Surgery at Montefiore Medical Center

MONTEFIORE
The University Hospital for the Albert Einstein College of Medicine

Ventral Hernia Repair in the Obese Patient

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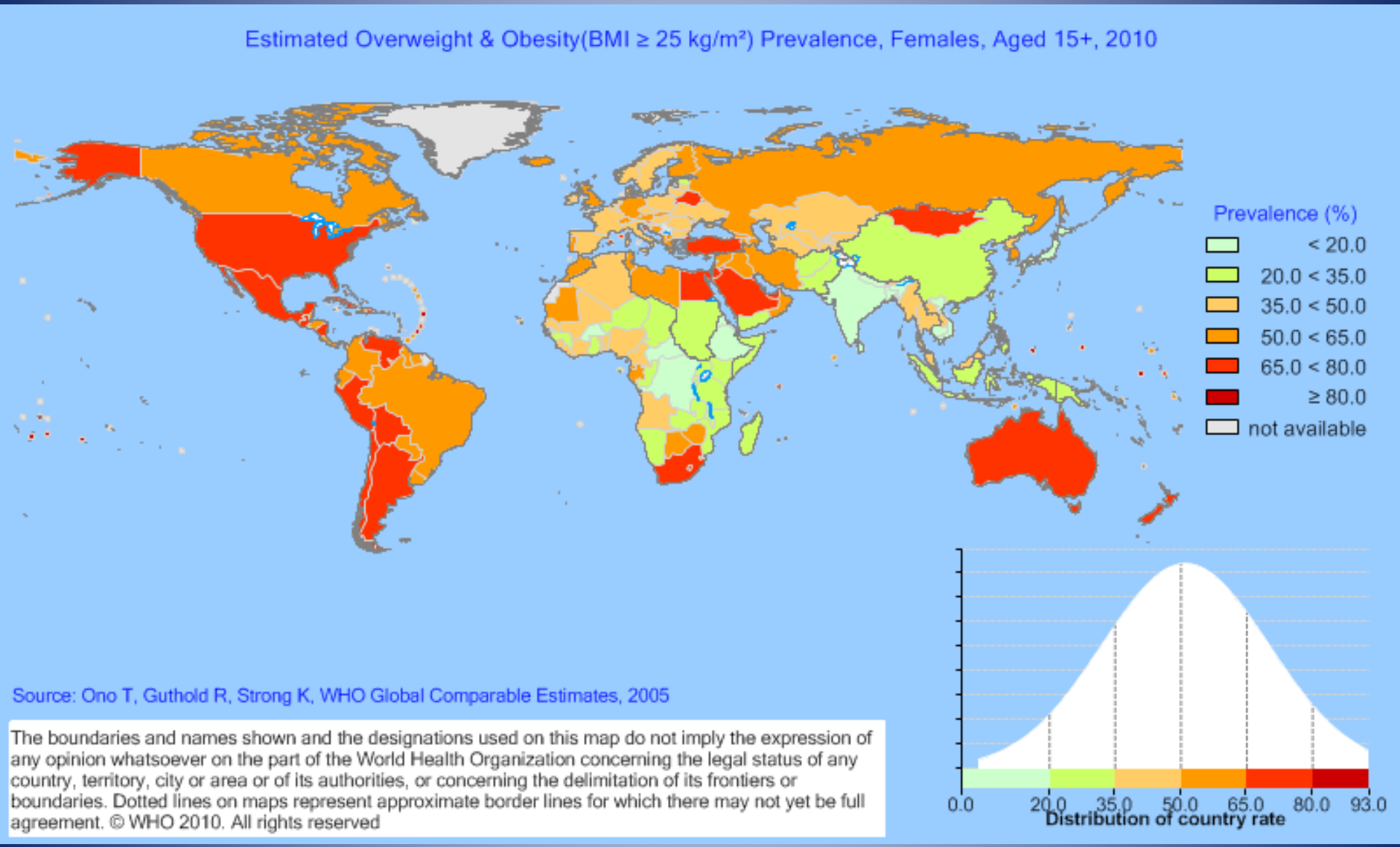
Disclosure

NO HABLO INGLES MUY BIEN!!!!!!

