Gynecologic Malignancies

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Outline/Objectives

• Gestational Trophoblastic Neoplasia
  – Partial and Complete Molar Pregnancy
  – Diagnosis and Treatment

• Cervical Carcinoma
  – Cytology screening
  – Diagnosis
  – Treatment
Outline/Objectives

- Ovarian Cancer
  - Diagnosis
  - Treatment
- Endometrial Cancer
  - Workup of postmenopausal bleeding
  - Diagnosis
  - Treatment
Gestational Trophoblastic Disease

• Incidence is highest in Asian women: 1 in 200 pregnancies, lower in United States: 1 in 2000 pregnancies
• Recurrence rate is 2%
• Associated with dietary deficiencies such as folic acid
• Tissue derived from proliferation of abnormal placental tissue
Gestational Trophoblastic Disease

• Classification
  – Molar Pregnancy
    • Complete Mole
    • Partial Mole
  – Persistent Gestational Trophoblastic Disease
    • Histologically Benign
    • Persistent histologically benign
    • Persistent histologically malignant
Molar Pregnancy

- **Complete mole-**
  - only trophoblastic tissue, no fetus, mostly derived from syncytiotrophoblast
  - results from fertilization of blighted ovum by a haploid sperm which duplicates
  - Genetic makeup is 46, XX
  - Most common type, 90% of all molar pregnancy
  - 15-20% will become malignant
Molar Pregnancy

- **Partial mole**
  - Focal trophoblastic proliferation in the placenta, derived from cytotrophoblast
  - Results from one set of maternal chromosomes and two sets of paternal chromosomes
    - two sperm fertilize one ovum
    - karyotype is 69, XXY
  - 3% will become malignant
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Complete Mole</th>
<th>Partial Mole</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Villi</strong></td>
<td>All edematous</td>
<td>Some Normal</td>
</tr>
<tr>
<td><strong>Capillaries</strong></td>
<td>Few, no fetal blood</td>
<td>Some, fetal blood present</td>
</tr>
<tr>
<td><strong>Embryo</strong></td>
<td>None</td>
<td>Abnormal fetus</td>
</tr>
<tr>
<td><strong>HCG titer</strong></td>
<td>High</td>
<td>Moderately elevated</td>
</tr>
<tr>
<td><strong>Karyotype</strong></td>
<td>46, XX</td>
<td>Triploid (69, XXY)</td>
</tr>
<tr>
<td><strong>Malignant Potential</strong></td>
<td>15-20%</td>
<td>1-3%</td>
</tr>
</tbody>
</table>
Molar Pregnancy

• Clinical Presentation
• History/symptoms
  – Vaginal bleeding
  – Passing tissue: grape-like clusters
  – Nausea/vomiting
  – Visual changes, shortness of breath (if pre-eclampsia has developed)
Molar Pregnancy

• Physical Findings
  – Uterus larger or smaller than expected by gestational age estimated by last menstrual period
  – Cervical os may be dilated if passing tissue
    • may find edematous trophoblastic tissue on exam
  – Lack of fetal heart tones may be noted, particularly with complete mole
  – Hypertension, tachycardia, protein in the urine when pre-eclampsia develops
Molar Pregnancy

• Physical Findings
  – Hyperthyroidism may develop as a result of high HCG levels
    • tachycardia, increased deep tendon reflexes, hypertension may be noted in these patients
  – Pre-eclampsia
    • hypertension, protein in urine, seizures (eclampsia)
Molar Pregnancy

• Diagnosis usually established by ultrasound
• Can also suspect diagnosis if uterus is large for menstrual dates and no fetal heart tones are heard
Molar Pregnancy

• Treatment
  – Dilatation and Curettage (D & C)
    • Use suction curette if it is available
      – less trauma to uterus and less risk of uterine perforation with suction D & C
    • Use intravenous oxytocin drip to control hemorrhage while doing the curettage
Molar Pregnancy

• Follow up after treatment
  – Contraception for 1 year after treatment
  – Follow HCG titers/pregnancy tests monthly to make sure the molar pregnancy does not recur

• Recurrence
  – Use methotrexate to treat recurrence
    • very effective
    • important to detect recurrence early to improve chances of survival
Cervical Carcinoma

- Incidence of cervical cancer can be reduced by screening
  - screening done by collecting cervical cytology (Pap test)
- Cervical cancer starts as pre-invasive lesion: cervical intraepithelial neoplasia
- Pre-invasive cervical neoplasms not visible on physical examination
  - usually only detected by cytology screening
Cervical Carcinoma

