Chapter 33
Obstetrical Emergencies

Chapter Goal
- Apply & utilize assessment findings to formulate & implement treatment plan for normal & abnormal labor

Learning Objectives
- Review anatomical structures & physiology of reproductive system
- Identify normal occurrences of pregnancy
- Describe how to assess obstetrical patient
- Identify stages of labor & role EMT-Is play in each stage
- Differentiate between normal & abnormal delivery
Learning Objectives

- Identify predelivery emergencies
- Identify & describe complications associated with labor & delivery
- Describe management of patients with predelivery emergencies
- Describe indications of imminent delivery
- State steps in preparing mother for delivery

- Describe steps involved in delivering newly born
- Describe indications & procedure for cutting umbilical cord
- Discuss steps involved in delivery of placenta
- Describe care of mother after delivery
- Describe procedures involved with handling:
  - Abnormal deliveries
  - Complications of pregnancy
  - Complications of labor

- Describe significance of meconium being present in amniotic fluid
- Describe special considerations surrounding delivery of premature infant
Introduction
Female reproductive system

Introduction

Anatomy
- Not present in nonpregnant state
  - Placenta
  - Umbilical cord
  - Amniotic sac
  - Fetus

Introduction

Physiology
- Uterus stimulated by hormones to develop inner lining
- If sperm fertilizes egg, implant in uterus & is nourished by lining; pregnancy begins
- If no egg fertilized, uterus sheds lining
- Ovulation—ovary releases egg (menstrual cycle)
- 35-60 years—menopause begins
Introduction

● Physiology
  ➢ Fetal development
    ▪ 13th week
      ➢ Fetal gender can be determined
      ➢ Heart beats
      ➢ Structures present
    ▪ 21st week
      ➢ Fetal heartbeat heard with ultrasound
      ➢ “Quickening”
    ▪ 24th week
      ➢ Chance of survival if premature birth
    ▪ 40th week
      ➢ “At term”

Introduction

● Overview of normal pregnancy
  ➢ Full-term pregnancy = 280 days (40 weeks)
  ➢ Signs & symptoms:
    ▪ Missed/late menstrual period
    ▪ Nausea/vomiting
    ▪ Breast tenderness/enlargement
    ▪ Frequent urination

Introduction

● Overview of normal pregnancy
  ➢ Respiratory system
    ▪ ↑ Respiratory rate & depth
    ▪ Fetus begins to take up space
    ▪ Respiratory alkalosis develops
  ➢ Cardiovascular system
    ▪ ↑ Total blood volume of 40%-50%
    ▪ Proportionately greater ↑ in amount of plasma than red blood cells
  ➢ Vital signs
    ▪ Resting HR ↑ 10-20 bpm
    ▪ BP ↓ 10-15 mm Hg
Introduction

- Overview of normal pregnancy
  - GI system
    - ↓ Motility of GI tract & ↑ displacement of diaphragm
    - Risk of vomiting & aspiration
  - Urinary system
    - Bladder is displaced
    - ↑ Urine production
    - ↑ Risk of urinary tract infections

Introduction

- Minor & common problems with pregnancy
  - 1st trimester
    - Frequent urination
    - Nausea & vomiting
    - Breast pain/tingling/tenderness
    - Weakness & fatigue
  - 2nd trimester
    - Constipation
    - Heartburn
    - Leg cramps

Introduction

- Minor & common problems with pregnancy
  - 3rd trimester
    - Hemorrhoids
    - Varicose veins
    - Leg cramps
    - Braxton-Hicks contractions
Assessment

- History of present illness
  - 1st day of last menstrual period?
  - Anticipated delivery date?
  - How many previous pregnancies & term deliveries?
  - Previous complications?
  - Known complications of current pregnancy?
  - Expected difficulties?
  - When did contractions start—how far apart?
  - Pain different than contractions?

- Vaginal bleeding/discharge?
  - If bleeding continues—note amount, color, & duration
  - Other pertinent medical history
  - Current health of mother?
  - Recent illnesses, fever, or injuries?
  - Level of prenatal care?
  - Use illicit drugs, alcohol, or tobacco?

Assessment

- Substance abuse history
  - Anticipate aggressive resuscitation of newly born

- Physical examination
  - Maintain ABCs
  - Assess for hypotension/tachycardia
  - Protect patient privacy/modesty
  - Obtain vital signs
  - Visually inspect for crowning
Assessment

- General management
  - Supportive care
  - Place in comfortable position
    - In late pregnancy, place in left lateral recumbent position

Complications of Pregnancy

- Diabetes
  - Unpredictable swings in blood sugar levels
  - Women with no history—gestational diabetes
  - Risk factors for gestational diabetes
    - Obesity
    - Family history
    - Previous birth of very large newly born
    - Stillbirth
    - Child with birth defect
    - Polyhydramnios