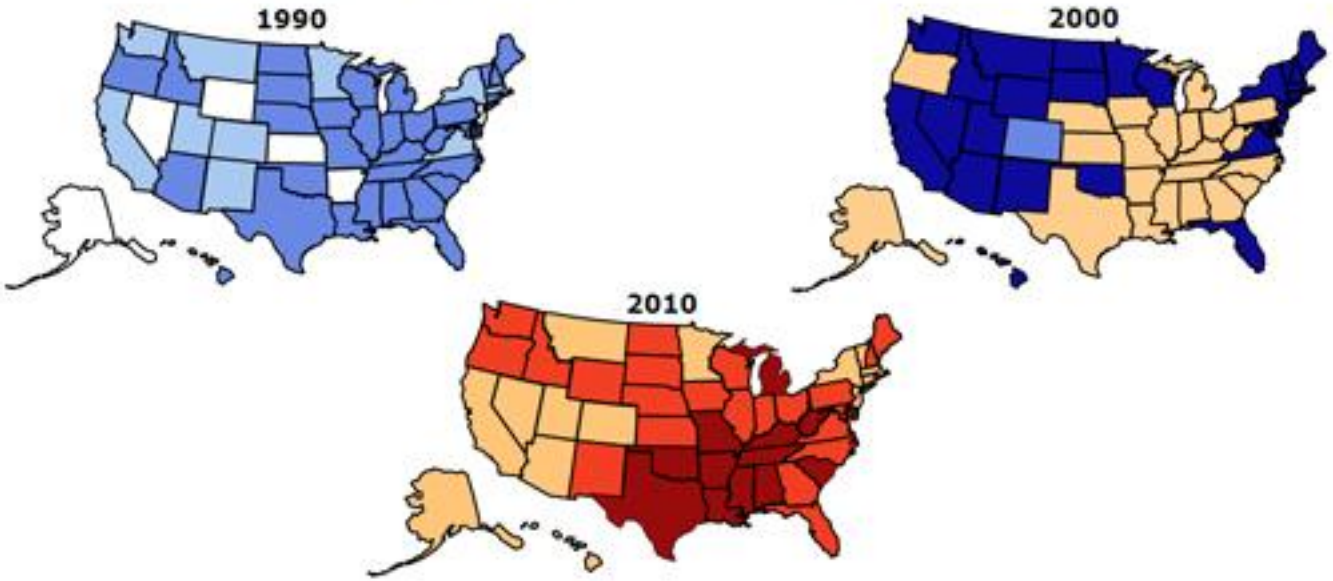


Source: Ono T, Guthold R, Strong K, WHO Global Comparable Estimates, 2005

Obesity Trends* Among U.S. Adults

BRFSS, 1990, 2000, 2010

(*BMI ≥30, or about 30 lbs. overweight for 5'4" person)



Source: Behavioral Risk Factor Surveillance System, CDC.

Run or Not to Run

Ventral & Incisional Hernia

- More than 2 million open abdominal operations are performed annually in the U.S.
- 2 – 11% of these patients will develop incisional hernias.
- Approx. 350,000 ventral and incisional hernias are repaired each year in the U.S

What is the Problem

- Hernia patients and obesity

  Symptomatic vs Asymptomatic

- Bariatric patients with hernia

Pre OP Considerations

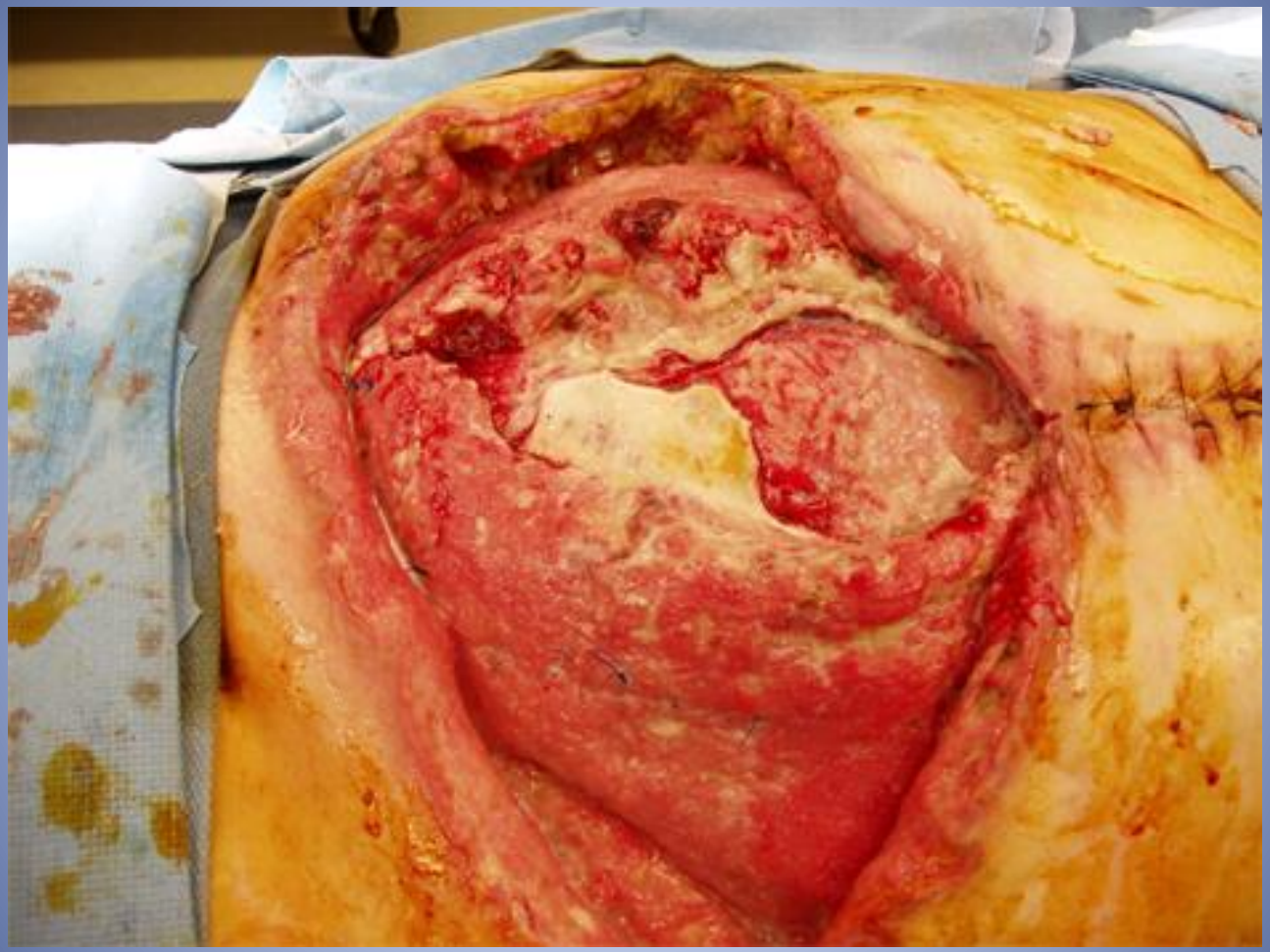
- Can the repair be delayed?
- What is the best surgical approach
- Bariatric Surgery
- Does the pt wants and qualifies?

