# Multiple Gestation

*Multiple gestations account for 1 in 90 births and are commonly associated with two complications: breech presentation and prematurity; anesthesia may be necessary for version, extraction, or c-section*

**ANESTHETIC CONSIDERATIONS:**

- Considerations of pregnant patient: physiologic changes plus two fetuses
- Exaggerated maternal cardiopulmonary changes
- Management of twin delivery
- Abnormal presentation of fetus (transverse, breech)
- **Increased risk** of antepartum & postpartum hemorrhage
- **Increased risk** of fetal distress (cord prolapse) and prematurity
    - 2nd neonate (and subsequent) more asphyxiated / depressed often requiring resuscitation
- NICU setup for two neonates

**ANESTHETIC GOALS:**

- Early labor epidural analgesia
- Maintain maternal hemodynamics / oxygenation / perfusion
- Anticipate postpartum hemorrhage and prevent / treat as required

**HISTORY**

- Obstetrical history
- Fetal history: number of gestations, GA / viability, pulmonary maturity
- Symptoms of ACC / SHS: N/V, pallor, sweating

**PHYSICAL**

- **GENERAL** - VS
- **HEENT** - assess airway
- **CVS** - volume status: JVP, postural VS, u/o
- **OBS** - abdominal exam to determine relative positions of both gestations (malpresentation increases risk of umbilical cord prolapse)

**INVESTIGATIONS**

- **Labs**
    - CBC, G&S
- **Imaging**
    - FHR x 2 (can use scalp monitor for twin A, external monitor for twin B)
    - U/S to help diagnose presentation of twins

**OPTIMIZATION**

- Method of delivery depends on gestational age & position of Twin A
- Indications for C-section specific for multiple gestations:
    - > 3 gestations
    - Twin A in breech or shoulder presentation
        - NB: Twin A breech / Twin B vertex is a cause of twin locking
    - Discordant growth (B >> A)
    - Twin-twin transfusion
    - Congenital abnormalities
    - Uteroplacental insufficiency
    - ER: unanticipated head entrapment, deflexed head, or locking
- Delivery of twin B:
    - If vertex:
        - Head well applied: SVD
        - Head not well applied: SVD or version w/ total breech extraction
    - If non-vertex:
        - Version to allow SVD or total breech extraction, or c-section
- Interval between deliveries does not affect outcome for twin B, however in general, there is an ↑ uterine incision to delivery time
- Early epidural labor analgesia
- Epidural better than spinal for delivery
    - Ability to prolong duration

**ANESTHETIC OPTIONS**

- Neuraxial
    - Epidural, spinal or CSE
    - Consideration of prolonged duration due to multiple deliveries (CSE or epidural vs. one-shot spinal)
    - Epidurals decrease need for CNS depressants during labor
    - May shorten the period between birth of the first and second baby
    - Some studies suggest that the acid-base status of the second twin is better with epidural anesthesia
- GETA

**ANESTHETIC SETUP**

- **Drugs**

    - Standard emergency drugs
    - Oxytocin, hemabate
    - NTG
- **Equipment**
    - Standard CAS monitors
    - Large bore IV (risk of atony/PPH)

**MANAGEMENT OF ANESTHESIA**

- **Induction**
    - As for any obstetric patient
    - Set up for 2 neonates
    - Special attention to LUD / looking for symptoms of aortocaval compression / SHS
- **Maintenance**
    - Epidural topped up to T6 at time of twin A delivery in case of need for emergency c-section for twin B
    - Twin B generally does better if delivered under regional (vs. general) anesthesia
- **Emergence**
    - Nil

**DISPOSITION & MONITORING**

- Watch for post partum hemorrhage / uterine atony
- NICU / nursery for twins

**COMPLICATIONS**

- Maternal:
    - PROM
    - Preterm labor
    - Prolonged labor
    - PIH
    - Placental abruption
    - DIC
    - Operative delivery
    - Uterine atony
    - OB trauma
    - APH &/or PPH
- Fetal:
    - Preterm delivery
    - Congenital abnormalities
    - Polyhydramnios
    - Cord entanglement
    - Umbilical cord prolapse
    - IUGR
    - Twin-twin transfusion
    - Malpresentation
    - Increased morbidity/mortality

**PATHOPHYSIOLOGY**

- Monozygotic vs. dizygotic
- Placenta: 4 combinations
    - Monozygotic monoamniotic
    - Monozygotic diamniotic
    - Dichorionic diamniotic
    - Dichorionic diamniotic
- Monochorionic placentas = ↑ risk from ↑ vascular communication b/t twins:
    - Twin-twin transfusion syndrome
        - Donor twin: smaller, anemia, IUGR
        - Recipient twin: plethoric, volume overload, CHF
        - Treatment: decompression amniocentesis, vessel interruption
    - Intrauterine death
    - Cord accident
- Presentation:
    - 30-50% vertex-vertex → trial of labor
    - 25-40% vertex-breech → controversial
    - Remainder have a combination of vertex/breech/transverse lie

**REFERENCES**


- Lange – 3rd pp 834-5