## Agenda

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<td>2:00 – 2:05 p.m.</td>
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<td>Obesity in Obstetrics and Gynecology: Protocols for Management</td>
<td>Dr. Robert K. Silverman</td>
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<td>2:25 – 2:45 p.m.</td>
<td>Obstetric Bariatric Project</td>
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<td>Hospital Questions</td>
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<td>Next Steps</td>
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Obesity in Obstetrics and Gynecology:
Protocols for Management

Robert K. Silverman, MD
Professor and Chairman
Department of Obstetrics and Gynecology
SUNY-Upstate Medical University
Syracuse, New York
Disclosure

• I have no conflicts of interest to disclose
Scope of the Problem

• Prevalence of obesity in the U.S. has doubled in the last 25 years
  • 30% obesity rate
  • 55% overweight

• Expected rate of obesity 46% in 2030

• Higher rate in Hispanic and African-American populations

• Associated with increased morbidity and mortality
  • Cancer
  • Cardiovascular disease
  • Diabetes
  • Birth defects
  • NICU admissions
  • Cesarean section
Obesity

• Definition:
  – Most cases are due to:
    • Eating too much
    • Moving too little

• Rarely due to genetics, medical conditions or medications
Prevalence of Self-Reported Obesity Among U.S. Adults
BRFSS, 2011

The map illustrates the prevalence of obesity across different states in the U.S. using a color-coded scheme where:
- Light gray: 15% - 20%
- Light green: 20% - 25%
- Light yellow: 25% - 30%
- Dark yellow: 30% - 35%
- Dark red: ≥35%

States with higher percentages of obesity are shaded in darker colors, whereas states with lower percentages are shaded in lighter colors.
Health Risks Associated with Obesity

- Heart disease and stroke
- Diabetes
- Cancer
- Gallbladder disease
- GERD
- Osteoarthritis
- Respiratory issues
  - Sleep apnea
  - Asthma
  - Hypoventilation syndrome
- Infertility
Does Bariatric Surgery Reduce Lifetime Health Costs?

1696 veterans ½ surgery, ½ controls

• 3 years prior to surgery----$595 lower
• 6 months prior to surgery and up to the procedure--$28,400 higher
• 3 years post surgery--------$4,397 higher

Conclusion: Bariatric surgery was not significantly associated with lower health care expenditures

Archives of Surgery 2012
Obesity and Pregnancy

• Complications possible in pregnancy are impressively high and include:
  – Higher rate of birth defects
    • Sonographic evaluation compromised
  – Difficulty in performing diagnostic procedures
  – Higher rate of obesity related medical conditions
    • Diabetes, hypertension, preeclampsia, prolonged pregnancy
  – Increased risk of stillbirth in the 3rd trimester
  – Increased rate of cesarean section and lower success rate in VBAC (inversely related to BMI)
  – Increased risk of surgical complications
    • Anesthesia, increased time in OR, hemorrhage, DVT, infection
  – Increased risk of shoulder dystocia
  – Higher rate of NICU admission and neonatal complications
Obesity and Birth Defects

• Pooled data on 18 studies and review of 39 other studies
• Conclusions:
  – Obesity increases the risk of the following
    • Spina bifida------------------2 fold increased risk
    • Cardiovascular------------------30% higher
    • Cleft lip/palate----------------20% higher risk
    • Ventriculomegaly-------------60 % higher risk
    • Limb reduction defects---30% higher
• Etiology unknown
  – Vitamin deficiencies
  – Undetected Type II Diabetes

• JAMA, Feb 2009
Checklists for Care of Obese Patients

• Allows standardization of care
• Allows accurate task completion
• Has a fundamental role in error management
• Requires formation of expert panels and repeat pilot-testing of preliminary checklists
Morbid Obesity Checklist—Obstetrical Patients

1. Calculate BMI
   - Measure waist circumference
2. Risk Assess
   - Diabetes
   - Hypertension
   - Cancer
   - Sleep apnea
   - Stress incontinence
   - Infertility
   - Depression
3. Counsel on diet & exercise
   - Nutritional consult
4. Health History
   - Weight history
   - Weight loss efforts
   - Exercise habits
   - Eating patterns
   - Stress levels
   - Dietary log book
5. Lab studies
   - Cholesterol/lipid panel
   - Liver function tests
   - Micronutrient deficiencies, if bariatric surgery
     - B12, folate, B6, iron, Vitamin D, calcium
   - Fasting glucose
   - Thyroid function tests
   - CRP?
6. Contraceptive counseling
   - Prior to delivery
   - 6 week post-partum visit
Checklist for Surgery in Morbidly Obese Patients