  Concurrent vs Staged

  Bypass/Sleeve/Balloon/Band
- Expectations of the repair

Obesity and Ventral Hernias

- Technical Challenges
- Medical Conditions
  - Compromise Tissue handling
  - Wound Complications



S. Sauerland · M. Korenkov · T. Kleinen
M. Arndt · A. Paul

Obesity is a risk factor for recurrence after incisional hernia repair

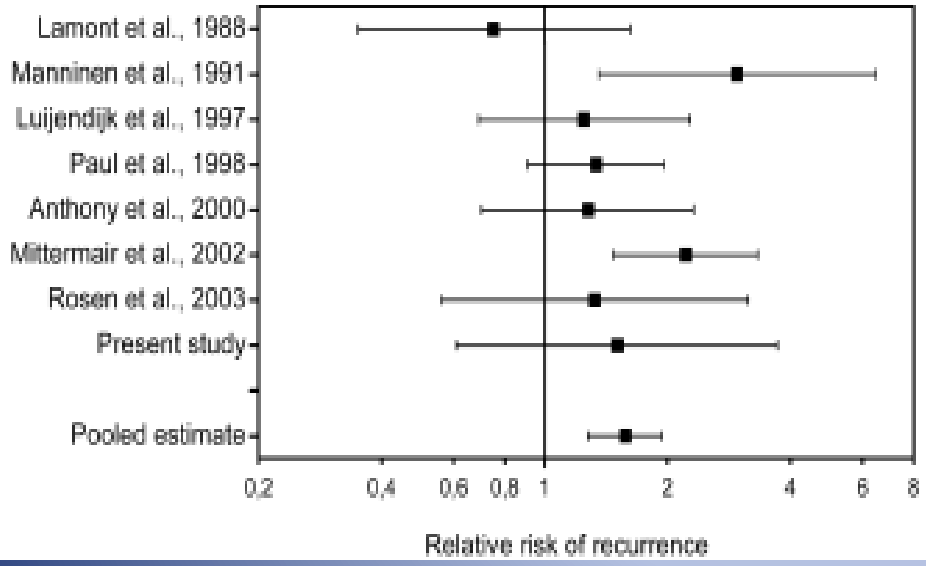


Table 1 Baseline characteristics of the 160 patients

	Mean (±SD)	Range
Age (years)	57.8 (±13.3)	21–85
Gender (men/women)	76/84	–
Height (cm)	169.4 (±9.6)	150–196
Weight (kg)	80.7 (±17.1)	40–170
BMI (kg/m^2)	28.1 (±5.3)	14.7–58.8
Hernia size (cm)		
Vertical diameter (cm)	6.6 (±5.9)	1–38
Horizontal diameter (cm)	8.6 (±5.8)	1–35
Total area (cm^2)	82.5 (±160.0)	2–1,330 (Median 35)

Data on obesity missing for one patient, and data on hernia size missing for four patients; SD = standard deviation; BMI = body mass index

Does Obesity Matters

- Commonly cited factor for recurrence
- Technical difficulties
- Large defects Large Mesh
- Peri-OP complications
  - Surgical site
  - Systemic

Where is the DATA??

