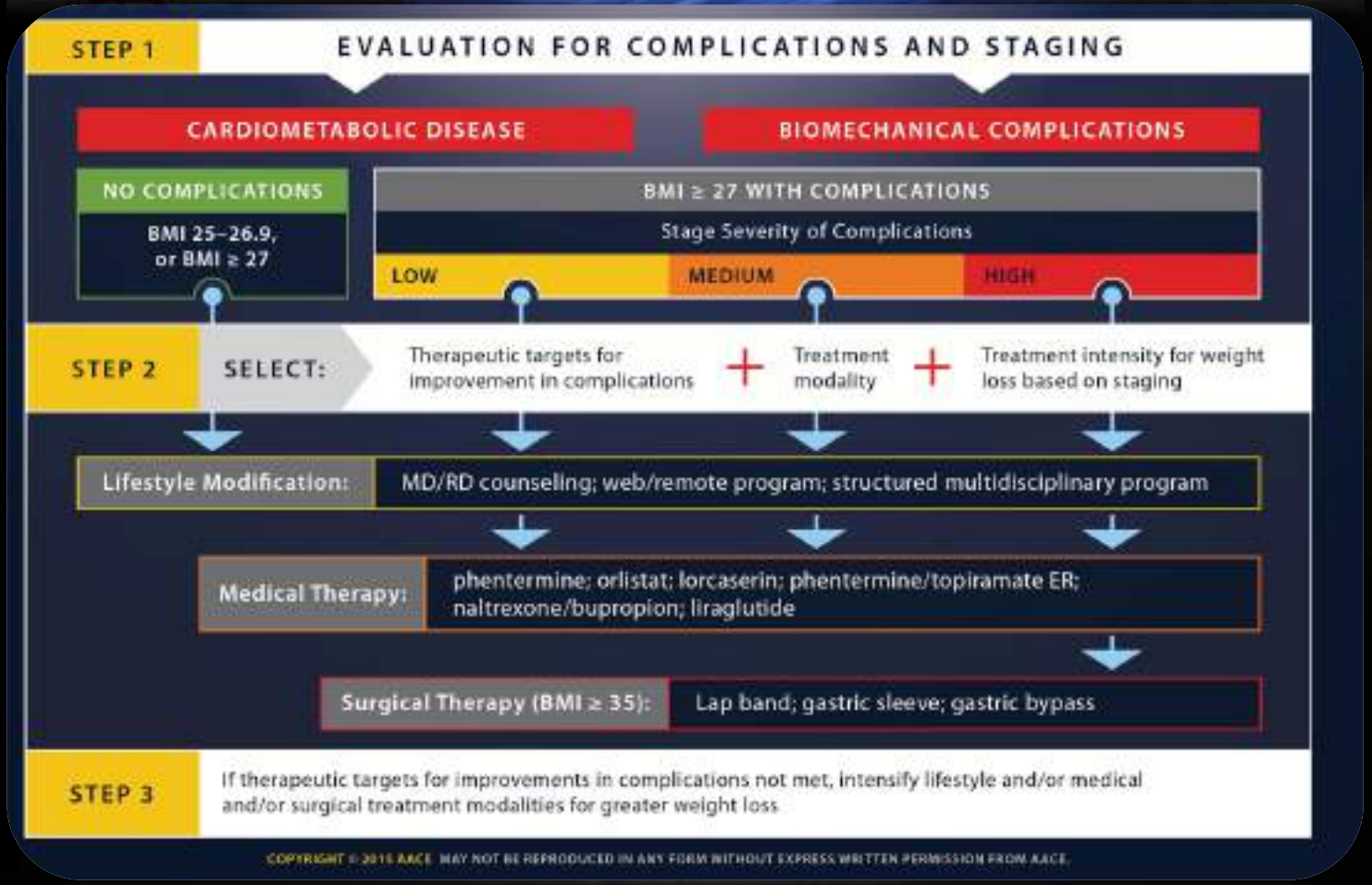
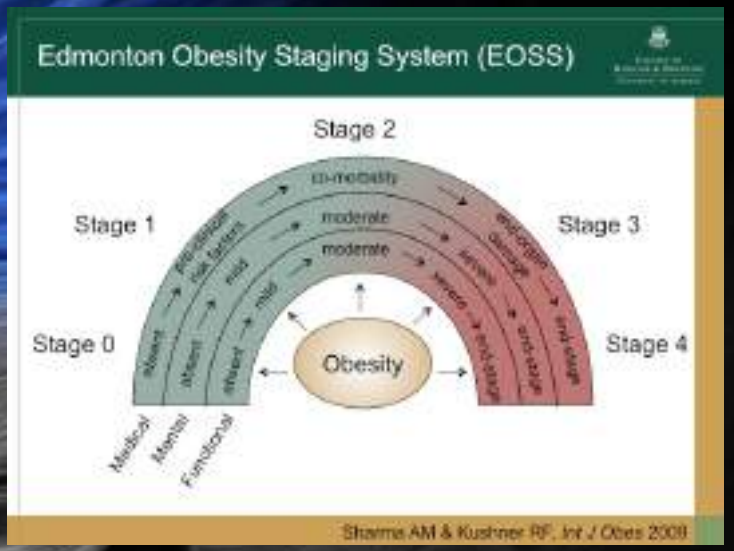


