The Pelvic Exam and Cervical Cancer Screening

Objectives
- Review role of the pelvic exam – screening vs. diagnostic
- Discuss the epidemiology and etiology of cervical cancer
- Review current screening guidelines
- Describe how results are reported
- Explain how to manage abnormal results
- Discuss indications and benefits of the HPV vaccine

What the literature says...
- No evidence for benefits
- Potential harms

PRO or CON: Areas of Agreement
- Take a good history – screening or DIAGNOSTIC?
- Have an informed discussion regarding pros and cons
- Don’t use pelvic exams as a pre-requisite for other care
- Specimen collection (Pap, GC/CT) vs. bimanual exam

Pelvic Exam
- Asymptomatic
  - Screening
- Symptomatic
  - Diagnostic
Why Screen for Cervical Cancer?

- 9,000 cases/year
- Screening reduces mortality
- Never screened: 50% of cases
- No screening in 5 years: 10% of cases

Risk Factors for Cervical Cancer

CHRONIC HPV INFECTION

<table>
<thead>
<tr>
<th>At-risk for contracting HPV</th>
<th>At-risk for not clearing HPV</th>
<th>In utero exposure</th>
<th>Screening access issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple partners HIV</td>
<td>Smoker HIV</td>
<td>DES</td>
<td>Low SES Immigration from place where screening is not norm</td>
</tr>
<tr>
<td>Early age first intercourse (&lt;17)</td>
<td>HIV Imunosuppressed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple pregnancies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term OCP use</td>
<td></td>
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</tr>
</tbody>
</table>

Human Papillomavirus (HPV)

Highest Risk Types
- 16 & 18
  - 70% of cervical cancers

Lowest Risk Types
- 6 & 11
  - Genital warts, mild cervical dysplasia

Incidence of Types 6/11/16/18

<table>
<thead>
<tr>
<th>Age group</th>
<th>Incidence per 100 person years</th>
</tr>
</thead>
<tbody>
<tr>
<td>24-29</td>
<td>7.4 (5.9 – 9.2)</td>
</tr>
<tr>
<td>30-34</td>
<td>3.6 (2.4 – 5.1)</td>
</tr>
<tr>
<td>35-39</td>
<td>2.4 (1.5 – 3.6)</td>
</tr>
<tr>
<td>40-45</td>
<td>1.9 (1.2 – 3)</td>
</tr>
</tbody>
</table>

- New infection is less likely with older age
- Older women are less likely to clear infection

When to Start Screening?

For women under 21...

1. Invasive cervical cancer is extraordinarily rare (<0.1%)
2. HPV is common but usually clears in 1-2 years
3. Cellular immaturity can cause misdiagnosis
4. Dysplasia treatment is associated with premature births
**Women Ages 21-29**

**How Frequently Should We Screen?**

- 3-year intervals with cytology

**No HPV screen**

*useful for triage*

**Compared to annual Pap:**

- Same lifetime cancer risk
- 2x colpo rate with annual screens

---

**Women Ages 30-65**

**How Frequently Should We Screen?**

- **Option 1**
  - Co-testing Cytology and HPV at 5-year intervals
  - Cytology at 3-year intervals if HPV co-testing is not available

**Provide similar benefits**

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**When to Stop Screening?**

- **Hx of high-grade lesion or cancer:** screen routinely for 20 years post-diagnosis

- **Stop at 65** with adequate recent screens AND no hx of ≥ high grade dysplasia in 20 years

- **Do not resume screening once stopped**

**Adequate screening:**

1) 3 consecutive neg Paps, or
2) 2 consecutive neg Paps with neg HPV results in 10 yrs prior to screening cessation with most recent test in last 5 yrs

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**Special Considerations**

- Screen high-risk women more frequently
  - (Hx of high grade cervical lesion, DES exposure in utero, transplant, immunocompromised)

- No screening after hysterectomy if cervix was removed AND no previous high grade lesions or cancer

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**HPV Testing Alone – The future?**

- More data needed
- Not currently recommended

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• Progression to cervical cancer is slow

• HPV will often clear on its own
  - 70% of new infections clear within 1 year; up to 91% in 2 years
  - Patient may remain immune to that subtype for up to 3 years

• Do no harm

• Guidelines don’t always fit
If your exam of the cervix was abnormal, do not be reassured by a normal Pap report...

REFER!