- Anesthesia consult
- Medical clearance
  - Copy of recommendations regarding patient care
  - Copy of current medications
  - Copy of reports from all recommended testing
- Pulmonary function evaluation, if asthma or hypoventilation syndrome
- Hospital site
- C-PAP/BI-PAP machine with patient
- Preop discussion regarding complications
  - OB patients--- complications to newborn
  - Wound Infection
  - DVT/PE
  - Surgical complications
    - Injury to other organs
    - Inability to perform the procedure
- Preop Order set
  - Perioperative antibiotics
  - DVT prophylaxis
  - Order bariatric OR and post op room
  - Order bariatric instruments/retractors
  - Book bariatric postop bed
  - Order extra large compression stocking
- Bariatric post op order set
  - Early ambulation
  - DVT prophylaxis
  - Incentive inspirometry
  - Screen for post op depression in OB patients
    - Edinburgh Depression Scale
  - Infection screening
Conclusions

• Obesity is a fact of life and will be a major focus of medical care in all specialties

• We must discuss obesity as a component of our health care assessment and not avoid the opportunity to educate our patients

• We must develop checklists for care to maximize outcomes and improve patient safety
  • Outpatient
  • Inpatient
Obstetric Bariatric Project
James Bernasko, MD
Adriann Combs, RN
We have no conflicts of interest to disclose.
• Impetus for Change
• Taskforce Charge
• Taskforce Findings
• Measures Implemented
Obesity among women of childbearing age

New York, 2001-2011

Percent of women ages 18-44

Note: Data after 2010 are not comparable to earlier years due to methodological changes. Details: see calculations page.
• Case Presentation
  – Case presented with discussion of relevant issues for each team
• Group Discussion
• Findings/Recommendations
• 31yo G4 P2012 presented to Labor and Delivery at 37 weeks for evaluation of preeclampsia
  – POBH: 2 uncomplicated NSVD’s
  – PMH: Type 2 DM, morbid obesity and asthma
    • Pre – pregnancy BMI 57
  – PSH: Cholecystectomy
  – PNC: Uncomplicated, sonogram prior to induction with EFW 3963 grams (8lb 10oz), GBS (-)
• Induction for mild preeclampsia with Cervidil (Bishop’s score <5) and magnesium sulfate therapy
• Labor course was notable for:
  – Cervidil followed by amniotomy and pitocin
  – Over two days the patient progressed to fully dilated
  – Light meconium
  – IUPC placement due to body habitus
  – Hydralazine administration required for BP control
  – Continuous spinal infusion for pain relief
• **Delivery:**
  - Altered fetal baseline with decreased to absent variability and recurrent decelerations
  - Kiwi vacuum delivery
  - After delivery of the head significant shoulder dystocia was appreciated
  - Delivery affected via McRobert’s, suprapubic, mediolateral episiotomy, second experienced assistant, delivery of the posterior arm
  - NICU present
  - Birthweight 4820 grams
• **Infant:**
  – Evidence of Neonatal Encephalopathy
  – Cord gas was 6.9/74/41/14/-17
  – Intubated, resuscitated transferred to NICU

• **Postpartum course:**
  – Complicated by infection and dehiscence of repair with readmission
  – Mastitis
  – Continued antihypertensive requirements
Issues Identified

- Shoulder Dystocia
- Preeclampsia
- BP monitoring
- Fetal and UA monitoring
- EFW/LGA
- Wound care
- Pain control
- Chorioamnionitis
- Meconium
- Physical layout/equipment
The patient is a 31y.o. female at term

- **PMH:**
  - Morbid obesity
  - DM
  - Class 3 airway on exam
- Difficult epidural placement resulted in intrathecal catheter placement
- **Access:**
  - IV dislodged when pushing with non-reassuring FHR tracing, IV replaced with difficulty
• Extremely difficult delivery secondary to severe shoulder dystocia, NICU team present

• Language barrier and commotion in delivery room made it difficult to assess adequacy of analgesia

• Anesthesia team was concerned that it would be necessary to rapidly obtain surgical level of anesthesia for either c/section or instrumental vaginal delivery and help was obtained to prepare for possible general anesthesia
• Airway
• Access
• Pain Control/Epidural Placement
  – Language barrier
• Physical layout/equipment
  – LDR vs OR
• Convened in response to increasing prevalence of extreme obesity
  – Current estimate based on 2008 data
    • 6% of deliveries (200 patient/year)
    • 5% of deliveries 2012 (200 patients/year)
• Multidisciplinary group
  – Ob, Anesthesia, MFM, RN, Hospital Leadership
• Objective:
  – Create guidelines and standardize treatment in this challenging patient population
BMI Calculator

Height (cm): 171
Weight (kgs): 66

Your BMI: 22.57

Calculate

Below 18.5 (Underweight)
18.5 - 24.9 (Normal)
25.0 - 29.9 (Overweight)
30.0 and Above (Obese)

