Cancers of the Female Genital Tract
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PowerPoint Slide Information Summary
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What do you do to diagnose female genital tract cancer?
1. Pelvic examination
2. Pap smear
3. Investigate abnormal bleeding
4. Evaluate adnexal masses

Frequency by location
1. Cervix (#1 in the world)
2. Endometrium (#1 in the US because US women get so many Pap smears)
3. Ovary
4. Vulva
5. Vagina
6. Fallopian tube

Gynecologic Cancer Facts from the CDC at http://www.cdc.gov/cancer/nbccedp/info-gyn.htm
Gynecologic cancers are diagnosed in female reproductive organs that include the uterus, ovaries, cervix, fallopian tubes, vulva, and vagina. According to the forthcoming United States Cancer Statistics (USCS): 2002 Incidence and Mortality Report (available November 2005)

- More than 71,000 women in the United States were diagnosed with a cancer affecting the reproductive organs.
- More than 27,000 women in the United States died from some form of gynecologic cancer.
- Uterine (endometrial) cancer is the most common gynecologic cancer.
- Ovarian cancer is the most deadly gynecologic cancer.
- Cervical cancer was once the leading cause of death for women in the United States; however, during the past four decades, incidence and mortality have declined significantly.
- Other cancers of the female reproductive system are less common. Vulvar cancer, for example, accounts for only 4 percent of cancers in the female reproductive organs. Vaginal cancer accounts for approximately 3 percent of cancers of the female reproductive system.

Cervix
Diagnostic steps: Look, Pap, Colposcopy, Biopsy

Pap smears
1. 10-15% false negative rate each time one is done
2. Dysplasia cannot be diagnosed with certainty. The cells can look consistent with dysplasia but a full-thickness skin biopsy is needed to determine what percentage of skin thickness has not matured on the way to the surface of the skin.
3. Human papilloma virus (HPV) cannot be diagnosed with certainty on a Pap smear. Cells on Pap might show vacuolated cytoplasmic inclusions (I tell the patient the cells look like they have 7-Up bubbles inside them) consistent with a viral irritation and the most common viral irritation is HPV.
4. Prove abnormal Paps with a biopsy.
5. ThinPrep Pap smears are expensive, easier to interpret, and the fluid they are collected in can be tested for STDs.

Pap smear nomenclature
- BCC Benign Cellular Change
- ACUS Atypical Cells of Undetermined Significance – CAREFUL, this could mean endometrial or ovarian cancer
- ASCUS Atypical Squamous Cells of Undetermined Significance
- LGSIL Low-grade Intraepithelial Lesion
- HGSIL High-grade Intraepithelial Lesion
Cervical Cancer Findings
- Abnormal Pap
- Warts – HPV
- Visible cervical lesion
- Invasive lesion – bleeding, necrosis, odor, perhaps paracervical thickening

1. Do Pap smears have a 10-15% false negative rate? Yes. But taken over the 6 years it takes to develop squamous cervical cancer, it usually picks up the lesion before it goes to cancer.
2. Should this lady do anything? Yes. Do colposcopy with endocervical curettage (ECC) and biopsies. Always evaluate an abnormal Pap, even if more recent Pap is normal.
3. Does colposcopy CURE anything? No. Tell the lady to call in a week if she has not heard biopsy results.
4. Do Pap smears that show indication of HPV mean an increased risk of abnormal Pap in the future? Yes.

Natural History
- Cervical cancer is an STD caused by HPV.
- High Risk HPV DNA virus incorporates into the skin of the cervix.
- Squamous cell cancer takes 6-8 years to develop and is usually unicentric in origin.
- Adenocarcinoma of the columnar epithelium of the endocervix takes 1.5 years to develop and is multicentric in origin.

Staging and Treatment
1. Non-invasive, including CIS (Stage 0), is treated surgically.
2. Invasive lesions are primarily treated with irradiation, with or without surgery.
3. Radical hysterectomies (Wertheim) to preserve ovarian function can be considered through Stage IIB lesions.

Case 2 with questions: A 30 yo goes into labor with a known invasive cell cancer of the cervix.
1. Do you deliver as soon as the baby is viable? Yes.
2. Do you do a C-section because of the risk of hemorrhage from the cervix? Yes.

Cervical Cancer Summary
1. Look at cervix during physicals.
2. Do Pap smears.
3. Biopsy as needed.
4. Operate in office if non-invasive.
5. Invasive treatment is done in the hospital and is primarily radiation.

Endometrium

Endometrial Carcinoma Diagnosis
1. Evaluate intermenstrual bleeding.
2. Evaluate post-menopausal bleeding.
3. Evaluate persistent, unusual bleeding.
4. Sonograms are poor at excluding early cancers but usually show myometrial invasion (as does MRI)

Case 3 with questions: Heavy menses
38 yo bleeds 10 days every 21 days for the last 2 cycles. This is twice as heavy as usual for her.
1. Is this hypermenorrhea? Yes
2. Is an endometrial biopsy indicated? No. It would be if the bleeding was BETWEEN menses.
3. Is this dysfunctional uterine or anovulatory bleeding? Yes.
4. Is a screen for Chlamydia/Gonorrhea indicated? If she has a new partner for the last 2 cycles, yes. Otherwise, no.

Case 4 with questions: Postmenopausal bleeding
60 yo, never on supplemental hormones since age 50 when her menses stopped, bleeds 4 pads/day for 3 days.
1. Does she have an 80% chance this is cancer? Yes. 30% if 5 years post-menopausal and bleeds. 80% if 10 years post-menopausal.
2. Does she need an endometrial biopsy? Yes.
3. What is the value of a sonogram? It might show invasion into the myometrium. It also checks the ovaries.