Pap Smear Collection Supplies

- Endocervical brush and spatula used together
  - Brush samples endocervix
  - Spatula samples ectocervix
- Broom can be used alone
  - Longer bristles inserted in os to sample endocervical canal
  - Shorter bristles sample ectocervix

Pap Collection Processes

- Slide preparation method
- Liquid cytology method

Slide preparation method:
Steps 1-3
Liquid cytology method:
Steps 1-2, 4

Pap smear slide
ThinPrep® (one liquid-based cytology brand)

Liquid-based cytology provides:
1. Ability to do reflex HPV testing
2. No differences in detection of high grade lesions
3. Better detection of glandular abnormalities
4. Ability to perform Pap smears during menstruation

Bethesda Reporting System
Specimen Reports

- **Unsatisfactory for interpretation** (not enough cells)
  - Repeat Pap in 2-4 months

- **Satisfactory but no EC/TZ identified or partially obscured**
  - Follow usual screening guideline

Abnormal Pap Smear Terminology

<table>
<thead>
<tr>
<th>Cytology (Pap) terms</th>
<th>Histology (biopsy) terms</th>
<th>Lay terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASC-US</td>
<td>Atypia or metaplasia</td>
<td>Inconclusive; f/up</td>
</tr>
<tr>
<td>ASC-H</td>
<td>Varies</td>
<td>Colpo; 1% cancer</td>
</tr>
<tr>
<td>LSIL or LGSIL</td>
<td>CIN1 (mild dysplasia)</td>
<td>Colpo; 1% cancer</td>
</tr>
<tr>
<td>HSIL or HGSIL</td>
<td>CIN2 (moderate dysplasia)</td>
<td>Colpo; 1-5% cancer</td>
</tr>
<tr>
<td>AGC</td>
<td>Glandular atypia mild/severe Adenocarcinoma in situ</td>
<td>Colpo+endometrial bx; 30% cancer</td>
</tr>
</tbody>
</table>

Epithelial Cell Abnormalities

- **Squamous**
  - Atypical Squamous Cells of Undetermined Significance (ASC-US) - 3% of Pap smears
  - Atypical Squamous Cells, Cannot Rule Out High-Grade Squamous Intraepithelial Lesion (ASC-H)
  - Low-Grade Squamous Intraepithelial Lesion (LGSIL)
  - High-Grade Squamous Intraepithelial Lesion (HGSIL)
  - Squamous Cell Carcinoma - 90% of cervical cancers

- **Glandular**
  - Atypical (AGC)
  - Endocervical Adenocarcinoma in situ
  - Adenocarcinoma - 10% of cervical cancers

When HPV is positive & cytology is normal...

**Women ages 30-65 - Two options**

- Repeat co-testing in 1 year
  - Colpo if HPV+
  - Colpo HPV- with ≥LSIL
  - Co-test in 3 yr if HPV- & ≤ASC-US

- Genotype test for HPV 16/18
  - Colpo if HPV+
  - Co-test in 1 year if HPV-

Pap reports may also mention...

- **Organisms**
  - Trichomonas, herpes changes
  - Candida, gardnerella/bacterial vaginosis, actinomycies

- **Reactive Changes**
  - Inflammation from infection or irritation
  - IUD-related
  - Atrophy
  - Benign endometrial cells

Abnormal Pap Smear Terminology

<table>
<thead>
<tr>
<th>CIN3 risk</th>
<th>Cancer risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 yr</td>
<td>&lt;1% - 4.1%</td>
</tr>
<tr>
<td>3 yrs</td>
<td>2.2% - 7.0%</td>
</tr>
<tr>
<td>5 yrs</td>
<td>5.9% - 9.3%</td>
</tr>
<tr>
<td>&gt;10 yrs</td>
<td>16% - 21.2%</td>
</tr>
</tbody>
</table>

When HPV is positive & cytology is normal...

**Women ages 30-65 (continued)**

Risk at 1 year warrants repeat co-testing in 12 months, but not immediate colposcopy
Managing Abnormal Cytology Results

ASC-US
Three ways to evaluate...