Imperial

Obstetrical/Neonatal risks in the morbidly obese parturient:

- Associations begin in Class II
- Associations are strongest for Class III/Extreme

- **Pre-pregnancy:**
  - Infertility

- **1st/2nd Trimester/Screening Tests:**
  - Miscarriage
    - Spontaneous: OR 1.2
    - Recurrent: OR 3.5
  - Congenital Malformations
    - NTD: OR 1.8 – 2 depending on study
  - Screening Tests
    - Patients over 200lbs have higher MSAFP altering reliability
• **Ultrasound**
  – BMI > 40 has ~50% increased risk for suboptimal views (SUV) of cardiac structures and ~30% increased risk for SUV for spine
  • Repeated U/S reduces SUV rates but does not remove risk
  – No consistent differences in EFW’s by BMI
  – NT unclear effect at this point

• **Second/Third Trimester:**
  – Gestational Diabetes: OR 5
  – Preeclampsia: OR 3.5 – 5
  – Eclampsia: OR 3
  – Prematurity: OR 1.2 – 2
  – Postdates: OR 1.2 – 2
  – Induction: OR 3
• **Intrapatrum/Post Partum**
  – C/S: OR 1.8 – 2.9
  – Emergent C/S: OR 1.3
  – Shoulder dystocia: OR 2 – 5
  – VBAC rates: decrease from 84% in underweight to 55% in obese
  – DVT risk

• **Post Partum Complications:**
  – Wound infection: OR 2
  – Wound disruption
  – UTI: OR 1.4
  – Endomyometritis: OR 1.3
  – PPH: OR 1.2 – 2
  – Delayed discharge in Sleep Apnea
• Fetal and Neonatal complications
  – Stillbirth: OR 3 – 4
  – Meconium Aspiration: OR 1.5 – 5
  – Non Reassuring Fetal Heart Rate: OR 1.5 – 3
  – Low Apgar: OR 1.5 – 3
  – Early Neonatal Death: OR 1.5 – 5.6
  – LGA: OR 2 – 4

• Breastfeeding:
  – Breastfeeding rates at time of discharge: OR 0.5
• Infant/childhood risks:
  – Obesity: OR 2.6
  – Metabolic Syndrome: OR 2
  – Psychomotor development
    • Mean scores across general and non-verbal indices decrease as BMI increases
    • Verbal shows no difference
• Anesthesia Risks in the morbidly Obese Parturient:
  – Airway/Aspiration
    • Special positioning
  – Access
  – BP monitoring
    • Arterial lines
  – Pain management
    • Early epidural/Continuous spinal
    • Post operative
  – OSA
    • Assessment of adequacy of oxygenation
  – DVT prophylaxis
    • Timing of regional anesthesia
  – Operative deliveries
    • Time to delivery
  – Co-morbidities
Measures Implemented

- BMI Calculated at visits
- Preconception:
  - Patient education
  - Nutrition Consultation
  - Bariatric centers
    - Compiling referral information
  - Sleep apnea screening
    - Use of standardized screening tool
    - Compiling referral information

BMI = \frac{weight \ (lb) \times 703}{height^2 \ (in^2)}

OR

BMI = \frac{weight \ (kg)}{height^2 \ (m^2)} \ (metric)
Obstetrical Bariatric Task Force – Recommendations

• Post Conception:
  – Patient education
  – Nutrition Consultation
  – Early GCT and regular GCT
  – Sleep apnea screening

• 2nd Trimester:
  – Anesthesia Consult (referral protocol begin developed)
    • 2nd trimester for:
      – Pre – pregnancy:
        » BMI >45
        » BMI >40 with identifiable co-morbid conditions
      – Pregnancy Weight Gain:
        » >60lbs by 2nd Trimester
        » 80lbs total
    • IV Access:
      – PICC Lines for prolonged inductions
• Intrapartum/Postpartum:
  – DVT prophylaxis
  – Arterial lines
    • Preeclampsia
  – Equipment
  – Consider delivery on OR
  – BMI added to NICU protocol
  – Lactation consultation
Incisional Choice

FIGURE 1
Cephalad retraction

Large panniculus elevated/retracted upward with tape

Area of incision to be made in lower abdomen
Incisional Choice

**FIGURE 2**
Caudad retraction
Hospital Questions

Hospital Teams
Nancy Landor
Next Steps

Dr. Marilyn Kacica
Lorraine Ryan
Next Steps

**Data**
- Data reporting through HCS
  - April data due on *Wednesday, May 29*

**May Coaching Call**
- May, 21 2013 @ 11 a.m. E.T
Contact

**NYSPQC Project Team at DOH**
- Phone: (518) 473-9883
- Email: NYSPQC@health.state.ny.us

**NYSPFP Project Managers**
- Contact your hospital’s designated PM