Challenges in an Obese Pregnant Mother

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Definition

- Obesity is defined as pre-pregnancy body mass index (BMI) ≥30 kg/m2
  - class I (BMI 30.0 to 34.9 kg/m2)
  - class II (BMI 35.0 to 39.9 kg/m2)
  - class III (BMI ≥40 kg/m2)

- A pregnant woman's weight increases over a relatively short interval of time and much of this weight gain is related to accretion of matter that will be lost at delivery

Background

- In the US 34.4% of women aged 20-39y are obese (USNCHS 2011 – 2014) with the highest prevalence amongst non-Hispanic black women (56.9%); compared to 7% in 1980.

- The Pacific is the leading obese region in the world. Obesity prevalence ranges from more than 30% in Fiji to a staggering 80% among women in American Samoa (WHO Bulletin Volume 88:2010)

- Obesity in pregnancy has increased in concordance to the increase in the obesity in the general population.

Background

- In Fiji; "A retrospective clinical Audit of the impact of obesity on pregnancy outcomes in Lautoka Hospital Jan- Dec 2012 by Dr Vasitia Cati"
  - Prevalence of obesity in pregnancy was 20.57%
  - Average age of obesity was 28.8y
  - Those with BMI≥40kg/m2 and Fijians of Indian Descend were at a higher risk of adverse maternal and fetal outcomes
  - Compared to non obese pregnant women; there was a strong association between obesity and GDM ($p<0.0000$) PET ($p<0.000$) Shoulder dystocia ($p< 0.000$), PPH (0.000), Induction of Labour ($p<0.000$), prolong 2nd stage ($p<0.00$) Assited Vaginal Delivery ($p<0.01$) and augmentation of labour ($p<0.000$)

- “Adipose tissue is an active endocrine organ; when present in excess, it can have dysregulatory effects on metabolic, vascular, and inflammatory pathways in many organ systems, and thereby lead to a variety of reproductive and medical problems”. (uptodate)

CASE: S.N.

- 37yr primip
- Married x12yrs
- Domestic worker
- Form 5 level education
- PMH: nil known comorbidities
- Non smoker/No alcohol consumption

Antenatal Booking

- LMP 27th Nov 2016
- Booked at 27w3d (s)
- O+ve Serology -ve
- Booking examination – morbidly obese
- BMI 45 kg/m2 (wt 120kg ht 162cm)
- Hb 12.4
- OGTT 4.3 / 5.7
- BP 110/50

Antenatal Care

- Total 8 ANC visits (low risk clinic) – unremarkable
- BP profile 110/70 – 130/80
- SFH = 2-3cm above gestational age
- Fetal growth = normal (along 50th percentile)

Antenatal Care

- At 39w – c/o difficulty feeling baby movements
- Growth scan/AFI / EFW
  - Growth – above 90th percentile
  - MG 41w1d
  - AFI 10.6cm
  - EFW 4817g
- CTG –reactive
- Referred to HRC

Antenatal Care

- 22/5/17 Seen in HRC 39w3d
- BP 150/80 rpt 130/90
- Asymptomatic for PET; good FM
- Dipstick protein & glucose negative
- Abdo: 3/5 cephalic SFH 50cm
- Plan:
  - Counselled on labor and delivery plans
  - Increased risk of failed IOL, prolong labor, obstructed labor, operative delivery including cesarean
  - If ELCS – risk of PPH, PE, infection, will need prophylactic heparin, antibiotics cover and anaesthesia complications

Plan:

- Admit
- PIH bloods and BP profile
- Commenced on dexacortin
- Team discussion RE: mode of delivery
- Add to watch list

Inpatient

- Had 2x HTN crisis – stabilized with stat hydrallazine
- Boiled urine - cloudy
- Asymptomatic for PET
- Good fetal surveillance
- Examination – unremarkable
- Cx – 2cm dilated, soft, thick, 2cm long
- PET bloods – normal

Inpatient

Assessment:

- preeclampsia (late onset, slow progress at term)
- Respond well to stat dose hydrallazine
- No evidence of end organ damage
- Chance of NVD 60-70% if cervix is favourable and good fetal surveillance, Normal OGTT, good gestational data, good CTG and good growth
- Risk of SB in view of 11y hx of infertility

Inpatient

Plan

- t/out to 1st stage labor ward for close monitoring
- Withold mgso4
- Complete dexacortin
- Counseled for delivery (CS vs TOL with associated risks and complications for each MOD)
  - Pt refused CS and thus was induced with folleys

24/5/17

- Folleys tug out
- VE: 4cm dilated; fully effaced cx, vx st-2, MI
- ARM – moderate meconium and lots of liqour
- Post ARM CTG – R