Classification of Obesity

WHO Classification

BMI	Classification
<18.5	Underweight
18.5-24.9	Normal weight
25-29.9	Overweight
30-34.9	Obesity Class I
35-39.9	Obesity Class II
40-49.9	Obesity Class III
50 and above	Super Obesity

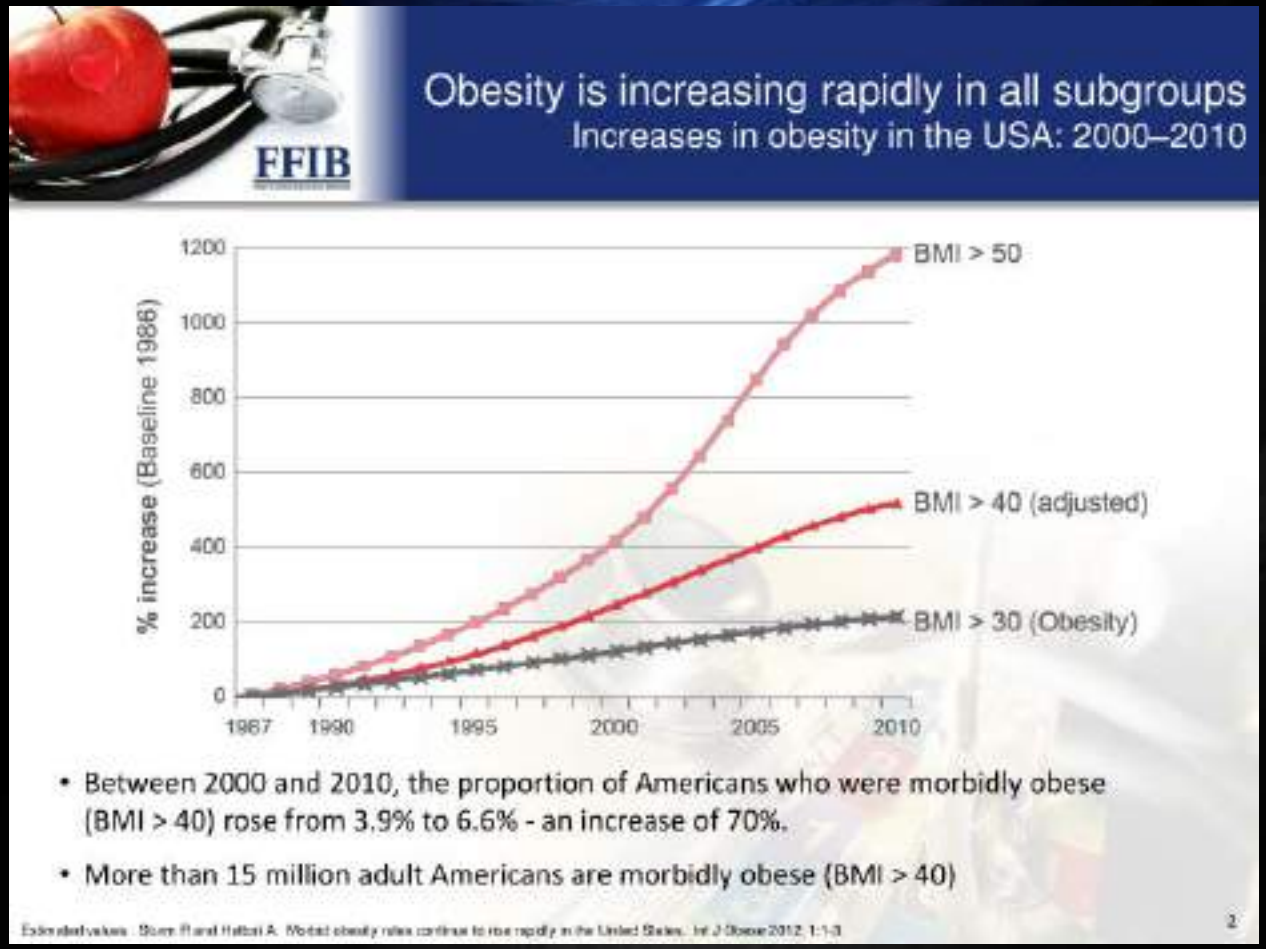


	BMI
Underweight	<18.5 kg/m²
Normal or acceptable weight	18.5-24.9 kg/m²
Overweight	25-29.9 kg/m²
Obese	≥30 kg/m²