Does Obesity Matters

- Retrospective review
- 168 pts 42 pts with BMI >35
- Standard LVHR (synthetic mesh)
- 19 month F/U 12% recurrence
- Influence by defect/mesh size

Comparison of early outcomes for Lap VH between obese and non-obese parients
Ching et al, Surg Endoscopy 2008

Does Obesity Matter

- Retrospective review
  - 27 pts >BMI 35
  - Mean BMI 47
- Standard LVH
  - Synthetic 53%
  - Biologic 47%
- 15 month F/U Recurence 18%
- Higher recurrence and pts need to be infromed

Outcomes of LVH in Morbid Obese patients
Rattoupuolus et al. Surg Endo 2008

Does Obesity Matters

- 2 year retrospective review
- Retrospective review
  - Group I (n=134) BMI >40
  - Group II (n=767) BMI <40

Group I 8.3% recurrence

Group II 2.9% recurrence

Laparoscopic VHR between morbid obese patients
Tseretell et al, Hernia 2013

Recurrence After Laparoscopic Ventral Hernia Repair in Obese Patiens

- 850 pt eval
  - Patients with BMI>40
    - Younger (47 vs 57 yrs), p<0.01
    - Female, p<0.01
    - Large defect size (167 vs 105 cm), p<0.01
    - Trend to have more complications (18% vs 16%), p=0.09
    - Four times more likely to have a recurrence (7.8% vs 2%) p<0.05

