

Obstetric Antepartum Hemorrhage, >20 weeks gestation

Placenta Previa

Definition: Placenta that extends near (marginal previa), partially over (partial previa), or beyond the internal cervical os (complete previa)

Patho: Bleeding occurs with marginal placental vessels implanted are torn, either when the uterine wall elongates, or with cervical dilation.

Risk factors: c-section, multiple uterine surgeries, advanced maternal age, minority, cigarette smoking, cocaine use, prior miscarriages, induced abortions, preterm labor

Clinical features: "painless, fresh bright red vaginal bleeding", some uterine irritability
-Most cases resolve by the time of delivery, 20% of cases can cause severe hemorrhage with risk of exsanguination for fetus and mother.

IMPORTANT: DO NOT perform speculum vaginal exam, until normal placental position confirmed by ultrasound. A Bimanual exam should only be done in the presence of obstetrics or surgical back-up.

Diagnostics: ultrasound, CBC, Rh, type and screen, coagulation studies, cardiotocographic monitoring

Management: OB consult ASAP, large bore IVs and maternal stabilization with fluid and blood resuscitation, fetal monitoring. Rhogam, if needed. Corticosteroids given at less than 34 weeks of gestation will promote fetal lung maturity, and reduce the duration of mechanical ventilation. Betamethasone and dexamethasone can be used.

Placental Abruption

Definition: Premature separation of normally implanted placenta from uterine lining. Accounts for 30% of bleeding during 2nd half of pregnancy, 10% preterm births, and 10-20% of perinatal death

Mild: milder uterine tenderness, no or mild vaginal bleeding, normal maternal vital signs, no coagulopathy, no fetal distress

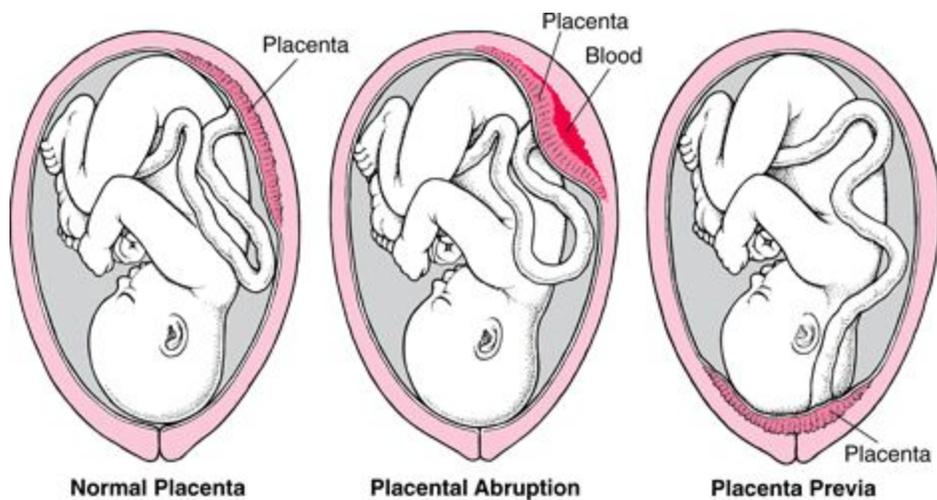
Severe: no or heavy vaginal bleeding, fetal distress, coagulopathy (or declining fibrinogen levels), severe uterine pain or tenderness, continuous repetitive uterine contractions, maternal hypotension or shock

Risk factors: abdominal trauma, cocaine use, chorioamnionitis, advance maternal age or parity (three or more), oligohydramnios, eclampsia, hypertension, smoking, violence

Clinical features: "painful uterine tenderness dark vaginal bleeding", contractions, fetal distress, DIC. Symptoms spectrum is wide.

Management: OB consult ASAP, large bore IVs and maternal stabilization with fluid and blood resuscitation, fetal monitoring. Rhogam, if needed. Corticosteroids given at less than 34 weeks of gestation will promote fetal lung maturity, and reduce the duration of mechanical ventilation. Betamethasone and dexamethasone can be used.

Complications: coagulopathy, hemorrhagic shock, uterine rupture, multiple organ failure, fetal distress and demise



pPROM:

-Antibiotics can decrease neonatal infection, prolong latency, and reduce postpartum endometritis, chorioamnionitis, neonatal sepsis, neonatal pneumonia, and intraventricular hemorrhage. A combination of 2 grams of ampicillin IV and 250 milligrams of erythromycin IV every 6 hours

-Expedient delivery is recommended in patients with pPROM after 34 weeks' gestation to avoid the complications of chorioamnionitis and increased maternal sepsis.