Grade 1	30-34.9 kg/m²
Grade 2	35.0-39.9 kg/m²
Grade 3	≥40 kg/m² (severe, extreme or morbid obesity)
Grade 4	≥50 kg/m²
Grade 5	≥60 kg/m²
Abdominal obesity in Caucasians	**Waist girth**
Men	≥94 cm
Women	≥80 cm

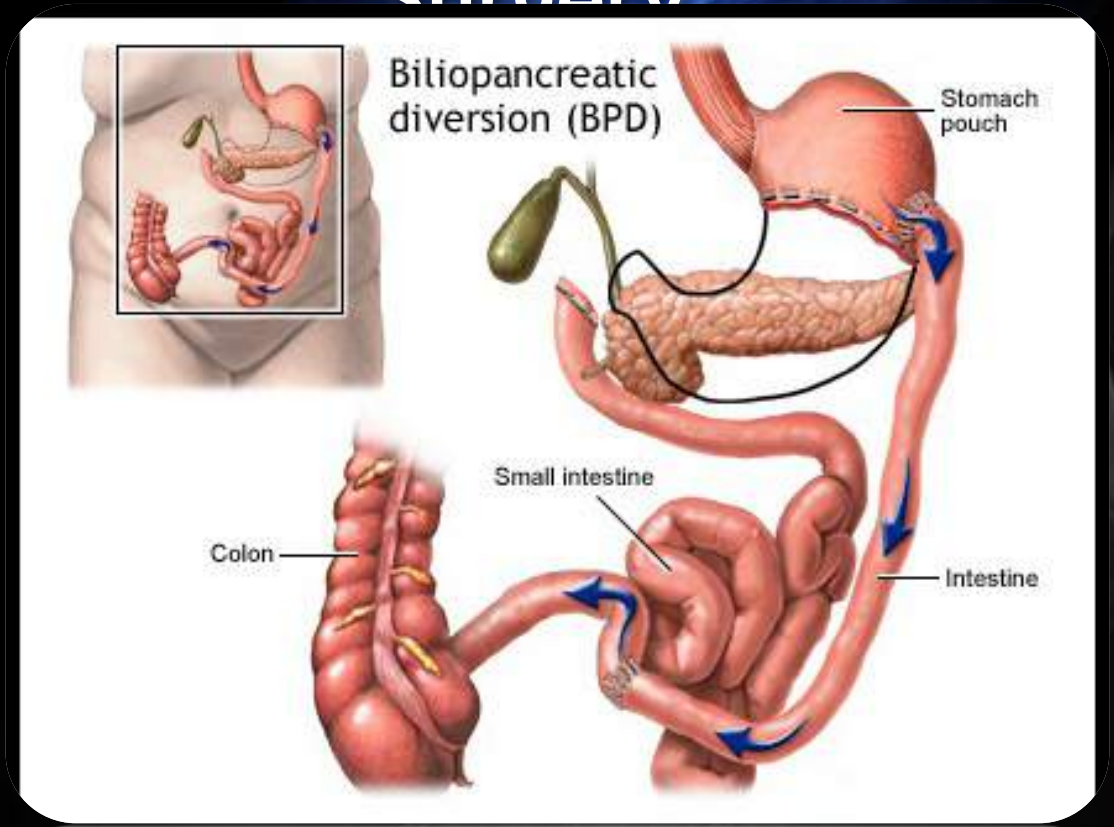
Table 1 The Modified King's Obesity Staging systems. CPAP: continuous positive airway pressure. PCOS: polycystic ovarian syndrome, QoL: Quality of life