Treatment
Stage the disease with a hysterectomy. Do a pelvic and peri-aortic node sampling if over 50% myometrial invasion. Add irradiation or chemotherapy as indicated.
Ovary

Ovarian Cancer

- No symptoms while limited to ovaries.
- Surgery is always indicated.
- 40% leave gross cancer behind at time of initial surgery.
- 70% are bilateral at time of diagnosis.
- 80% need more treatment after surgery.
- Embryologically, the surface of the pelvic peritoneum and the surface of the ovaries are the same. A patient can therefore get ovarian tissue cancer even if both ovaries have been removed.

Origin and Risk

1. Risk is proportional to activity on the surface of the ovary. Pregnancy, breast feeding, and oral contraceptives decrease risk by up to 80%.
2. Hereditary Ovarian Cancer Syndrome occurs in 1 in 2000 females and is caused by the BrCa1 and BrCa2 genes.

Ovarian Tumor Markers

1. CA-125 for epithelial ovarian cancers (75% of all ovarian cancers). Not elevated in up to 80% of cancers.
2. Alpha-fetal protein and Beta-HCG for germ cell ovarian cancers (5% of ovarian cancers)
3. CEA, carcinoembryonic antigen, for large pelvic lesions that may be primary or metastatic colon cancer.

Symptoms

- Nothing for Stage I and II
- Abdominal distention, early satiety, bowel obstruction, and starvation for advanced disease.

Case 5 with questions: Enlarged pelvic mass

34 you GOP0 has a 6 cm. right adnexal mass present for 3 months. Complex by sonogram. CA-125 is normal.
1. Could this be cancer? Yes. Complex masses present over 6 weeks are real masses. Even a benign serous cystadenoma can change over time to cancer.
2. Could this be endometriosis? Yes. A women age 30 with no pregnancies has a 50% chance of endometriosis. This is the most common reason for a CA-125 to be elevated for benign disease.
3. Is surgery indicated? Yes. Mass complex. Mass present over 6 weeks. Even if endometriosis, this is an endometrioma and endometriomas over 8 mm. should be surgically removed because they generally do not respond to hormone suppression.

Ovarian Tissue Types

1. Inside each ovary is a testicle that can develop cancers: granulose-theca cell, Sertoli-Leydig, gonadoblastoma
2. Epithelial cancers account for 75% of all ovarian cancers. Epithelial ovarian cancers are categorized by the skin that lines their cystic spaces: serous resembles tubal epithelium, mucinous resembles endocervical canal, endometroid resembles the lining of the uterus, and mesonephric resembles transitional epithelium found in the bladder and kidney system.
3. Germ cell cancers (cells that might become follicles) account for 5% of all ovarian cancers.
4. Connective and lymph tissue may develop fibrosarcomas.
5. Metastatic cancer to the ovaries (upper abdomen, colon, breast) usually is bilateral, SOLID, and retains the ovoid shape of the ovaries.

Treatment

1. An operation to diagnosis and stage.
2. Chemotherapy.
3. Irradiation.
4. 5-year follow-up protocol with exams, tumor markers as applicable, periodic sonograms or CTs or MRIs or chest X-rays.

Ovarian Cancer Summary

1. Evaluate every adnexal mass
2. Counsel on ovarian suppression
3. Genetic screening is rarely indicated
4. Use sonograms liberally

Vulva

Vulvar Cancer

1. HPV and HSV may be co-factors
2. 10% of melanomas occur on the vulva, which is only 1% of the skin area of the body
3. Paget's Disease of the vulva is a squamous cell cancer with a 15% chance of an underlying adenocarcinoma
4. Multicentric over time, so keep regular follow-ups
Vulvar Cancer Summary
1. Biopsy vulvar growths
2. Follow-up any lesion that does not heal and go away
3. Keep rechecking after vulvar cancer has been diagnosed.
4. Treatment is wide local excision if caught early enough

Vagina

Vaginal Cancer
- Primary cancer of the vagina is squamous.
- Adenocarcinoma can be metastatic from colon or endocervical canal
- Treat with excision or vaginectomy.

Vaginal Cancer Summary
- Biopsy suspicious lesions that are solid, bleeding, or ulcerative.
- Feel and look at each pelvic examination.

Fallopian Tube Cancer
1. Triad of pain, mass, and a clear, profuse cervical discharge.
2. Rare but very malignant.
3. Treat by removing uterus, tubes, and ovaries.
4. Add progestins and irradiation in advanced cases.

Fallopian Tube Cancer Summary
1. Evaluate all adnexal masses.
2. Be suspicious of a profuse, clear cervical discharge.

Gestational Trophoblastic Disease

Hydatidiform Mole of Pregnancy
1. Histology NOT proportional to malignant potential.
2. Cancer of the fetus, not the woman.
3. Suspect if pregnancy test remains positive or if bleeding continues more than 3 months after end of pregnancy.
4. Curable with one dose of methotrexate if detected early.
5. 50% fatal if diagnosis delayed a year.
6. Beta-HCG is highly elevated

Choriocarcinoma
1. 1 in 1500 Caucasian pregnancies
2. 1 in 150 Asian pregnancies
3. If a woman has a history of a hydatidiform mole, she is 1000 times more likely to develop a choriocarcinoma

Cancer During Pregnancy
1. Treat the woman as if she is not pregnant.
2. Deliver a viable fetus if possible.

Summary of Female Genital Tract Cancers

Summary of Female Genital Tract Cancers
1. Biopsy growths of the vulva, vagina, cervix, or endometrium.
2. Check Beta-HCG levels for fetal cancers.
3. Evaluate adnexal masses for ovarian or tubal cancers.
4. For cancer in pregnancy, treat the cancer primarily.