Heniford et al Annals of Surg 2003

Laparoscopic ventral hernia repair (LVHR) in morbidly obese patients

Z. Tsereteli · B. A. Pryor · B. T. Heniford · A. Park · G. Voeller · B. J. Ramshaw

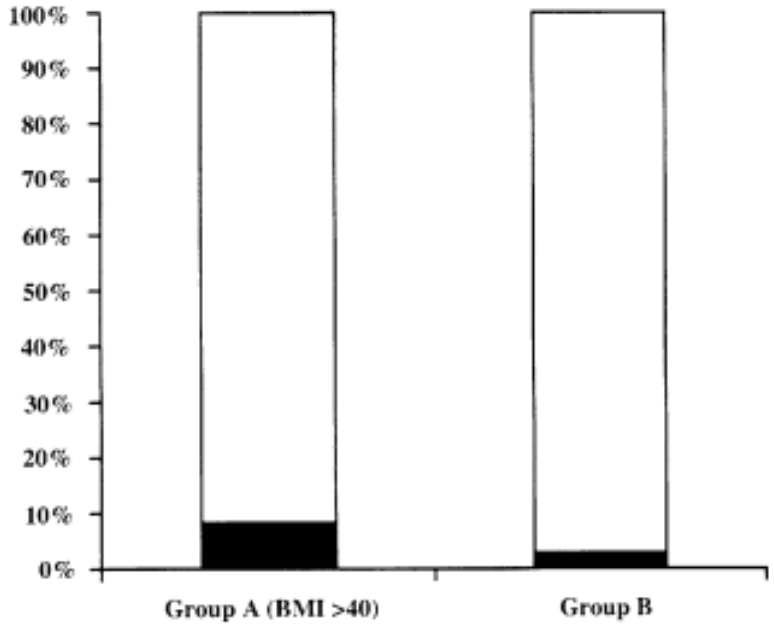


Fig. 1 Overall ventral hernia recurrence rate

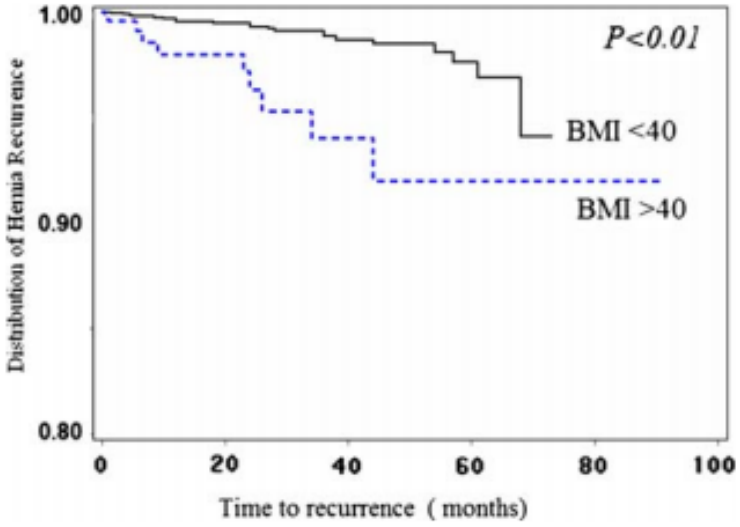
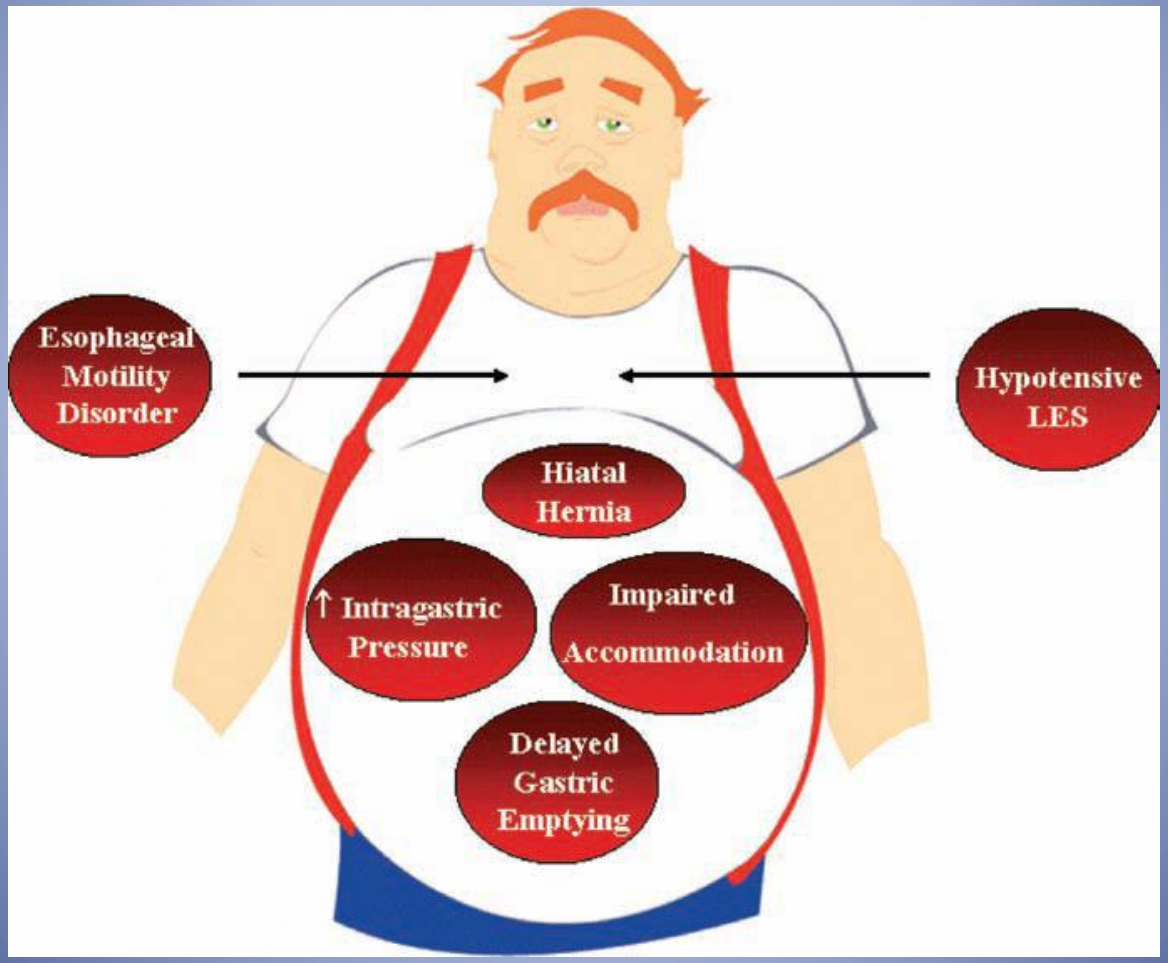


Fig. 2 The Kaplan-Meier curve of hernia recurrence in regard to time body mass index (BMI)