	Stage 0 Normal health	Stage 1 At risk of disease	Stage 2 Established disease	Stage 3 Advanced disease
Airways	Normal	Snoring	CPAP therapy	Cor pulmonale
BMI	<25kg/m²	25-40kg/m²	40-60kg/m²	>60kg/m²
Cardiovascular	<10% risk	10-20% risk	Heart disease	Heart failure
Diabetes	Normal	Impaired fasting glucose	Type 2 diabetes	Uncontrolled type 2 diabetes
Economic	Normal	Increased expense for clothes and travel	Workplace discrimination	Unemployment due to obesity
Functional	Can walk three flights of stairs	Can walk one or two flights of stairs	Requires mobility aid	Housebound
Gonadal	Normal	PCOS or erectile dysfunction	Subfertility	Severe sexual dysfunction
Health Status (perceived)	Normal	Low mood or QoL	Depression or poor QoL	Severe depression
Image(body)	Normal	Dislikes body	Body image dysphoria	Eating disorder

Increasing trend of super obese patients



Milestone of Metabolic Surgery



Scopinaro (1986)

Resolution of Metabolic Disorders → Metabolic Surgery

1990 - 2003

22 094 patien

Mean % EWL = 61,2

	Completely resolved	Improve
Diabetes (DMT2)	76,8%	86%
Hyperlipidemia		70%
Hypertension	61,7%	78,5%
Obstructive sleep apnea	85,7%	83,6%

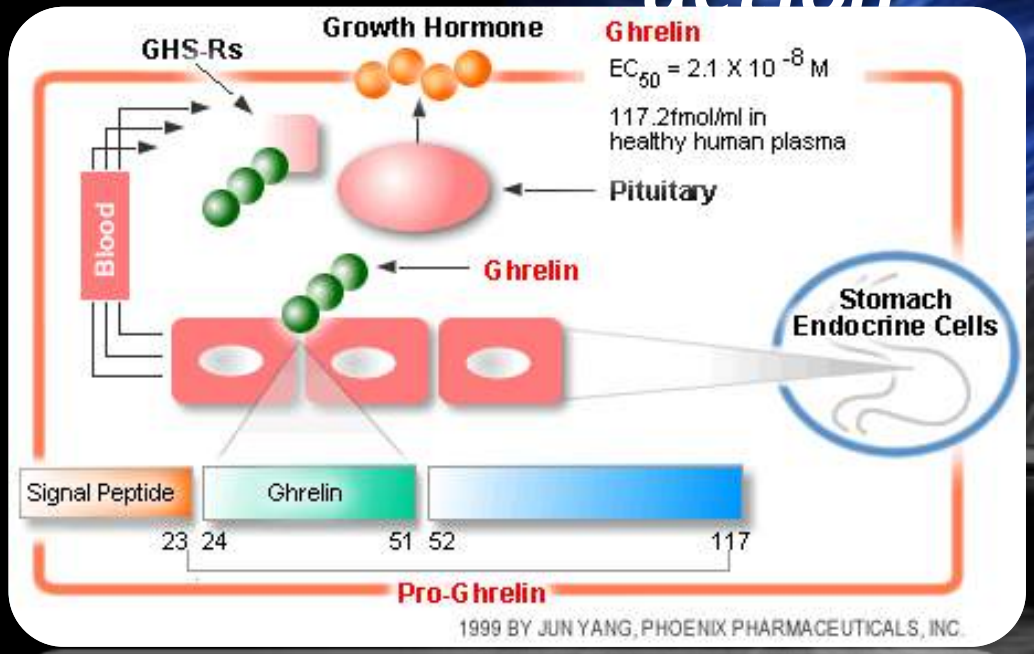
Buchwald H, Avidor Y, Braunwald E et al. Bariatric Surgery: A Systematic Review and Meta-analysis. JAMA. 2004; 292 (14): 1724-1737.