-Tocolytic therapy has not been shown to prevent preterm birth or reduce morbidity related to gestational age, it remains in use because it may prolong latency and allow time for antenatal administration of corticosteroids and antibiotics, and transfer of the patient. Candidates for tocolysis are women in preterm labor at between 24 and 36 weeks of gestation.

Postpartum hemorrhage meds:

Oxytocin: 10mg IM or slow IV push. 1st line

Methylergonovine, 0.2 milligram IM. Contraindicated in HTN/preE

Misoprostol, 600 micrograms SL

Carboprost, 250 micrograms IV

Steroids for fetal lung maturity:

- <34wks only: betamethasone, 12 milligrams IM, or dexamethasone, 6 milligrams IM, every 12 hours for 2 days can be used

Trauma in Pregnancy

Most common causes of injury: MVCs, interpersonal violence, falls

Complications: increases risk of spontaneous abortion, preterm rupture of membranes, preterm birth, uterine rupture, cesarean delivery, placental abruption, stillbirth

Fetal viability: estimated gestational age 24-26 weeks or fetal weight 500 g.

Physiologic Changes and Trauma:

Cardiovascular: Blood pressure declines in first trimester, levels out in second trimester and returns to non pregnant levels third trimester. At 20 weeks, uterus risen to level of IVC and can compress when mother is supine. Keep the patient on her left side to avoid supine hypotensive syndrome.

Pulmonary: Reduced oxygen reserve due to reduction in functional residual capacity caused by diaphragm elevation and an increase in oxygen consumption related to growing fetus, uterus and placenta. Remember maternal hypoxia rapidly leads to fetal hypoxia, distress and possible demise. Difficult to bag-valve-mask. No contraindications to RSI.

Anatomic Changes

Uterus: reaches umbilicus at week 20, costal margins by week 34, the diaphragm rises with flaring of rib. Therefore, pneumothorax with faster progression to tension pneumothorax → thoracostomy done in 3rd trimesters means chest tubes be placed 1-2 interspaces higher

Bladder: displaced into abdominal cavity beyond 12 weeks, becomes hyperemic, therefore, susceptible to injury

Risk factors predictive of preterm labor or contractions: gestational age greater than 35 weeks, assaults, pedestrian collisions, penetrating trauma of abdomen

Types of of injuries:

Fetal Injury

Poor fetal outcome due to: maternal hypotension and acidosis (hypoxia, lowered pH, lowered bicarbonate), and fetal heart rate less than 110 beats/min.

Placental Injury- Placental abruption is the leading cause of death after blunt trauma.

Placental separation can occur with deceleration forces with little injury or sign to external abdominal wall.

*Many cases after trauma show no evidence of vaginal bleeding. *Fetal monitoring to assess for fetal distress

Uterine Injury- usually uterine contractions.

Uterine rupture = rare, but may be due to pelvic fractures that strike directly against the uterus, or stab wounds or GSW injuries.

Imaging: Ultrasound can and should be completed. A FAST exam and assessment of IUP and fetal heart rate should be done. The use of ionizing radiation (CT and plain radiography) should be minimized, however, should not be withheld if it may provide significant diagnostic information. Nonionizing radiation, such as MRI, is preferred, if the patient is stable and if it is readily available.

Perimortem C-section: in the event of maternal cardiopulmonary arrest.

- Decision should be made within 4 minutes

- Uterine size exceeds umbilicus

- CPR should be continued

- Midline vertical incision from epigastrium to pubis symphysis

Resources:

Houry DE, Salhi BA. Acute Complications of Pregnancy. In: Rosen's Emergency Medicine: Concepts and Clinical Practice. Vol 2. 8th ed. Philadelphia, PA: Elsevier Saunders; 2014: 2282-2299

Bhatia K, Cranmer HH. Trauma in Pregnancy. In: Rosen's Emergency Medicine: Concepts and Clinical Practice. Vol 2. 8th ed. Philadelphia, PA: Elsevier Saunders; 2014: 296-304

ACEP. (n.d.). Retrieved June 20, 2017, from <https://www.acep.org/Clinical---Practice-Management/Trauma-in-the-Obstetric-Patient--A-Bedside-Tool/>