Bariatric Surgery
What the PCP Needs to Know

Mouna Abouamara
Assistant Professor
Internal Medicine
James H Quillen College Of Medicine

a@etsu.edu

Lecture Goals

• Indications for bariatric Surgeries
• Different types of bariatric procedures
• Complications after bariatric surgeries

Body Mass Index

• BMI = body weight (in kilograms)/height (in meters) squared, w/m²
• BMI between 25 and 30 kg/m² = overweight
• BMI greater than 30 kg/m² is considered to be obese
• Waist circumference >35 inches (88 cm) in women, > 40 inches (102 cm) in men
• Excessive fat in the abdominal area

Obesity Definitions

• Overweight = BMI 25-29.9 Kg/m²
• Obese (class I) = BMI 30-34.9 Kg/m²
• Moderately Obese (class II) = BMI 35-39.9 Kg/m²
• Severely /extremely/morbidly Obese (class III) = BMI 40-49.9 Kg/m²
• Super morbidly Obese (class IV) = BMI > 50.0 Kg/m²
# Consequences of Obesity

- Reduced life expectancy
- Diabetes mellitus type 2
- Hypertension
- Abnormal lipid profile
- CAD
- CVA
- Osteoarthritis
- Cancers
- Others

# Treatment for Obesity

- Diet/exercise:
  Healthy life style / behavioral modification
- Pharmacological:
  - Sibutramine
  - Orlistat
- Surgical treatment-bariatric surgery

# Definition of Bariatric Surgery

From Greek words

“Baros” = weight

“iatrikos” = medicine

# Indication for Bariatric Surgery

- Be well informed and motivated
- **BMI > 40**
- Acceptable risks for surgery
- Failed previous non surgical weight loss method
- **Also BMI > 35 with serious co morbidity** DM, OSA, severe OA, obesity related co morbidity
Goals of Bariatric Surgery

• Reduce morbidity and mortality
• Improve metabolic and organ function

Bariatric Surgical Procedures

• Purely Restrictive:
  – Vertical banded gastroplasty
  – Laparoscopic adjustable gastric banding
  – Sleeve gastrectomy

• Purely malabsorptive
  – Jejunoileal bypass (abandoned)
  – Biliopancreatic diversion
  – Biliopancreatic diversion with duodenal switch

• Malabsorption and restriction procedure mixed:
  – Roux–en–Y gastric bypass
Vertical Banded Gastroplasty

Laparoscopic Adjustable Gastric Band (LAGB)

Jejunoileal Bypass

Biliopancreatic Diversion
Biliopancreatic Diversion with Duodenal Switch

Roux-en-Y Gastric Bypass

Bariatric Surgical Procedures

Roux – en Y Gastric Bypass (RYGB)
And
Laparoscopic Adjustable Gastric Banding (LAGB)
are the most commonly performed procedures in the US

Effectiveness of Bariatric Surgery

• Weight loss
• DM
• Fertility
• Energy
• Others
Effectiveness of Bariatric Surgery

• Weight loss - Gastric bypass (RYGB)
  – Rapid in first six months: 10-15 pounds per month
  – Then slow down: 5-7 pounds per month
  – Lose 70-80% of excess weight at two years

Effectiveness of Bariatric Surgery

• Weight loss – lap band (LAGB)
  – Slow and steady weight loss
  – Lose 40-45% of initial excess weight at two years

Effectiveness of Bariatric Surgery

• Type 2 DM
  – Bariatric surgery is one of the best treatments for type 2 DM

Complication and Management after Gastric Bypass

• Prevention
  • Appropriate Patient selection
Complications

• Mortality
• Rehospitalization

Complications

• With malabsorptive procedure
  • Jejunoileal bypass
  • Biliopancreatic diversion and duodenal switch

• With restrictive procedure
  • Vertical banded gastroplasty

Complications

• With laparoscopic adjustable gastric band
  • Acute stomal obstruction
  • Band erosion
  • Band slippage/prolapse
  • Tubing malfunction
  • Pouch/esophageal dilation
  • Esophagitis
  • Infection

Complications

• With gastric bypass
  • Venous thromboembolism
  • Leaks
  • Bleeding
  • Gastric remnant distension
  • Wound infection
  • Stomal stenosis
  • Marginal ulcer
Complications

• Cholelithiasis
• Ventricular incisional hernia
• Internal hernias
• Metabolic, nutritional derangement
• Failure to lose weight and weight gain
• Depression

Clinical Presentation

• Nausea, vomiting following Gastric Bypass

Clinical Presentation Continued

• Abdominal pain Following Gastric Bypass:
  – Gastrojejunal stricture: < 3 months after surgery, epigastric, < 10 minutes from meal
  – Marginal Ulceration: < 3 months after surgery, Mid epigastric, radiate to the back, no relation to meals
  – Biliary disease: 6 months after surgery, Epigastric/Right upper quadrant, Hours after meals
  – Internal Hernia and bowel obstruction: > 1 year after surgery, left upper quadrant; 10 min after meal

Clinical Presentation Continued

• Constipation: Any time, left lower quadrant, no relation to meals
Management

- Phase one – (1-6 weeks)
- Phase two – (7-12 weeks)
- Phase three – (13 weeks – 12 months)

Phase One

- Surgeon handles complication
- Early diet

Phase Two

- Prolonged vomiting
- Dumping syndrome
- Long term eating habits

Phase Three

- Cholelithiasis
- Small bowel obstruction
- Band erosion
- Band slippage
- Nutrition deficiency
- Secondary hyperparathyroidism
Centers of Excellence

- Multispecialty consultants
- Nutritional, behavioral, medical program
- Follow up 75% of post surgical patients long term out to 5 years
- 384 facilities: few
- 660 surgeons
- 250,000 procedures by 2010
- PCP to follow up patients

Monitoring

Frequency: How often

- Every 4-6 weeks x 6 months until rapid weight loss is diminished
- After 6 months
- Every 12 months

Monitoring

What to check

- Weight
- BP
- Medication: DM, HTN, GERD, Asthma

Monitoring

What to check continued

- CBC, electrolytes, BUN, creatinine, albumin, protein, liver transaminase, alkaline phosphatase
- If alkaline phosphatase are elevated, parathyroid hormone should be measured
- Patient with abnormal parathyroid hormone level needs periodic bone density
Monitoring

What to give
Patients should receive

• Vitamin B12 IM 1000 mg q month life long or sublingual 1000-2000 mg of vitamin B12 daily
• Daily multivitamin life long containing water soluble B1, B2, B3, B6, B 12, folate, vitamin C, and fat soluble A, D, E, K

• Multivitamin supplement should contain 800 IU of vitamin D
• Calcium supplement: 1200-1500 mg daily
• Iron supplement if at risk for iron deficiency

Summary

• The 2 main bariatric surgeries performed in the USA are Roux-en-Y gastric bypass and laparoscopic adjustable gastric banding
• Indication for bariatric surgery BMI>40, >35 with comorbid condition
• Management: keep in mind complications: VTE, Cholelithiasis, depression, weight regain and metabolic and nutritional derangement
• Remember: Nutrition, nutrition, nutrition