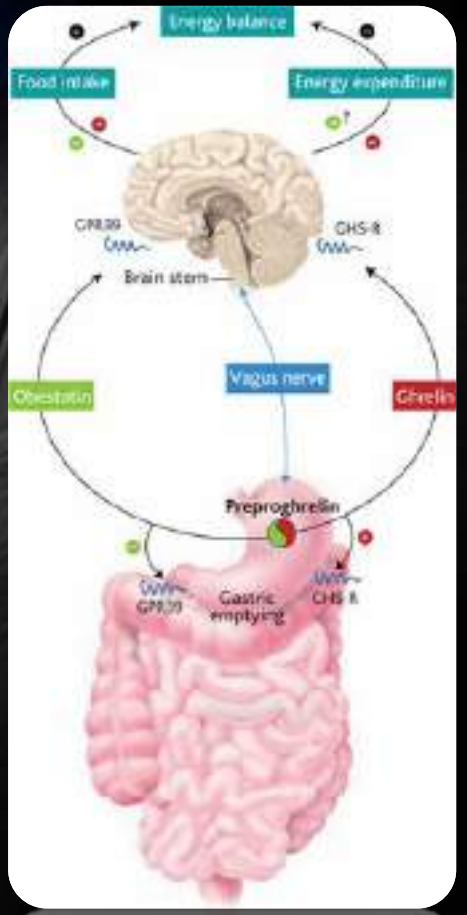
Sleeve gastrectomy *is a surgical METABOLIC procedure in which the stomach is reduced to about 20-25% of its original size, by surgical removal along the greater curvature.*

The result is a "sleeve" or tube like structure.

The procedure permanently reduces the size of the stomach, although there could be some dilatation of the stomach later on in life.

LGS - Mechanism of action





Reduced ghrelin (growth hormone releasing hormone) - ,,hormone of hunger".

Significantly reduced in LGS vs gastric banding.

Langer FB, Reza Hoda MA, Bohdjalian A, Felberbauer FX, Zacherl J, Wenzi E, Schindler K, Luger A, Ludvik B, Prager G. Sleeve gastrectomy and gastric banding: effects on plasma ghrelin levels. Obes Surg. 2005 Aug; 15 (7): 1024-9

Indications (1)

In super-super-obese patients (BMI > 60 kg/m), as a bridge or first stage of a two-staged definitive procedure (RYGB or BPD-DS).

In super-obese (BMI > 50 kg/m) patients, as a definitive procedure or as a first stage of RYGB or BPD- DS.

In patients with BMI > 40 kg/m with severe medical disease (cirrhosis, pulmonary hypertension, cardiac failure).

In patients with low BMI (35-40 kg/m) with or without a major co-morbidity, as a better alternative than LAGB.

The morbidly obese adolescent and elderly.

Indications (2)

An alternative in pts. with inflammatory bowel disease, severe small bowel adhesions or those patients who underwent previous colectomy.

In patients who require periodic gastric surveillance (e.g., Helicobacter pylori infection, gastritis, ulcers, neoplasm, and intestinal metaplasia) because the stomach remains accessible via upper endoscopy.

In patients with anemia, those requiring anti - inflammatory medications, those who use high doses of steroids (e.g. in severe asthma or organ transplant candidates or recipients), and those who use cardiac or transplant medication.

As a measure to allow other procedures to be performed (e.g. joint replacement)
As a revisional surgery, complications, inadequate weight loss or poor quality of life after LAGB, RYGB.

Technique

Journal of Investigative Surgery

Surgical Technique: Laparoscopic Gastric Sleeve Resection in Super-Obese Patients

M. Ilic PhD & S.S. Putnik MD

To cite this article: M. Ilic PhD & S.S. Putnik MD (2017): Surgical Technique: Laparoscopic Gastric Sleeve Resection in Super-Obese Patients, Journal of Investigative Surgery, DOI: 10.1080/08941939.2017.1289284

