Unit 2: Obstetrics
Section C: Procedures

Educational Topic 32:
Obstetric Procedures

Rationale: Abnormalities of fetal growth carry increased risks for morbidity and mortality. Monitoring fetal growth is an important aspect of prenatal care.

Intended Learning Outcomes:
A student should be able to:

• Describe the key components of pre-operative evaluation and planning, including history, physical examination, and informed consent (including risks, benefits, and alternatives)
• Describe common measures for the prevention of infection, deep venous thrombosis and other peri-operative complications
• Describe key components of postoperative care
• Discuss common post-operative complications
• Describe the communication of operative findings and complications to patient and family.
• Describe common outpatient and inpatient obstetrical procedures with their indications and possible complications:
  1. Ultrasound
  2. Amniocentesis and Chorionic villous sampling
  3. Intrapartum fetal surveillance
  4. Induction and augmentation of labor
  5. Spontaneous vaginal delivery
  6. Vaginal birth after Cesarean delivery
  7. Operative vaginal delivery
  8. Breech delivery
  9. Cesarean delivery
  10. Postpartum tubal ligation
  11. Cerclage
  12. Newborn circumcision
TEACHING CASE

CASE: A 26 year old, G3P2002 woman presents to Labor and Delivery with a complaint of frequent, painful uterine contractions and leaking of fluid. She has been getting prenatal care through your clinic and review of her records shows her to be 36 6/7 weeks with a spontaneous dichorionic/diamniotic twin pregnancy. She has had an uncomplicated pregnancy to date, with the exception of obesity. She is 5’ 4” tall and weighs 220 pounds, giving her a BMI of 37.8 kg/m$^2$. Your evaluation reveals the patient to be 8 cm dilated, fully effaced, and +1 station. Although, the membranes are ruptured, you are unsure of the presenting part. The fetal heart rate tracings for both twins are reported to be Category 1. During your evaluation, the patient repeatedly tells you that she really wants to deliver these twins vaginally because she delivered both of her prior babies vaginally, and doesn’t want to be slowed down by the recovery from a Cesarean.

COMPETENCY-BASED DISCUSSION & KEY TEACHING POINTS:
Competencies addressed:
- Patient Care
- Medical Knowledge
- Interpersonal and Communication Skills
- Professionalism
- Systems-Based Practice

1. Is this patient a candidate for a vaginal delivery of her twins? What additional information do you need to make that decision?
   - The key factors which should be considered in determining delivery approach are:
     - Fetal presentation – only vertex/vertex twins or vertex/non-vertex twins should be considered for vaginal delivery.
     - Gestational age / Fetal size – If vertex/non-vertex, then twin B should be no more than 25% larger than twin A (based on weight discordance)
     - Operator experience
     - Assuming adequate operator experience, the fetal presentation is best determined by ultrasound.

2. You confirm that the patient is indeed a good candidate for vaginal delivery. What are the complications that this patient may encounter during her delivery?
   - Intrapartum persistent Category 2 or Category 3 fetal heart rate tracings
   - Umbilical cord prolapse
   - Cesarean delivery
   - Postpartum hemorrhage
   - Shoulder dystocia
3. What pre-delivery preparations can you make to minimize these risks for the patient?

Considerations for the intrapartum management of multiple gestations may include the following:

- A secondary or tertiary care center to assure availability of anesthesia and neonatal services
- A delivery room equipped for immediate cesarean delivery, if needed.
- A well-functioning large-bore intravenous line for rapid administration of fluids and blood.
- Blood availability for transfusion.
- The capability to continuously monitor the fetal heart rates simultaneously.
- An anesthesiologist who is immediately available to administer general anesthesia should intrauterine manipulation or Cesarean delivery be necessary for delivery of the second twin.
- Two obstetricians scrubbed and gowned for the delivery, one of whom is skilled in intrauterine manipulation and delivery of the second twin.
- Imaging techniques (i.e. sonography) for determining the precise presentations of the twins.
- Adequate newborn staff to assist in immediate resuscitation and care of the infants.

4. The patient achieves the 2nd stage of labor and progresses well to deliver the first infant without complication. You perform an assessment for the presentation of the 2nd twin and find it to be breech. What are your options for delivering the 2nd twin?

   - If adequate fetal surveillance can be maintained and is reassuring, there is no urgency in accomplishing delivery of the 2nd twin. Options for management include:
     - Option 1: Cesarean delivery
     - Option 2: External cephalic version and vaginal delivery
     - Option 3: Internal podalic version and vaginal breech extraction

5. You proceed with attempting vaginal delivery of the 2nd twin. While waiting for the 2nd fetus to progress in labor, you notice the onset of heavy vaginal bleeding. The fetal heart rate tracing becomes a persistent Category 2 and you perform a Cesarean delivery. What measures can you take intra-operatively to prevent complications from the Cesarean?

   - Intra-operative antibiotics for surgical prophylaxis
   - Sequential compression devices for thromboembolic prophylaxis
   - IV oxytocin for uterine atony prophylaxis
   - Additional uterotonic available for treatment of persistent uterine atony

6. You complete the cesarean successfully, but note that the patient had an estimated blood loss of 1500 mL, probably due to an abruption. What measures can you take post-operatively to assess for and diagnose complications?

   - Physical examination, including review of vital signs (pulse, blood pressure, oxygen saturation, urine output), is most useful
   - Post-operative hematocrit, and serial assessments if clinically indicated
   - If patient is Rh negative – quantification of feto-maternal hemorrhage with Kleihauer-Betke
   - Venous thromboembolism prophylaxis
REFERENCES


ACOG Practice Bulletin 17, Operative Vaginal Delivery, June 2000 (reaffirmed 2014).