Complications of Pregnancy

- Ectopic pregnancy
  - Located outside of uterus
  - Significant risk
  - Maternal risk factors:
    - Abdominal surgery & fibrous adhesion bands
    - Pelvic infection
    - Tubal ligation
    - Use of IUDs
  - Suspicion raised
    - Abdominal pain
    - Vaginal bleeding
    - Signs of hypotension & shock
  - Treatment
    - IV lines—fluid resuscitation
    - Transport to facility equipped to evaluate & manage
Complications of Pregnancy

- **Supine hypotensive syndrome**
  - Uterus compresses inferior vena cava
  - Keep positioned on left side
  - Apply immobilizing devices—do not compress uterus with backboard straps
  - Backboard tilted 15° to left

- **Appendicitis**
  - More difficult to assess during pregnancy
  - 2-3 times more likely to rupture
  - Care same as for any patient with abdominal pain

- **Preeclampsia & eclampsia**
  - Preeclampsia characterized by hypertension & fluid retention
  - More likely to have preeclampsia:
    - First-time pregnancy in woman <20 or >35 yrs
    - Multiple gestation
    - Preexisting hypertension
    - Diabetes mellitus
    - Family history of preeclampsia/eclampsia
    - Previous pregnancies with preeclampsia/eclampsia
  - Eclampsia—occurrence of seizures
Complications of Pregnancy

- Preeclampsia & eclampsia
  - Signs & symptoms
    - ↑ BP
    - Fluid signs
    - Excessive weight gain
    - Headache
    - Visual disturbances
    - Instability or change in mental status
    - Epigastric abdominal pain
    - Protein in urine
    - ↓ Urine output

- Preeclampsia & eclampsia
  - Eclampsia requires emergency treatment
    - Handle patient gently
    - Maintain ABCs
    - Administer high-concentration O₂
    - Initiate IV line
    - Place on left side & transport
    - Protect from injury
    - Medications to stop seizure & control BP per local protocol
    - Avoid emergency lights/siren
    - Notify receiving hospital

- Trauma during pregnancy
  - Complicates assessment—causes alteration in vital signs
  - ↑ Blood loss before signs or symptoms of shock develop
  - General prehospital care
    - Assess ABCs
    - Administer high-concentration O₂
    - Initiate IV line
    - Immobilize spine
    - Transport to closest appropriate facility
    - Provide reassurance
    - Notify receiving facility
3rd Trimester Bleeding & Abdominal Pain

- Placenta previa
  - Abnormal positioning of placenta within uterus
  - Predisposing factors
    - Multiple pregnancies
    - Rapid succession of pregnancies
    - >35 y/o
    - Previous history
  - Presentation
    - Bright red vaginal bleeding

- Abruptio placentae
  - Premature detachment (complete or partial)
  - Occurs in any stage—usually 3rd trimester

3rd Trimester Bleeding & Abdominal Pain

- Abruptio placentae
  - Signs & symptoms
    - Sudden onset of severe, constant abdominal pain
    - Dark vaginal bleeding
    - Soft, tender, or contracting uterus
    - Shock
  - Risk factors
    - History of preeclampsia
    - Chronic hypertension
    - Multiple pregnancies
    - Previous abruptio placentae
    - Motor vehicle trauma
    - Cocaine use
3rd Trimester Bleeding & Abdominal Pain

- Uterine rupture
  - After onset of labor
  - Complains of severe abdominal pain
  - High mortality rate
  - Risk factors
    * History of uterine surgery/cesarean section
    * Trauma
    * Prolonged/obstructed labor
    * Abnormal fetal presentation

3rd Trimester Bleeding & Abdominal Pain

- Uterine rupture
  - Signs & symptoms
    * Continuous, severe abdominal pain
    * Minimal vaginal bleeding
    * Tearing sensation in abdomen
    * Nausea
    * Shock
    * Easily palpable fetus in abdomen

3rd Trimester Bleeding & Abdominal Pain

- General care during 3rd trimester
  * Administer high-concentration O₂
  * Continuously monitor vital signs
  * Place patient on left side
  * Provide resuscitation per local protocol
  * Provide rapid, gentle transport
  * Notify receiving hospital
  * Reassure patient
Labor & Delivery

- Labor
  - Rhythmic contractions with ↑ frequency & forcefulness until expulsion of fetus

- Stages of labor
  - 1st stage: Dilation
  - 2nd stage: Expulsion
  - 3rd stage: Delivery of newly born to delivery of placenta

Stages of Labor

- Fetus moves into birth canal
- Cervix completes dilation
- Placenta separate from uterus

Stages of Labor

- Signs & symptoms
  - Ruptured membranes
  - Contractions
  - Bloody “show”
  - Pain
  - Transition
  - Urge to push
  - Crowning
Stages of Labor

- If birth imminent:
  - Place patient in semireclining position
  - Protect privacy
  - Allow significant other to remain with patient