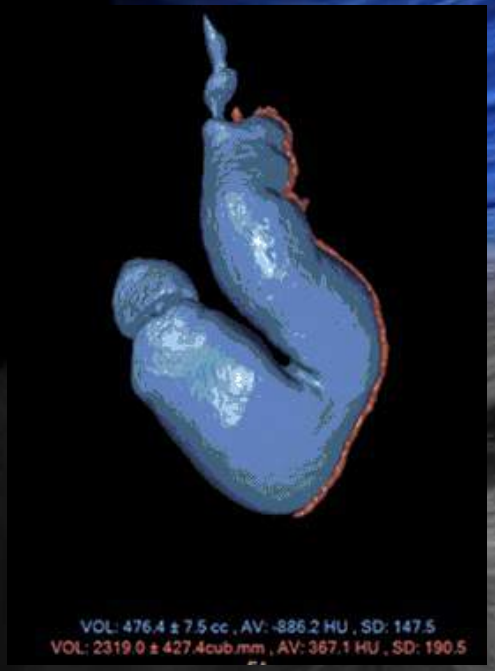
To link to this article: http://dx.doi.org/10.1080/08941939.2017.1289284

Published online: 07 Apr 2017.

Mechanisms of action

Antral resection

3 cm?



8 cm?

Gastric emptying is faster in patients <u>with</u> antrum resection.

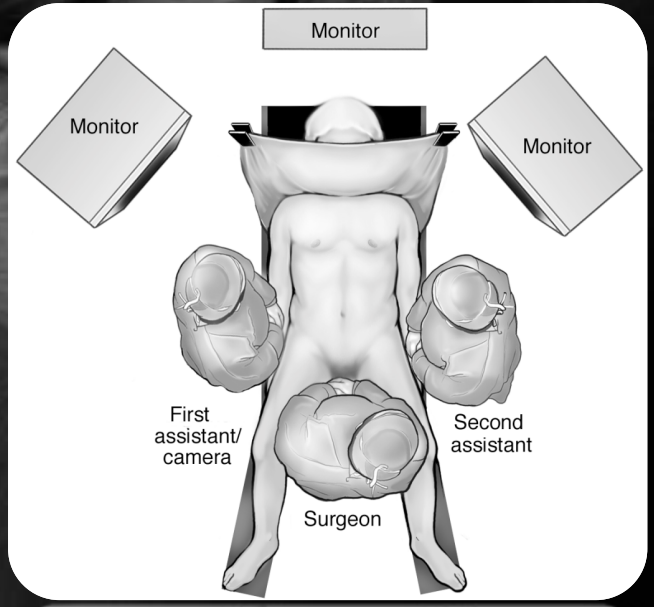
Significant improvements in the hyperinsulinaemia in the pts. of the 3 cm group (only DMT2).

Vives M, Molina A, Danús M. Analysis of Gastric Physiology After Laparoscopic Sleeve Gastrectomy (LSG) With or Without Antral Preservation in Relation to Metabolic Response: a Randomised Study. Obes Surg. 2017 May 7. doi: 10.1007/s11695-017-2700-z

Results

Institut (Sremska Kamenica) + CODRA Hospital, Podgorica

- 2009 - 2019
- 750 LGS, 6 MGB, 12 LAGB
- Overall mean BMI = 51,1 kg/m²

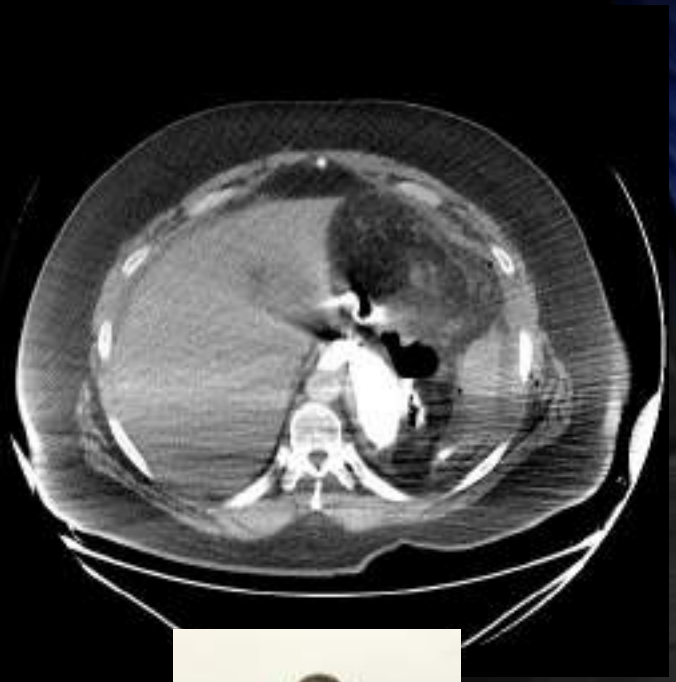


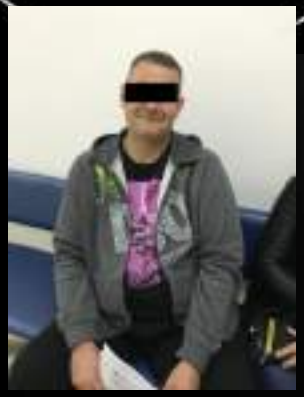
Complications (1,87%)

