Morbid Obesity in Obstetrics and Gynecology
An Expanding Problem
Obesity

- Epidemic in the modern world
- Major cause of cardiovascular disease, diabetes and renal disease
- No effective long-term medical therapies
- Surgery is the only effective therapy
  - Weight loss plus resolution of complications
- Continues to be a strong predictor of morbidity/mortality
  - Framington cohort → equivalent to smoking in terms of years of lost life
Definition of Morbid Obesity

- BMI > 35
  - With end organ effects

- BMI > 40
  - Absolute number
Obesity

- Now more prevalent than malnutrition
- Continues to rise
  - Fastest rate = severely obese
- USA
  - 8 -10% of women
  - 5% of men
- Accounts for 5% of total US health care costs
  - $60 billion/year
Indirect cost: $47.6
Direct cost: $51.6

Total cost: $99.2

63% of total cost is attributed to Diabetes.

- Diabetes: 63%
- Cancer: 14%
- Gallbladder disease: 8%
- Hypertension: 5%
- Osteoarthritis: 4%
- Coronary heart disease: 3%
Obesity Trends* Among U.S. Adults

BRFSS, 1985

(*BMI ≥30, or ~ 30 lbs overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults

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BRFSS, 1992

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Obesity Trends* Among U.S. Adults

BRFSS, 1999

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BRFSS, 2000

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Obesity Trends* Among U.S. Adults

BRFSS, 2001

(*BMI ≥30, or ~ 30 lbs overweight for 5’ 4” person)
Medical Complications of Obesity

- Hypertension
- Type II diabetes
- Dyslipidemia
- Obstructive sleep apnea
- Hypoventilation
- Hypertrophic cardiomyopathy
- Gallbladder disease
- Degenerative arthritis
- Psychosocial impairments
- Cancer
Obesity Surgery

Surgical Techniques

1. Gastric restrictive procedures
2. Malabsorptive procedures
3. Combination procedures
Obesity Surgery

Complications

- Nausea and vomiting
  Watch for stitches/stomal stenosis
- Dehydration
- Dumping Syndrome
  Result of fluid shift from interstitial tissues to the intestinal lumen
- Food intolerances
- Micronutrient deficiencies
Bariatric Surgery

- 1954 - Jejunoileal bypass
  - Join proximal jejunum to distal ileum
    - Secretory diarrhea

- 1976 - Bilio-Pancreatic Division (BPD)
  - Limited gastrectomy and long Roux-en-Y with short distal ileum
    - Significant protein malnutrition

- 1988 - Hybrid BPD
  - Greater curvative gastrostomy and long Roux-en-Y duodenojejunostomy
    - Reduced ulcers/dumping
Bariatric Surgery

- 1994 - Modern Roux-en-y gastric bypass
  - Gastric pouch 30 ml
  - Transection of stomach
  - Narrow gastroenterostomy
  - Roux-en-Y

- 1993 – Banding
  - Laparoscopic adjustable gastric banding
    - Via injection port
Bariatric Surgery

- Increased numbers!
  - 80,000 in 2002
  - 120,000 in 2004
  - >200,000 in 2006
- $25,000 per procedure
- 2005 $3 billion/year
Effects of Surgery on Complications

- **Hypertension**
  - 1% decrease in body weight
    - 1 mm Hg systolic bp
    - 2 mm Hg diastolic bp
  - Sugarman – 1000 patients – 2003
    - 68% resolution at 1 year
    - 66% resolution at 7 years
  - Swedish Obesity Study
    - No change in 2 and 10 year incidence rate
      - Net weight loss @ 2 years = 23.4%
      - Net weight loss @ 10 years = 16.1%
  - Buchwald Meta-analysis
    - 62% resolution
    - 78% significant improvement
Effects of Surgery on Complications

- **Type 2 Diabetes**
  - Buchwald 2005
    - Meta-analysis 136 trials
    - Resolution of Type II Diabetes Mellitus in 78%
      - 98.9% - BPD
      - 83.7% - gastric bypass
      - 47.9% gastric banding
  - Pories et al 2003
    - 146 gastric bypass patients
      - Type II diabetes mellitus
        - Remained resolved in 83% after 14 years
      - Impaired glucose tolerance
        - 99% after 14 years
  - Swedish Obesity Study
    - 10 year case – controlled study of banding procedures
      - 72% at 2 years
      - 36% at 10 years
Effects of Surgery on Complications

Metabolic Syndrome
- AKA – insulin resistance syndrome, syndrome X, obesity syndrome
- Components
  - Visceral obesity, HTN, insulin resistance, microalbuminuria, inflammatory and coagulation activation
  - Cure rate 99% after 14 years
- Sleep Apnea
  - Sugarman
    - All improved/cured
  - Buchman
    - 85.7% resolution, all improved
- Degenerative Joint Disease
  - Improves symptoms
  - Brings morbidly obese into safe zone for arthroplasty
Roux-en-Y stomach bypass: large portion of stomach and duodenum are bypassed.
Psychological Considerations

Friedman 1995

- BMI is associated with:
  - Body dissatisfaction
  - Body distortion
  - Self-consciousness
  - Depression (young females)

- Why these Problems?
  - Prejudice and discrimination
  - Laughter and ridicule
Psychological Considerations

- Treatment Options
  - Education
    - Nutrition
    - Exercise
    - Coping strategies
  - Evaluation before/after surgery
  - Behavior Modification
Only 2 drugs approved by the FDA
- Sibutramine (Meridia)
  - Inhibits NE and serotonin uptake
  - Antidepressant
  - Recent double-blind placebo controlled trial
    - 3.6% reduction in BMI; controls 0.9% reduction
  - Earlier double-blind placebo controlled trial
    - 63% had reduction in BMI of at least 5%
- Orlistat (Xenical)
  - Gastric and pancreatic lipase inhibitor
  - Inhibits triglyceride absorption – 30%
  - Recent trial
    - Mean weight loss over 6 months
      - 3.75 kg
Effects of Obesity on Women

1. Anovulation
   1. Large amount of estrogen from adipose tissue

2. Dysfunctional Uterine Bleeding
   - Excessive estrogen
   - Thicker uterine lining
   - Risk of endometrial cancer

3. Birth Control
   - Limitations of currently available contraception
Effects of Obesity on Women

4. **Pregnancy Risks**
   - Late care
   - Gestational diabetes
   - Hypertensive disorders
   - Macrosomia
   - Placental insufficiency
   - Trauma at delivery
   - Meconium
   - NICU admissions
   - Increased NTD/CHD
   - Anesthesia and surgery

5. **Surgery – GYN or OB**
   - Technical aspects
   - Anesthesia aspects
   - DVT’s
   - Post-op care
Conclusions

- Obesity ceilings unknown
- Many patients will have bariatric surgery
  - Understand complications and how to treat
- Gyn or OB surgery is difficult
  - Anesthesia
  - Procedures/instruments
  - Skin Incision
  - Post op care
- Modify gyn exams based on risk factors
- Modify OB care
QUESTIONS?