Stages of Labor

- Delivery of newly born
  - Ensure adequate space
  - Prepare equipment
  - Administer O₂, start IV
  - Position mother, drape
  - Assist mother with proper breathing technique
  - Encourage mother to push
  - Apply gentle pressure on fetal head & support

Stages of Labor

- Delivery of newly born (cont'd)
  - Manually rupture amniotic sac, if intact
  - Check for umbilical cord around neck
    - If present, slip cord over head
    - If cord will not slip easily, place your fingers between newly born's neck & cord
    - If necessary, clamp & cut cord
Stages of Labor

- Delivery of newly born (cont’d)
  - Suction baby’s mouth & nose
  - Support baby’s head while it rotates to deliver shoulders/torso
  - Clamp umbilical cord
  - Evaluate & support newly born
  - Record time of delivery & Apgar

Delivery of Newly Born

- Apply gentle, steady pressure over newly born’s head, mother’s perineum
- Examine neck for umbilical cord

Delivery of Newly Born

- Support newly born’s head as it turns
- Guide newly born’s head downward for delivery of shoulder
Delivery of Newly Born

- Guide newly born's head upward to deliver second shoulder

Stages of Labor

- Delivery of placenta
  - 5–20 min after delivery of newly born
  - Do not delay transport
  - Place in plastic bag

Postpartum care of mother

- Massage uterus to control bleeding
- Palpate lower abdomen in circular motion
- Apply sanitary napkin & cold pack to perineum
- Ask mother if she wishes to breastfeed baby
Stages of Labor
- Newly born care
  - Stimulate breathing
  - Preserve warmth
  - Record Apgar scores
  - Keep newly born level with vaginal area until cord clamped

Care of Newly Born in Distress
- Normal vital signs
  - HR: 168 bpm
  - BP: 80
  - Respirations: 40
- Position newly born on back with head slightly lower than rest of body
- Suction mouth, then nose; evaluate
- If newly born does not cry, stimulate
- Keep newly born as warm as possible
Care of Newly Born in Distress

Guidelines for newly born resuscitation
- Properly position—provide blow-by $O_2$
- Bag-mask 100% $O_2$
- HR absent or <60 bpm—CPR
- Newborns experience arrest due to hypoxia
- Transport in “priority” mode

Abnormal presentation
- 1st body part—not newly born’s head

Multiple births
- Smaller at birth
- Premature 40% of time
- Difficulty regulating body temperature
- Care for mother
  - Accurate history
  - Normal delivery procedures for each birth
  - Shared placenta or placentas
  - Same resuscitation procedures
  - Postpartum hemorrhage

Breech presentation
- Buttocks/feet first
- ↑ Risk for birth trauma
- Do not push head back in or pull newly born out
- Encourage mother to push
- Extract ~6” loop of cord
Care of Newly Born in Distress

- Breech presentation (cont’d)
  - Rotate neonate for anterior-posterior shoulder positioning
  - Apply gentle traction until axilla visible
  - Guide newly born upward; deliver posterior shoulder
  - Guide newly born downward; deliver anterior shoulder
  - Ease head out; avoid excessive manipulation

Care of Newly Born in Distress

- Breech presentation (cont’d)
  - If no delivery within 3 min or breathing begins, place gloved hand in vagina
  - Form V with fingers on either side of nose & mouth; gently guide head out by lifting anteriorly
  - If head does not deliver within 3 min, deliver with mother’s buttocks elevated or in knee-to-chest position while maintaining V

Care of Newly Born in Distress

- Breech presentation (cont’d)
  - Administer high-concentration O₂ to mother
  - Start IV line in mother
  - If delivery occurs, prepare to resuscitate newly born
  - Notify receiving hospital
Care of Newly Born in Distress

- **Prolapsed cord**
  - Umbilical cord presenting part
  - Emergency
  - Management
  - Elevate newly born off cord
  - Monitor for pulsations in cord
  - Position mother in knee-to-chest or Trendelenburg position
  - Ask mother not to bear down
  - Transport gently & rapidly
  - Do not push cord back
  - Cover cord with warm, moist pad
  - Administer high-concentration O₂ to mother
  - Start IV line in mother

- **Limb presentation**
  - Little can be done
  - Transport
  - Do not attempt delivery
  - High-concentration O₂, IV

- **Cephalopelvic disproportion**
  - Relative size of fetus in respect to pelvis may compromise delivery
  - Contractions—unusually prolonged
  - High-concentration O₂, IV
  - Rapid transport

Summary

- One of most satisfying aspects of prehospital care
- Can provide psychological & physical support
- Rapid suctioning & assessment of newly born
- Significant complications can occur
- EMT-Is must be able to:
  - Rapidly identify abnormal conditions
  - Perform prehospital intervention
  - Rapidly transport
Questions?