- ,,Neofundus” 1 pt.
- Deep v. thrombosis 1
- Acute cholecystitis 1
- Hernia trocar site 1
- Infection ts
- Pneumonia 1 pt.
- Thromboembolia pulm. 1 pt.
- Thrombosis a. popliteae 1 pt.
- Postoperative bleeding 4 pts.
- Pancreatic fistula 1 pt.
- Enteral fistula 1 pt.

Complications

2 pt. (0,26%) – early leakage solved with T tube, jejunostomy and drainage (open procedure)





Long-term outcomes (11+ years)

Isolated LSG provides a long-term %EBMIL od 62,5%.

Conversion to another construction, required in 25% of the cases.

Patient satisfaction score remains good despite unfavorable GERD outcomes.

Arman GA, Himpens J, Dhaenens J. Long-term (11+years) outcomes in weight, patient satisfaction, comorbidities, and gastroesophageal reflux treatment after laparoscopic sleeve gastrectomy. Surg Obes Relat Dis

SERBIAN ARCHIVES

Paper Accepted

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Case Report / Приказ случаја

Long-term results of laparoscopic gastric sleeve resection due to morbid obesity and metabolic syndrome

LGS in MO - results (1)

initial BMI=70,2 kg/m²

Resolution of comorbidities: all (4/4)
Long-term result: excellent
No additional surgeries
Pt satisfaction: excellent

	2 years after operation	8 years after operation
BMI (kg/m²)	28,4	34,3
%EWL	87,5	75
%TWL	59,3	51
%EBMIL	92,4	79,3

LGS in MO - results (2)

Initial BMI = 87 kg/m^2

BMI after 2 years: 62 kg/m2 (bad result)
Problem: no physical activity, sweet eater
Planned for subsequent metabolic procedure

LGS in MO - results (3)

initial BMI=86kg/m²

Intraoperative conversion to OPEN GS: insufficient pneumoperitoneum

BMI after 2 years: 30 kg/m² (good short term result)

No additional surgery

Resolution of comorbidities: all (2/2)

LGS in MO - results (4)

Initial BMI=89 kg/m²

One month of preoperative intrahospital treatment of comorbidities and diet.

Cardiomyopathia, unregulated hypertension, arrhythmia extrasystolica.
Preoperative weight loss: 17 kg.
He demand ANY operation.

Intraoperative conversion to OPEN GS due to insufficient pneumoperitoneum.

At the end of operation IMPOSIBLLE to suture abdominal wall. Reaproximation with metal sutures and wound packing.

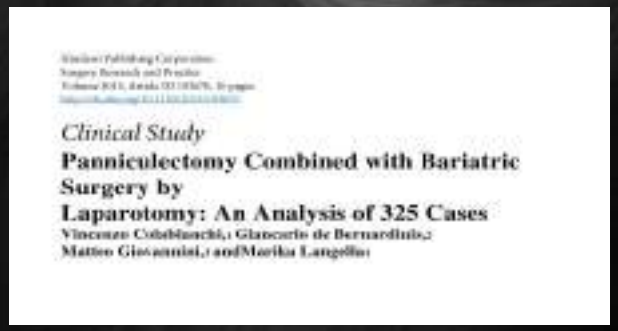
Prolonged postop care. Panniculus!

LGS in MO - results (4)

Initial BMI=89 kg/m²

Indication for panniculectomy and ventral hernia for a one year.
Expecting further weight loss.

One year after SG BMI=49 kg/m² %EWL 58,5
Resolution of comorbidities: Most (4/5)
Full social rehabilitation.

