

## Obstetrics and Normal Delivery

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### Objectives

- ▶ Review obstetric terminology
- ▶ Describe the function of the specialized structures of pregnancy
- ▶ Review normal maternal physiologic changes in pregnancy
- ▶ Discuss the history and physical of the pregnant patient
- ▶ Outline physiologic changes during the stages of labor
- ▶ Describe the general management of the OB patient
- ▶ Describe normal labor and uncomplicated delivery

### Obstetrical Terminology

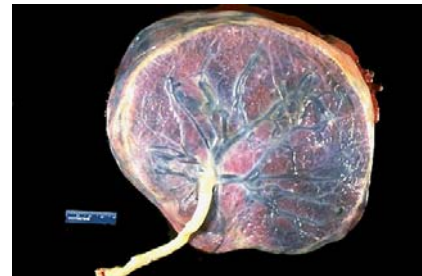
- ▶ Gravida
  - All current and past pregnancies
- ▶ Para
  - Number of past pregnancies viable to delivery
- ▶ Primigravida
  - Pregnant for first time
- ▶ Term
  - Pregnancy at 40 weeks' gestation
- ▶ Primipara
  - Gave birth once
- ▶ Nullipara
  - Has never delivered
- ▶ Multipara
  - Two or more deliveries
- ▶ Grand multipara
  - Seven deliveries or more

### Specialized Structures of Pregnancy

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- ▶ Placenta
  - thick, disk-shaped organ
    - maternal side - rough where it attaches to the uterus
    - fetal - smooth with branching vessels covering the membrane-covered
  - three major functions:
    - metabolic
      - produces glycogen, cholesterol and fatty acids
    - endocrine
      - secretes several hormones to maintain pregnancy and assist fetal development
    - transfer of substances b/w mother and fetus
      - exchange of oxygen, nutrients and waste products

### Normal Placenta



### Normal Placenta



### Specialized Structures of Pregnancy

- ▶ Umbilical Cord
  - lifeline b/w fetus and placenta
  - two arteries, one vein
  - entire cord cushioned w/ Wharton's jelly - a soft substance to prevent obstruction d/t pressure



### Specialized Structures of Pregnancy

- ▶ Fetal membranes and amniotic fluid
  - Amniotic sac
    - made up of two layers
      - amnion (inner)
      - chorion (outer)
  - Amniotic fluid
    - derived from fetal urine and fluid transported from maternal blood across the amnion
    - volume: 1L at birth
    - two functions
      - protect the growing fetus
      - promotes normal pre-natal development



### Maternal Adaptations to Pregnancy

### Maternal Adaptations to Pregnancy

- ▶ Cardiovascular
  - Heart pushed up and to (L)
  - Plasma vol ↑45-50%
  - RBC ↑ 20-30%
  - HR ↑15-20 bmp
  - CO ↑ 30%
- ▶ Respiratory
  - O<sub>2</sub> consumption ↑15-20%
  - ↓ pCO<sub>2</sub> = respiratory alkalosis
  - ↓ functional residual capacity (↑ position of diaphragm)
  - 40% ↑ tidal volume

### Maternal Adaptations to Pregnancy

- ▶ GI
  - ↓ esophageal sphincter tone= acid reflux
  - ↓ tone and motility of GI tract
  - ↓ gallbladder emptying
  - appendix displacement



### Maternal Adaptations to Pregnancy

- ▶ Urinary
  - ↑ pressure on bladder= urinary frequency
  - ↑UTI d/t incomplete emptying
  - GFR ↑ 50% = ↓ BUN, Cr
- ▶ Integumentary
  - Hyperpigmentation
    - Linea nigra
    - 'mask of pregnancy'



### Maternal Adaptations to Pregnancy

- ▶ Musculoskeletal
  - relaxation of pelvic joints and ligaments
  - lordosis
  - diastasis recti
    - separation of the rectus abdominis
- ▶ Endocrine
  - BMR ↑ 20-25%
  - ↑ heat intolerance

### Components of the OB Patient History

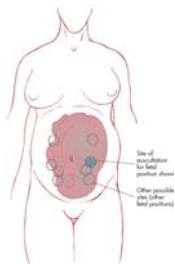
- ▶ OB history
  - EDC/gestational age
  - parity and gravidity
  - known multiple birth
  - previous delivery hx and complications
  - maternal life-style (drugs, alcohol, smoker)
  - infectious disease status
  - prenatal care
- ▶ Pain?
- ▶ Vaginal bleeding or d/c?
- ▶ Bloody show or rupture of membranes (ROM)?
- ▶ General health status



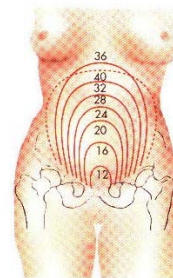
Meconium Placenta

### Physical Exam of Obstetrical Patient

- ▶ ABC
  - life-threatening conditions/acute surgical problem
  - signs of imminent delivery
- ▶ VS
  - orthostatics if large amt of bleeding or fluid loss
- ▶ Abdominal assessment
  - tenderness, guarding, rigidity
- ▶ Obstetrical assessment
  - fundal height and symmetry
  - FHT (120-160)
  - if ROM - color of fluid
  - if bleeding - color, amt, quality