Plan:

- Prep for EMCS
- FBC/XM

Intraop and Immediate postop

- LSCS
- Moderate meconium
- Male infant delivered with forceps lift-out
- Bwt 4.2kg
- Placenta – normal and complete
- EBL 500ml
- thromboprophylaxis Heparin 7500u sc bd
- SSI risk thus triple antibiotics
- BP profile
- For early mobilisation

Post op 25/5/17

D1 post op

- BP 130/80
- Asymptomatic for PET
- COD done
- Lochia minimal
- Lactation not well established – BF nurse to see
- Physiotherapist to assist with mobilization

D4 post-op

- BP 120/80
- Good lactation
- Minimal lochia
- Wound – serous discharge with minimal pus

Plan

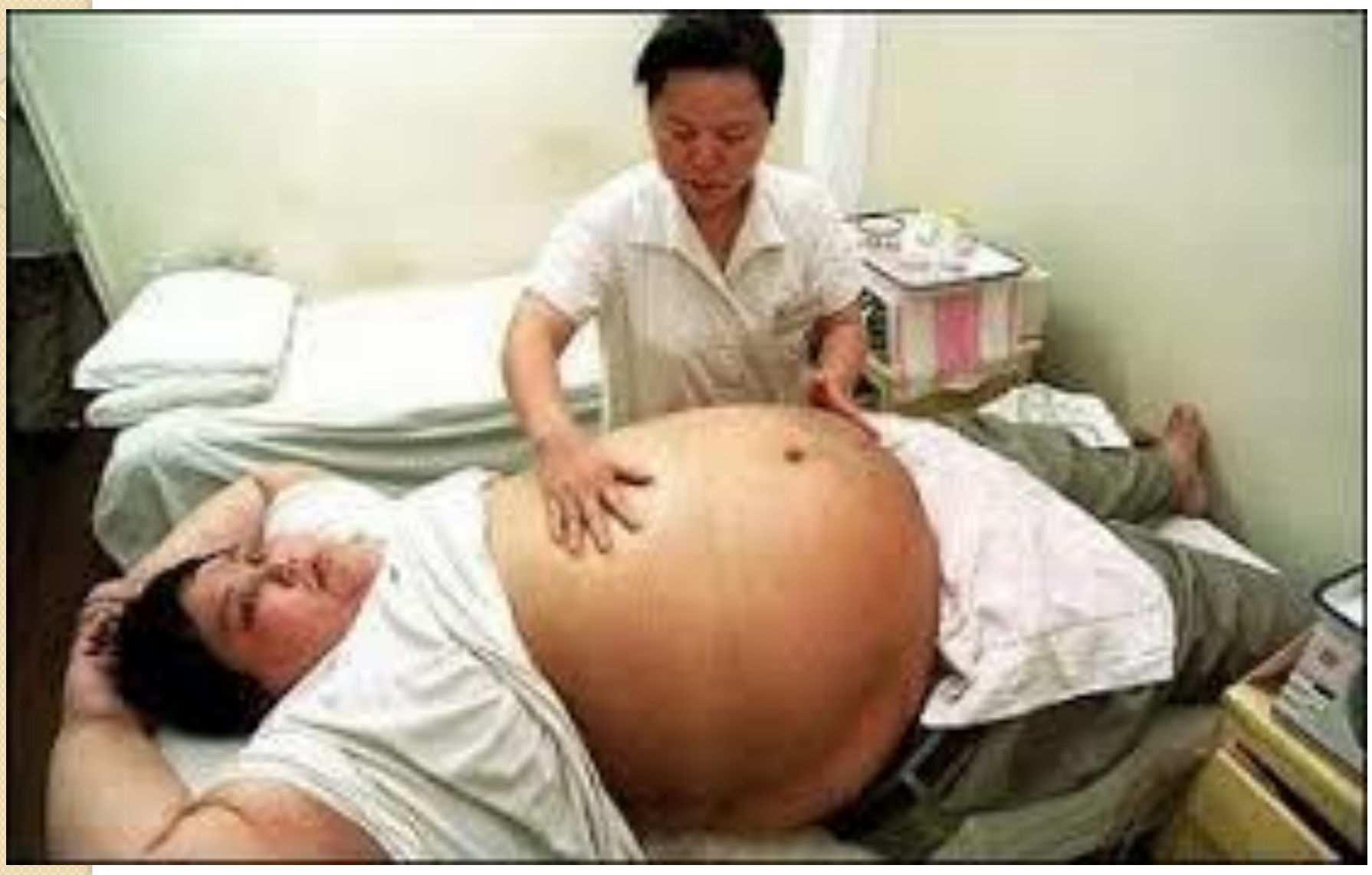
- Wound slightly opened and debrided
- TDS saline dressing and to continue triple antibiotics
- Off Anti-HTN meds