• Risk Factors
  – First intercourse at an early age
  – Multiple sexual partners
  – Early childbearing
  – Male sexual partner who has multiple sexual partners
  – Venereal infections
Cervical Carcinoma

- Risk Factors
  - Suppressed immune system
    - HIV/AIDS
  - Cigarette smoking
  - Human papillomavirus infection
Cervical Carcinoma

• Squamous cell cancers are the most common type
  – develop at the transformation zone
  – human papillomavirus is linked to over 90 % of all squamous cancers of the cervix
Cervical Carcinoma

• 85% of cervical cancer is of the squamous type, 15% from glandular tissue

• Symptoms:
  – bleeding after intercourse
  – abnormal menstrual bleeding
  – pain, blood in urine or from rectum in advanced cancers
Cervical Carcinoma

• Signs/Physical exam findings
  – large mass on cervix which bleeds easily
  – lack of urine production from blocked urinary tract/ureters
• Cervical cancer spreads directly to bladder, rectum and pelvic lymph nodes
Cervical Carcinoma

• Staging/classification of cervical cancer
  – **Stage 1**: Cancer confined to cervix
  – **Stage 2**: Cancer extends beyond cervix but not to the pelvic wall, not beyond the upper two-thirds of the vagina
  – **Stage 3**: Cancer has extended to pelvic wall, cancer involves the lower one-third of vagina, ureter is blocked by cancer
  – **Stage 4**: Cancer has spread outside of pelvis or to the lining of the bladder or rectum
Cervical Carcinoma

- Therapy
  - Radical surgery - remove cervix and surrounding tissue, remove pelvic lymph nodes
  - Radiation - treat pelvis with radiation
    - Radiation as effective as surgery in curing cervical cancer
    - Radiation can be given to patient by temporary implants inserted into uterus
Endometrial Cancer

• Endometrial cancer is the most common genital tract malignancy in the United States
• More common in women after menopause
• Risk factors
  – obesity
  – hypertension
  – diabetes
  – use of estrogen
Endometrial Cancer

- Endometrial hyperplasia often develops before endometrial cancer
- Patients with hyperplasia are at higher risk for developing cancer of the endometrium
- Patients with hyperplasia should be treated with progestins or hysterectomy if atypical cells are associated with the hyperplastic cells
Endometrial Cancer

• Symptoms
  – Bleeding after menopause is most common symptom
  – Women who develop endometrial cancer before menopause will have abnormal menstrual bleeding
Postmenopausal Bleeding

• Most postmenopausal bleeding is from benign conditions
  – most common benign causes are endometrial polyps, sub-mucosal fibroids and atrophy of the endometrium

• Cancer and hyperplasia are present in 20% of women with postmenopausal bleeding

• A biopsy should be performed to evaluate the endometrium in women with postmenopausal bleeding
Endometrial Cancer

• Physical Examination
  – Uterus may be enlarged in advanced cases

• Diagnosis is made by taking a biopsy of the endometrium by curettage

• Treatment
  – Hysterectomy
  – Biopsy of the pelvic and para-aortic lymph nodes should be done in deeply invasive cancers
  – Radiation
Ovarian Cancer

• Most cancers of the ovary arise from the surface epithelium
• In women under age 20, the most common cancers of the ovary arise from the germ cells
• Cancer of the ovary spreads throughout the peritoneum
• Most cancers are found when they have spread throughout the peritoneum
Ovarian Cancer

• Symptoms
  – Pelvic pain
  – Abdominal bloating
  – Constipation
  – Nausea, weight loss, poor appetite
Ovarian Cancer

• Physical Exam Findings
  – Large rounded abdomen
  – Fluid wave can be detected with ascites
  – Pelvic mass
  – Lymph nodes in the groin or above the clavicle may be enlarged
Ovarian Cancer

• Diagnosis
  – Only can make diagnosis by laparotomy
  – Diagnosis can be suggested by x-ray based studies such as Computed tomography (CT) scans or ultrasound
  – CA-125 is a serum protein that is elevated in many patients with ovarian cancer
    • mostly useful in following the progress of the cancer after treatment
Ovarian Cancer

• Treatment
  – Surgery: remove all of the visible cancer, remove uterus, fallopian tubes and ovaries, biopsy pelvic and para-aortic lymph nodes
  – Chemotherapy: usually for 3-6 months after surgery