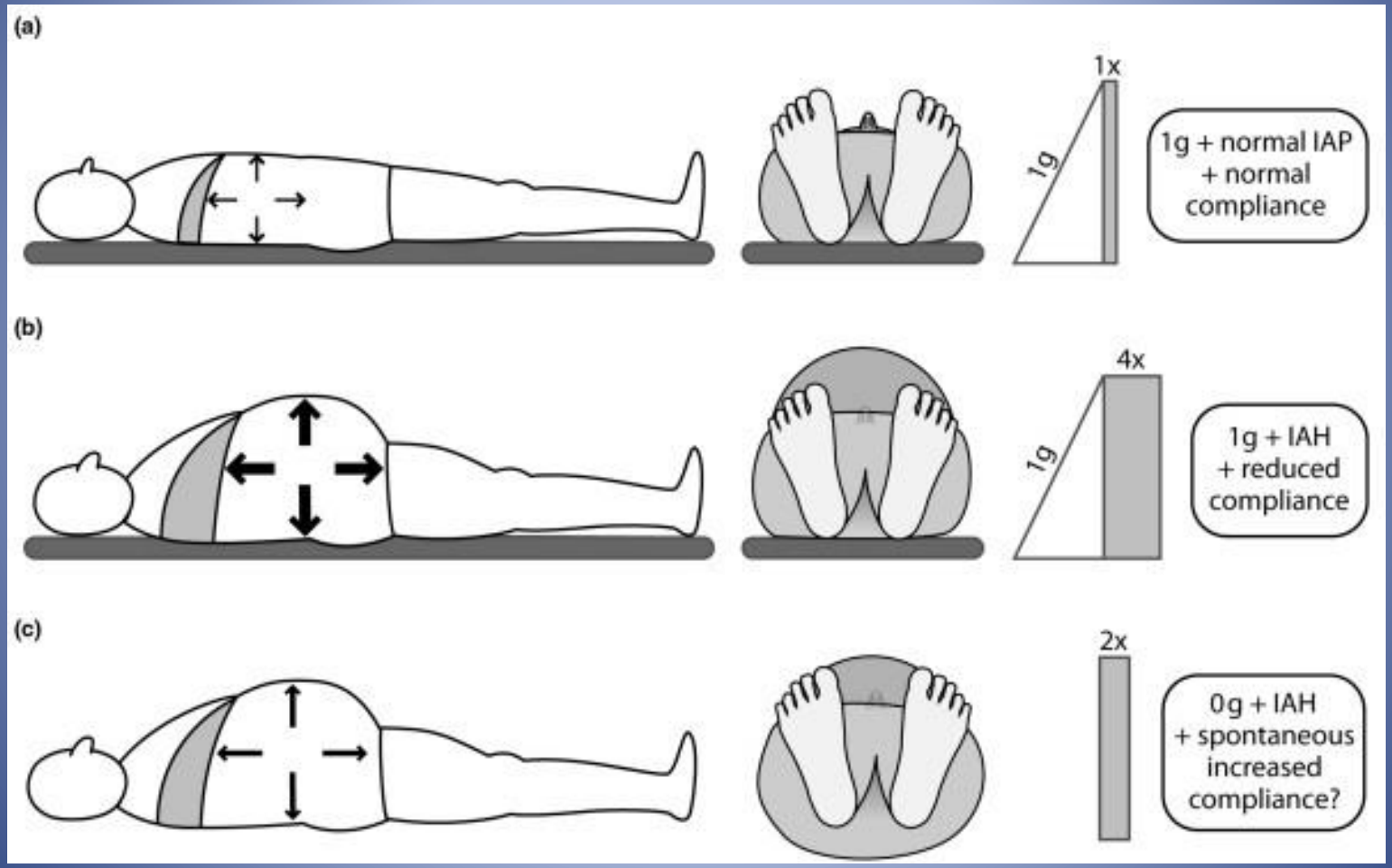
Hernia (2008) 12:233–238

Why This High Recurrence Rate in Obese Patients

PATHOPHYSIOLOGY



Friedenberg et al. Am J Gastroenterol 2008;103:2111-2122)


(a)
1x
1g
1g + normal IAP
+ normal
compliance
(b)
4x
1g
1g + IAH
+ reduced
compliance
(c)
2x
0g + IAH
+ spontaneous
increased
compliance?

IAP of Normal and Obese Patients

Activity	Normal	Obese
Stairs	69 (40-110)	88.3 (55-129)
Arm Curl	25 (17-37)	64 (16-100)
Bench Press	7 (2-34)	22 (5-35)
Cough	81 (40-127)	155 (80-250)
Standing Cough	107 (64-141)	185 (80-255)
Jumping	171 (43-252)	212 (150-25)

American Hernia Society 2006

What Can We Do to Reduce the Incidence of Hernia Recurrence

Choice of Strategy

- Depends on the Patient and the Surgeon
  - Symptoms
  - Urgency of the procedure
  - Best surgical approach
  - BMI of patient
  - Amount of weight loss desired
  - Comorbid conditions

Medical Treatment

- Diet – low in calories, fat and carbohydrates
- Exercise– 40 minutes 5 times per week
- Behavior Modification – eat 3 sensible meals per day, avoid snacking
- Drugs/Prescription medications
  Stimulants/appetite suppressants
- Antidepressants (Meridia®)
- Reduce fat absorption (Xenical®)

Diet

- Optifast or other diets
- Limited calories (900-1200 Kcal/day)
- Can achieve 15-25% weight loss in short period of time
- Nutrition evaluation 1-2 month
- High Cost

Comparison of Traditional and Nontraditional Weight Loss Methods: An Analysis of the National Health and Nutrition Examination Survey

Disadvantages

- **Most patients** (95-97%) regain most or all of the weight that was lost within 2-5 years following diet or drug treatment
  The average amount of weight loss is relatively small 10-40 pounds
- Drug therapy may be associated with severe complications (Fen-Phen and heart disease).

Exercise


GLASBERGEN
"What fits your busy schedule better, exercising one hour a day or being dead 24 hours a day?"

Which Technique

- Primary repair? (high recurrence 15-35%)
- Open VHR
  - Simple onlay vs inlay
  - STOPPA
  - Component separation
  - TAR

Laparoscopic VHR

Staged Procedure

LVHR in the Obese Patient
New standard of care?