### Fundal Height



## General Management of OB Patient

- ▶ Birth NOT imminent and NO distress or injury:
  - oxygen
  - position of comfort
    - (L) lateral recumbent
  - monitor, IV per pt VS/assessment
- ▶ Birth imminent w/o expected complications:
  - do not delay delivery
- ▶ Birth imminent w/ expected complications:
  - if patient is known or suspected high risk for delivery complications contact medical control for direction - may need to expedite transport to appropriate facility

## Labor

- ▶ Labor
  - regular, painful uterine contractions resulting in progressive cervical effacement and dilatation.
  - divided into 3 stages that delineate milestones in a continuous process
    - Dilatation
    - Expulsion
    - Placental

### Cervical Effacement & Dilatation

**Effacement** - the gradual thinning, shortening and drawing up of the cervix measured in percentages from 0 to 100%.



**Dilatation** - the gradual opening of the cervix measured in centimeters from 0 to 10 cms.



The Process of Birth

## The Process of Birth

- ▶ Premonitory Signs
  - Braxton Hicks contractions
  - lightening
  - ↑ vaginal discharge
  - bloody show
  - energy spurt - 'nesting'
  - weight loss

## The Process of Birth

- ▶ First Stage: Dilatation
  - Latent Phase
    - Dilatation to 3cm
    - Intensity mild, increase to moderate
    - Woman usually sociable and excited
  - Active Phase
    - Dilatation 4-7 cm
    - Effacement completed
    - Baby descends into pelvis
    - Intensity moderate, increase to strong
    - Woman more anxious w/ inward focus


## The Process of Birth

- Transition Phase
  - Short but intense
  - Dilatation 7-10cm
  - Increase bloody show
  - Baby descends further into the pelvis
  - Contractions 1 1/2 - 2 minutes apart, lasting 60-90 sec
  - Urge to push or bear down
  - Leg tremors, n/v are common
  - Woman is irritable, may lose control




### The Process of Birth

- ▶ Second Stage = Expulsion
  - Begins w/ complete effacement and dilation of cervix, ends with delivery of baby
  - Involuntary pushing response
  - Crowning
  - Woman regains feeling of control, may be oblivious to her surroundings and appear asleep b/w contractions



### The Process of Birth

- ▶ Third Stage = Placental
  - Begins w/ birth of baby, ends with delivery of placenta
  - Four signs of placental separation:
    - Uterus has a spheric shape
    - Uterus rises upward in the abd, placenta descends into the vagina
    - Cord extends further from the vagina
    - Gush of blood appears as blood trapped behind placenta is released



### Signs of Imminent Delivery


- ▶ Regular contractions lasting 45-60 seconds that are 1-2 minutes apart
- ▶ Mother reports urge to bear down or has sensation of BM
- ▶ Large amount of bloody show
- ▶ Crowning
- ▶ Mother feels delivery is imminent
- ▶ Pants off

### Pre-hospital Delivery

- ▶ Primary role is assistance w/ natural process
- ▶ Prevent uncontrolled delivery
- ▶ Protect neonate from cold and stress
- ▶ Continued assessment of mother
- ▶ Facilitate delivery of placenta


### Pre-hospital Delivery

- ▶ Privacy
- ▶ Positioning
  - surface that extends out past mother's vagina
  - on back w/ knees flexed and widely separated
- ▶ Assessment
  - VS w/ FHT if possible
  - O2
- ▶ Equipment
  - know your kits
- ▶ Postpartum care of mother
- ▶ Basic newborn care



### Normal Delivery

When crowning, apply gentle pressure to infant's head



### Normal Delivery

Examine neck for looped umbilical cord



### Normal Delivery

Support infant's head as it rotates for shoulder presentation



### Normal Delivery

Guide infant's head downward to deliver anterior shoulder



### Normal Delivery

Guide head upward to release posterior shoulder



### Delivery

After delivery and evaluation of infant, clamp and cut cord



### Delivery



### Clamp and cut cord

**Clamp and Cut the Umbilical Cord**

### Post partum bleeding

- ▶ Post delivery vaginal bleeding
  - Up to 500ml is normal
  - If bleeding is excessive
    - Fundal massage
    - Allow infant to nurse

Assessment	Points		
	0	1	2
<b>Appearance</b>	Pallor or cyanosis	Bluish hands and feet	Pink w/o cyanosis
<b>Pulse</b>	Absent	<100 bpm	>100 bpm
<b>Grimace</b>	No response to suction or gentle slap on soles	Grimace to suction or gentle slap on soles	Responds promptly to sxn or gentle slap w/ cry or active movement
<b>Activity</b>	Limp	Minimal flexion of extremities; sluggish movement	Flexed body posture; spontaneous, vigorous movement
<b>Respiration</b>	No spontaneous respirations	Slow respirations or weak cry	Spontaneous respirations w/ strong cry

APGAR Scale

### APGAR

- Measure at 1 and 5 minutes post delivery
- 0-3 severely depressed (BVM/CPR)
- 4-6 moderately depressed (stimulation/oxygen)
- 7-10 active and vigorous

Questions?