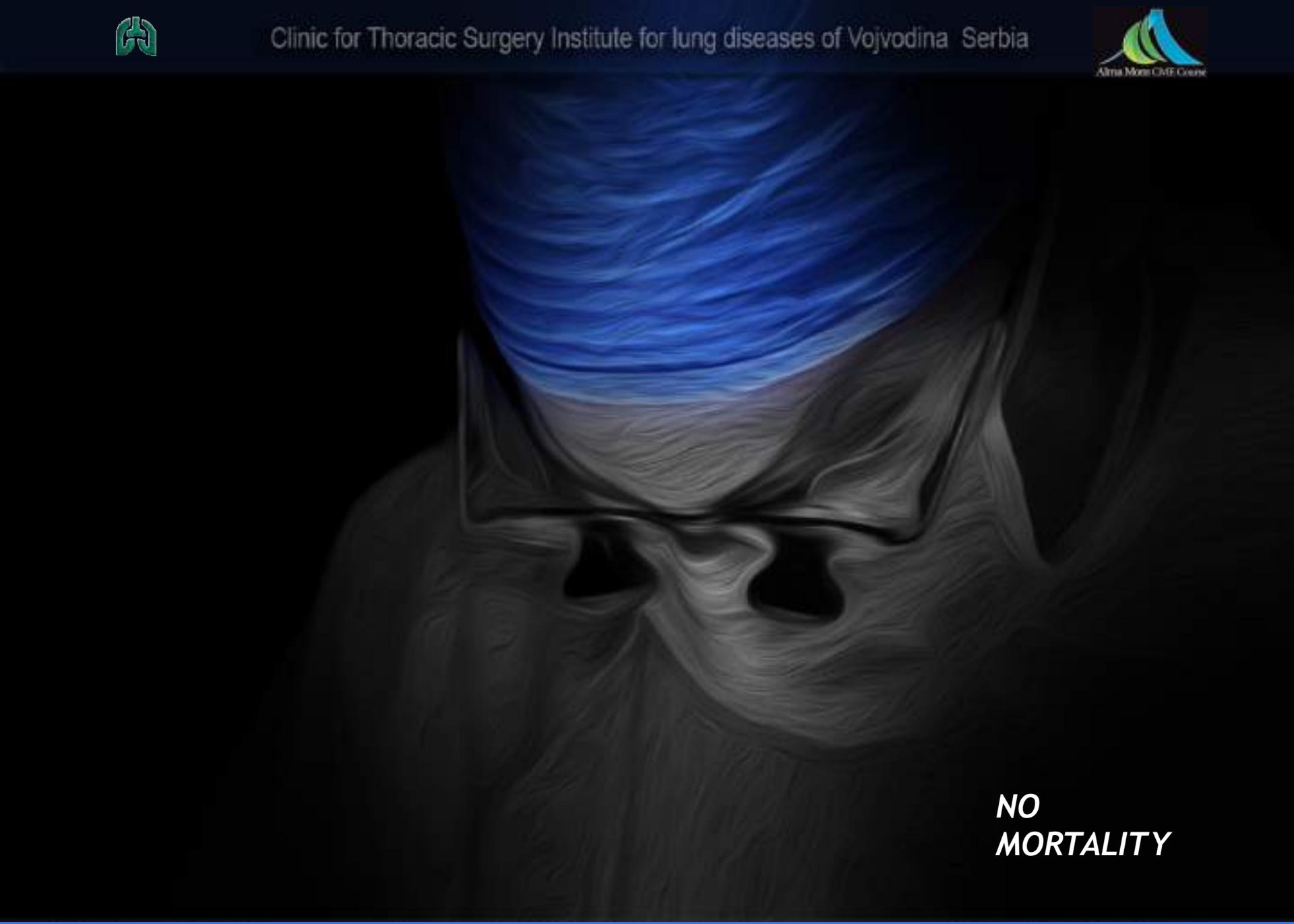


Clinical Study

Panniculectomy Combined with Bariatric Surgery by Laparotomy: An Analysis of 325 Cases

Vincenzo Cobellucchi,¹ Giancarlo de Bernardinis,² Matteo Giovannini,¹ and Marika Langellotti

Synchronous panniculectomy with open SG?



NO MORTALITY

Conclusion

1. *Bariatric and metabolic surgery come in the twenty century and rapidly growled after laparoscopic surgical access.*

2. *Obesity and related metabolic syndrome is global health problem with significant impact on morbidity and mortality.*

3. *Bariatric and metabolic surgery if performed under adequate technical conditions and surgical skills is safe surgery.*

4. *Obesity and metabolic syndrome could be treated with excellent results.*