D10 post op

- BP 110/70
- Lochia stopped Lactation – good
- Wound is clean; allow to heal by secondary intention
- Counseled on FP (LARC) – patient opted for Jadelle
- Jadelle was inserted and patient was discharged
- Baby – well postpartum

Summary

- 37y primip
- Infertility x11yrs
- Morbid obesity BMI 45kg/m2
- Macrosomia
- Difficulty feeling fetal movements
- Developed PET
- Counseling on ELCS or TOL
- EMCS
- Developed wound infection postop
- Had jadelle for FP



POTENTIAL ISSUES IN PREGNANCY

- ANTEPARTUM
  - Early pregnancy loss
  - Occult type 2 diabetes
  - Gestational diabetes
  - Pregnancy associated hypertension / preeclampsia
  - Indicated and spontaneous preterm birth
  - Post-term pregnancy
  - Multifetal pregnancy
  - Obstructive sleep apnea
  - Carpal tunnel syndrome

POTENTIAL ISSUES IN PREGNANCY

- INTRAPARTUM
  - Labor Induction (induction failure)
  - Progress of labor (prolong 1st /2nd stage)
  - Cesarean delivery
  - TOLAC vs RECD
  - Difficulties with anaesthesia
  - Complications related to macrosomia
    - Shoulder dystocia
    - Dysfunctional labor
    - Operative intervention
    - Maternal genital tract laceration
    - PPH

POTENTIAL ISSUES IN PREGNANCY

- POSTPARTUM
  - Venous thromboembolism
  - Infection (wound, episiotomy, endometritis)
  - Postpartum depression

POTENTIAL ISSUES IN PREGNANCY

- OFFSPRING
  - Congenital anomalies (NTD, Cardiac malformations, etc)
  - Asphyxia and death (FD, SB, PND, NND, ID)
  - Prematurity
  - Large for gestational age
    - Shoulder dystocia
    - Predisposition to obesity later in life
  - Asthma
  - Childhood obesity (2-3 fold if 1parent is obese; 15fold if both)
  - Neurodevelopmental and psychiatric disorders (congnitive impairment, autism, ADHD, anxiety and depression, schizophrenia, eating disorders, CP)

PREPREGNANCY MANGEMENT

- PRECONCEPTION COUNSELING, EVALUATION AND CARE
  - Information about adverse effects of obesity on fertility
  - Information about potential pregnancy complications associated with obesity
  - Evaluate for obesity-associated medical comorbidities with appropriate intervention and optimize maternal health status
  - Counseling about benefits of weight loss before attempting to conceive

- PREPREGNANCY WEIGHT LOSS
  - Diet, exercise, behaviour modification, medical therapy and bariatric surgery

PREGNANCY MANAGEMENT

- I ST TRIMESTER

  Baseline assessments
  - Maternal weight and BMI
  - BP (appropriate cuff)
  - Early USS to establish gestational age/multifetal gestation
  - Medication review
  - Diabetes screening & baseline bloods(FBC/UECr/ LFTs)
  - Counseling on potential pregnancy risks, diet, recommended gestational weight gain and exercise
  - Fetal aneuploidy screening
  - Referral to sleep specialist and dietician

PREGNANCY MANAGEMENT

- 2ND TRIMESTER
  - Low dose aspirin (81mg)
  - Fetal ultrasound survey (fetal anomaly scan)
  - Screening for gestational diabetes

- 3RD TRIMESTER
  - Assessment of fetal growth
  - Assessment of fetal well-being
  - External cephalic version

PREGNANCY MANAGEMENT

- LABOR AND DELIVERY
  - Equipment and instruments
  - Fetal monitoring
  - Anaesthesia consultation
  - Timing and route of delivery
  - Cesarean delivery
    - Thromboprohylaxis
    - Antibiotic prophylaxis
    - Technical issues
    - Postpartum (postop care; BF; FP; GDM screening 6-12w post delivery for glucose intolerance; support for achieving healthy BMI)

Reference:

1. United States National Centre Health Statistics 2011 – 2014
2. Obesity and Overweight. WHO. Fact Sheet No. 311. March 2013.
3. Bulletin of the World Health Organisation; Volume 88, Number 7, July 2010, 481-560
4. The impact of obesity on pregnancy outcomes at Lautoka Hospital from Jan- Dec 2012: A retrospective clinical Audit; Dr Vasitia Cati
5. www. Uptodate.com; Obestity in pregnancy: complications and maternal management