- Retrospective review
- 163 patients
- BMI 38 (range,30-67)
- Standard LVHR (3%conversion)
- 25 months follow up
- Recurrence 5.5%
- “LVHR may be the approach of choice”

Novitsky et al, Archives of Suregry 2006


orkugifs.com
Honey please,
just calm down.
Let me explain....

Contraindications to Laparoscopy

- Loss of Domain
- Very large (>20cm) defect??
- Past or present mesh infection
- Need to remove old mesh
- Skin changes over the hernia sac

Open Component

- Retrospective Review
- 30 pts, BMI >35
  - Mean BMI 60
  - Mean defect width 12 cm (3-55)
  - No mesh placed Anterior CS
    - Additional procedures
      - RYGBP in 6 (20%) pts
      - Intestinal resection in 6 (20%) pts
      - Panniculectomy in 16 (53%) pts

Autologous tissue reconstruction of Ventral Hernias in Morbidly Obese
E. Chand et al, Arch of Surgery 2007

Open Component

- 44 month F/U
- Recurrence 3%

- Conclusions
  - Comp Separation is safe
  - Performance of panniculectomy does not improve outcomes
  - Effective technique

Stoppa

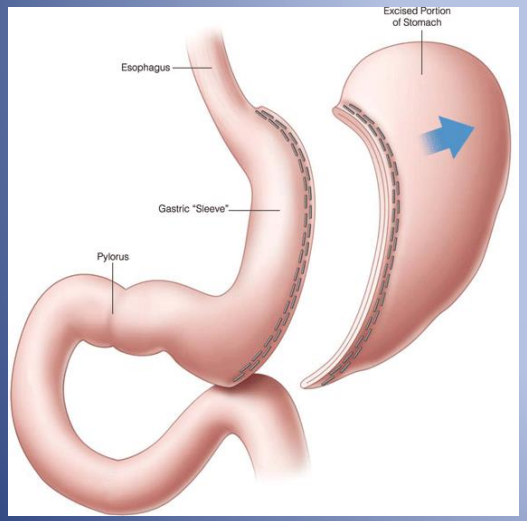
- Retrospective Review
- 90 pts BMI>30
  - Mean of 40
  - Retromuscular (STOPPA) repair
  - Synthetic mesh as sublay
  - Outcomes
    - Morbidity 8%
    - Mortality 1.1%
    - F/U 50 months Recurrence 5.5%

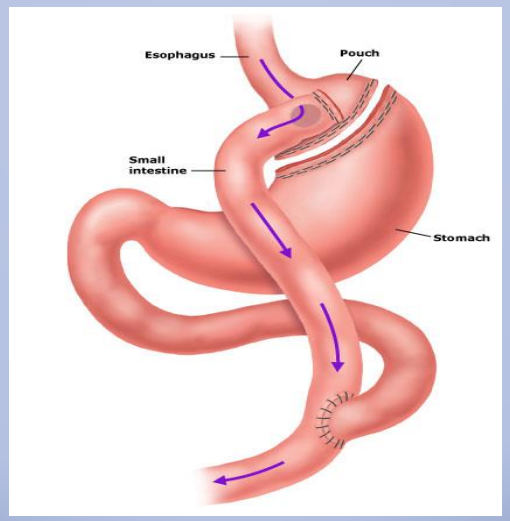
Moore et al, The American J of Surgery

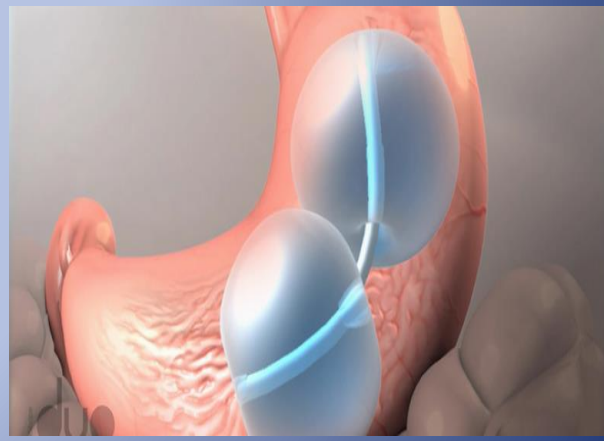
SHOULD VHR BE DELAYED IN MORBIDLY OBESE PATIENTS

