Assessment of Pregnancy and Estimating Date of Delivery

Dr. Gary Mumaugh – Physical Assessment
Normal Pregnancy

• THE POSSIBILITY OF PREGNANCY MUST BE CONSIDERED IN EVERY WOMAN OF REPRODUCTIVE AGE REGARDLESS OF CHIEF COMPLAINT!!!!
Normal Pregnancy

• A study showed that 7% of women who stated there was no chance of pregnancy and had normal on-time last menstrual periods were pregnant.

• Barrier method use, contraceptives, and tubal sterilization does not guarantee pregnancy prevention!!
Terminology

• **Gravidity**
  - Total # of pregnancies regardless of duration or outcome.

• **Parity**
  - # of pregnancies completed to delivery during viable period.

• **G#P# (Full term-Preterm-Aborted-Living)**
  - G3P2 (2-0-1-2)
Terminology

- Duration = 40 weeks (calculated from first day of last menstrual period)
- 3 Trimesters of Equal Length
  - 1st - Conception to 14 weeks
  - 2nd - 14-28 weeks
  - 3rd - 28-42 weeks
- Term pregnancy requires completion of at least 37 weeks
Physiology Changes

- Cardiovascular
  - 40-45% ↑ circulating blood volume
  - 43% ↑ in CO
  - 17% ↑ in resting HR
  - 20% ↓ in SVR
  - ↓ BP
  - ↑ of diaphragm displaces heart
Physiology Changes

• Respiratory
  – Dyspnea common complaint
  – Hormone-induced 40% ↑ in tidal volume
  – pCO₂ ↓ (Pregnancy value 30mmHg)
  – Functional residual capacity ↓ b/c of ↑ of diaphragm
Physiology Changes

• GI
  – Gastric reflux 2° to delayed gastric emptying, ↓ intestinal motility, and ↓ lower esophageal sphincter tone.
  – Gallbladder emptying delayed and less efficient⇒↑ risk of cholesterol stone formation.
Physiology Changes

- GU
  - ↑ renal blood flow
  - ↑ kidney size
  - ↑ GFR (up to 50% by 2nd trimester)
    results in ↓ BUN/Creatinine
Physiology Changes

• Hematopoietic
  – 40-45% ↑ circulating blood volume 2º to ↑ plasma volume and # of erythrocytes
  – HgB conc. ↓ 2º to dilutional intravascular volume but should not ↓ below 11g/dL
Physiology Changes

- Hematopoietic
  - High Fe requirements
  - Reticulocyte count ↑ 2\textsuperscript{nd} half of preg.
  - Leukocyte counts range 5000-12000 cells/\mu L
  - Leukocyte function ↓ 2\textsuperscript{nd} trimester so ↑ susceptibility to infection.
  - ↑ coagulation factors
  - ↑ ESR
  - Slight ↓ platelets
Physiology Changes

• Endocrine
  – Hyperinsulinemia and fasting hypoglycemia 2º to changes in carbohydrate metabolism
  – Postprandial hyperglycemia 2º to altered response to glucose ingestion.
  – Thyroid with ↑ vascularity and mild hyperplasia but clinically detectable goiter is not normal. (Free thyroxine and TSH to assess thyroid function during pregnancy)
Physiology Changes

• Uterus
  - ↑ uterine weight (70⇒1100g)
  - ↑ intrauterine volume (10⇒5000mL)
  - 12 weeks uterus expands into abdominal cavity
Physiology Changes

• Breasts
  – Breast tenderness and tingling starting in 1\textsuperscript{st} trimester
  – Breasts enlarge
  – Nipple size $\uparrow$
  – $\uparrow$ pigmentation
Assessment of Intrauterine Pregnancy - Presumptive Changes

• Amenorrhea - often the earliest symptom of pregnancy
• Nausea and vomiting (morning sickness)
  – Experienced by almost half of all pregnant women
  – Occurs during first 3 months of pregnancy
• Urinary frequency - enlarging uterus exerts pressure on the bladder
Assessment of Intrauterine Pregnancy - Presumptive Changes

