Case #4
Trophoblastic Disease
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September 11, 2008
Outline

I. Hydatidiform moles

II. Clinical presentation and treatment

III. Specific case study
Complete Hydatidiform Mole

1. Occurs when:
   (90%) Egg that has lost its nucleus is fertilized by a single sperm: 46, XX
   (10%) Or by two sperm: 46, XX or 46, XY (all fraternally derived)

2. Develops in the uterus between 3rd and 5th weeks of pregnancy
   -- Occurs in about 0.1 - 0.5 percent of pregnancies

3. Morphology of the Mole:
   a. Most chorionic villi have excessive accumulation of fluid
      & absent or inadequate development of blood supply
      \[\Rightarrow\] results in swollen cysts that resemble grapes
   b. Trophoblast layer has shown abnormal proliferation
   c. No embryonic development \[\Rightarrow\] no fetal parts
Complete Hydatidiform Mole Formation

Monospermic

Dispermic
Partial Hydatidaform Mole

1. Occurs when:
   Egg is fertilized by one or two sperm: triploid
   XXX, XXY, XYY

2. Morphology of the Mole:
   a. Only some of the chorionic villi are edematous
   b. The trophoblast layer has shown abnormal proliferation only in discrete areas
   c. Embryo is viable for weeks → fetal parts present when the mole is removed
Formation

1. No chorionic circulation develops.

2. Trophoblast survives via nourishment from maternal blood in the intervillous spaces. It secretes and transfers products from the maternal blood into the chorionic villi.

3. Without chorionic circulation, liquids accumulate, distending the villi into cysts.

4. Although the villi have defective intrinsic blood supply, they continue to grow leading to the formation of a hydatidiform mole.
Typical Presentation

- Occurs in 4\textsuperscript{th} or 5\textsuperscript{th} month of pregnancy

- Vaginal bleeding & passage of thin, watery fluid with bits of tissue in grape-like masses

- Abnormally high hCG levels

- Larger abdomen size than should be at that gestational phase

- Women in their teens or between ages 40-50 are at highest risk

- Ultrasound examination can be definitive in diagnosis
  - No fetal heart sounds
Treatment

- Moles must be removed from the uterus
  Perform curettage (removal of the tissue with a surgical instrument shaped like a spoon)

- 80-90% of moles remain benign and give no further difficulty;
  however, over 10% develop into choriocarcinoma or invasive moles

- Chest X-rays to rule out lung metastases

- Quantitative determination of hCG levels for following year
  to rule out persistent trophoblastic disease (pregnancy should be avoided)

- Disease and treatment usually do not affect future pregnancies
Persistent Trophoblastic Disease

- Occurs when there is residual trophoblastic tissue left in the uterus
- Can be benign or malignant (choriocarcinoma)
- Secrete high levels of hCG, elevated above even hydatidiform levels

Choriocarcinoma

- Rapidly invasive and widely metastasizing malignancy
  - Common sites of metastasis: lungs and vagina
- Tumor is soft, fleshy yellow-white
- Tendency to form large areas of ischemic necrosis
Clinical Case Study

- 38 year old female
- Chief Complaint: excessive vaginal bleeding lasting less than one day

- Gravida III: pregnancies regardless of outcome (present included)
- Para II: number of pregnancies carried to birth

- After regular menstruation, her last menstrual period was 5 months ago (January to May)
- Exam in April showed uterus corresponding to normal 3 month pregnancy
Current Exam & Test Results

1. Pelvic-abdomen size corresponding to uterine enlargement of a 6-month pregnancy (3 months worth of growth in 1 month)

2. hCG levels abnormally high for this stage of her pregnancy

3. Absence of fetal heartbeat

4. Ultrasound confirmation

Diagnosis

Hydatidaform Mole (or “molar” pregnancy)
Treatment

1. Curettage of the tissue

2. HCG levels monitored weekly until results normal for 3 consecutive weeks, then monthly for a year

3. Chest X-rays were made to detect lung metastases

4. 2 years post-op: patient well, lung fields normal, no increased hCG levels; Thus, no need to be concerned with persistent trophoblastic disease
Questions?