Staged Repair

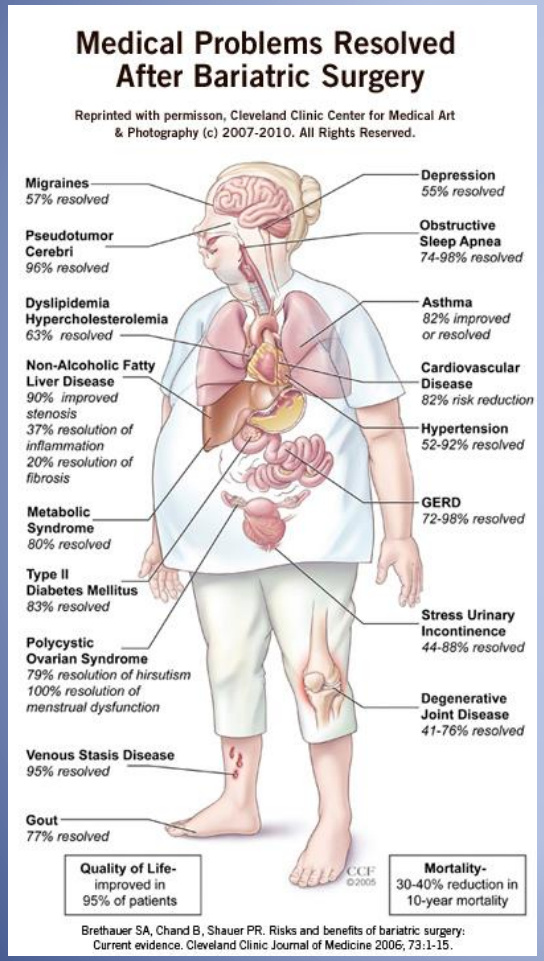
- Staged Ventral Hernia repair after surgical weight loss may decrease perioperative complications and recurrence rates in Obese Patients

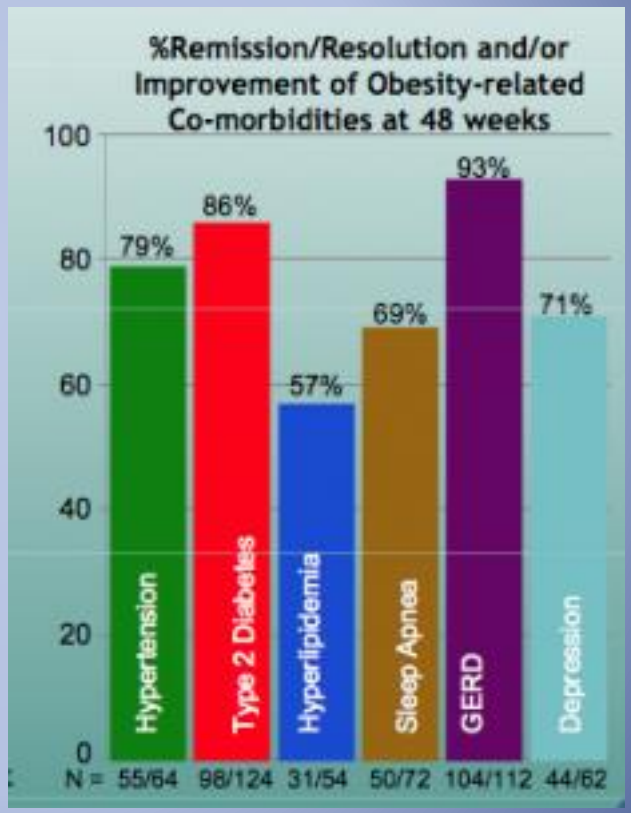






Comorbidity Resolution after Weight Loss Surgery





Staged Repair

- Restrospective Review
- 27 pts
- Mean BMI 51
- Gastric Bypass
  - Open 22, Lap in 5
  - Concurrent Hernai Repair (n=7)
    - Primary 4
    - Biologyc mesh in 3

ALL Recurred

Staged hernia repair preceded by gastric bypas for the tretment of the morbid obese with complex ventral hernia Newcome et al, Hernia 2009

Staged Repair

- One pt with bowel obstruction
- Hernia Repair 1.3 yrs later
  - LVHR in 8 (31%)
  - Open (STOPPA) in 19 (69%)

OUTCOMES

-F/U 20 months

-NO Recurrence

Ventral Hernias in Bariatric Surgery is it Safe to Deferred VHR?

- Retrospective review
- 85 pts (65 umbilical or small ventral hernia)
- BMI >35
  - Mean 51
- LVH 3 groups
  - Primary Repair 59 (70%)
  - Mesh 12 Synthetic/Bio (14%)
  - Deferred Repair 14 (18%)

Repair of VH in Morbid Obese pts undergoing Gastric Bypass should not be deferred
Eid et al Surg Endos

- Outcomes
  - Primary Repair
    - 30 month F/U recurrence 22%
  - Biologic Mesh
    - F/U 13 months NO recurrence
  - Deferred Repair
    - 5 pts w/SBO
- Conclusions:
  - Primary Repair High Failure Rate
  - Do NOT Deferred if LOA

Conclusion

Obesity is a risk factor for hernia failure

Medical guidance may improve outcomes

Laparoscopic is safe

- Don’t force it-contraindications exist

Open repair is excellent option

Staged repair may improve outcomes

Primary repair high failure rates