• Excessive fatigue -- may persist throughout the first trimester
  – Change in breasts -- engorgement, tenderness, tingling, darkening of the nipple area
• Quickening - mother's perception of fetal movement
  – 18 to 20 weeks after LMP
  – 16 weeks in multigravida
Changes in the Pelvic Organs

- Goodell's sign
  - Softening of the cervix caused by increased vascular congestion
  - Slight uterine enlargement on pelvic exam
  - The only physical signs detectable within the first three months of pregnancy
Changes in the Pelvic Organs

• Chadwick's sign
  – The deep red to purple or bluish coloration of the mucous membranes
  – The cervix, vagina and vulva involved
  – Due to increased vasocongestion of the pelvic vessels
Changes in the Pelvic Organs

- Enlargement of the abdomen - uterus enlargement on pelvic exam
- Braxton Hicks contractions
  - Are painless contractions that occur at regular intervals throughout pregnancy but are
  - Felt more commonly after 28 weeks
  - Also known as false labor
Changes in Skin

- Abdominal strial-stretch marks
- Facial chloasma - after 16 weeks
- Nipples and areola -- may darken especially in primigravidas and dark haired women
- Linea nigra - pigmented line of the abdomen may develop
Fetal Outline

• Identified by palpation in many pregnant women after 24 weeks of gestation

• Ballottement
  – Passive fetal movement elicited by tapping the cervix with two fingers
  – This pushes the fetal body up, and as it falls back, the examiner feels rebound
Pregnancy Tests

• Urine Test
  – First urine specimen in AM (midstream) - not necessary, but preferred if tested early
  – Approximately 95% accurate
  – 10 to 14 days after first missed menstrual period
  – More accurate now - can detect pregnancy around time of missed period
Pregnancy Tests

• Blood test
  – Most accurate pregnancy test
  – Few days after presumed implantation
  – Can be used in diagnosis of ectopic pregnancy or Trophoblastic disease
Pregnancy Tests

• Over-the-counter pregnancy tests
  – Performed on urine
  – False positive rate - approximately 5%
  – False negative rate - approximately 10%
  – Must follow instructions carefully
• Positive changes
  – Positive signs of pregnancy are completely objective
  – Usually not present until the fourth month of pregnancy
• Palpation of fundus of uterus
  – 12 weeks- Symphysis pubis
  – 16 weeks- Midway between symphysis pubis and umbilicus
  – 20 weeks- Umbilicus
  – 20-32 weeks- ↑ 1 cm above umbilicus for every ↑ 1 week
Positive Changes

- Fetal movement
  - Palpable by a trained examiner after about 18 weeks of pregnancy
  - Faint flutter in early pregnancy
  - Vigorous movement later in pregnancy
  - Fetal electrocardiographic evidence -- recorded as early as 84 days of pregnancy
  - Ultrasound -- positive diagnosis as early as the sixth week of pregnancy
Estimated Date of Confinement (EDC)

• Gestation
  – Approximately 9 1/3 calendar months or 40 weeks + 2 1/2 weeks from (LMP) last menstrual period
Nagele's Rule

• Most common method of determining the EDD
• Begin with the first day of the last menstrual period (LMP)
• Subtract three months and add seven days
ESTIMATING DATE OF DELIVERY

Date LMP
Subtract 3 Months
Add 7 Days & 1 year
EDD

3-15-2007
- 3
= 12-15-2006
+ 7
= 12-22-2007
Guidelines for Maternal Health

• Meals should not be avoided - the fetus is nourished by what is consumed
• Regular, well-balanced meals should be eaten
• Eat frequent, small meals if upset stomach is a problem in early months
• Foods high in protein, minerals, and vitamins should be consumed
Guidelines for Maternal Health

- High salt intake should be avoided
- Smoking should be avoided - affects heart rate, blood pressure, and cardiac output of both the mother and fetus
- Alcohol should be avoided - may affect mental and physical development of the fetus
Guidelines for Maternal Health

- Medications other than those prescribed by a doctor or medic should not be taken.
- The need for vitamin is increased A, B, C, and D.
- Iron supplements may be indicated for patients with a history of anemia, multiple births, or frequent pregnancies.
Congratulations! When are you due?

i’m so crafty, i make people.