1. **Triage by HPV testing**
   - If high-risk HPV+, refer for colpo (risk of CIN2 or worse is >15%)

2. **Repeat Pap in 12 months**
   - If ASC-US or worse, refer for colpo

3. **Colposcopy**
   - (in selected circumstances)

ASC-H
Atypical squamous cells – cannot exclude HSIL

- Risk of CIN 2 or worse is up to 50%
- HPV triage is not indicated
- Refer for colposcopy

LSIL
Risk of CIN2+ is significant

- Higher risk of CIN3+ for women >25
  - Women >25 yo, refer for colposcopy
  - Women 21-25, repeat Pap in 1 year

No role for HPV testing

- Except to triage postmenopausal women

HSIL
Women of all ages... refer for colposcopy

Glandular Cell Abnormalities

Atypical Glandular Cells (AGC)
- Colposcopy + endometrial biopsy indicated
- High rates of glandular or squamous disease
- Pap smears less sensitive for detecting glandular dysplasia and malignancy

<table>
<thead>
<tr>
<th></th>
<th>CIN2/3</th>
<th>Cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGC-NOS</td>
<td>9.41%</td>
<td>1.9%</td>
</tr>
<tr>
<td>AGC</td>
<td>27.96%</td>
<td>5%</td>
</tr>
</tbody>
</table>
When is HPV Testing Useful?

- Triage ASC-US results
- Follow-up for women post colposcopy / treatment
- Stratify postmenopausal women with LSIL
- Co-test women ages 30-65

When is HPV Testing NOT Useful?

- Women <30 unless ASC-US Pap result (HPV is more likely to be present in this age group)
- Prescreening for HPV vaccination
- STI screening
- Women >25 with ASC-H, LSIL, HSIL (refer for colposcopy regardless of HPV status)

Who needs colposcopy?

ASCCP Guidelines

<table>
<thead>
<tr>
<th>Pap neg AND HPV(+) AND 16/18(+)</th>
<th>ASC-US AND HPV(+) AND ≥ age 25 (21-25 if persistent)</th>
<th>LSIL AND ≥ age 25 (21-25 if persistent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-yr repeat Pap or HPV abnormal</td>
<td>ASC-US x 2 if no HPV testing</td>
<td>HSIL</td>
</tr>
<tr>
<td>ASC-H</td>
<td></td>
<td>ACG</td>
</tr>
</tbody>
</table>

Yes, there’s an app for that!

HPV Vaccines
**Efficacy of HPV Vaccines**

<table>
<thead>
<tr>
<th>% decrease in CIN2+ in vaccine group (vs. placebo)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women who are negative for all vaccine HPV types and following protocol...</td>
</tr>
<tr>
<td>&gt;99%</td>
</tr>
</tbody>
</table>

Nearly identical for both bivalent/quadrivalent vaccines

**HPV Vaccine Facts**

- More effective if no prior HPV exposure, but ok to give even with known HPV
- Protects at least 7-10 years
- Don’t test for HPV before vaccinating
- $125/dose, $375 for full series
- Gardasil® on VA formulary
- Does not replace regular screening

**Gardasil® and Gardasil 9®**

- Gardasil: quadrivalent vaccine for subtypes 6/11/16/18
  - Women and men ages 9-26
- Gardasil 9: 9-valent vaccine for 6/11/16/18/31/33/45/52/58
  - Women ages 9-26; men ages 9-15
- Similar dosing: three 0.5-mL doses IM at 0, 2, 6 months
- Prevent CIN, genital warts, anal/vulvar cancers and precursors

**Cervarix®**

- Bivalent vaccine for subtypes 16/18
- Women ages 9-26
- Three 0.5-mL doses IM at 0, 1, 6 months
- Prevents CIN 2/3, less protection for genital warts

**Three HPV Vaccines**

**Efficacy of HPV Vaccines**

% decrease in CIN2+ in vaccine group (vs. placebo)

<table>
<thead>
<tr>
<th>Women who are negative for all vaccine HPV types and following protocol...</th>
<th>Women who may have had prior HPV exposure and/or did not follow protocol...</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;99%</td>
<td>45 – 55%</td>
</tr>
</tbody>
</table>

Nearly identical for both bivalent/quadrivalent vaccines

**HPV Vaccine Contraindications and Risks**

- Not for women with
  - Pregnancy
  - Moderate to severe acute illness
  - Yeast allergy

**Adverse events**

- Fainting in adolescents likely due to injection process (keep patient in the area for 15-20 min)

**What to do if a patient has begun but not completed the HPV vaccine course...**

- If the vaccination series is interrupted for any length of time, it can be resumed without restarting the series

**Summary**

- Follow screening guidelines
- ASC-US HPV+ or worse: refer for colposcopy
- Long-term follow-up for history of high grade
- HPV Vaccinations: safe and effective
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Vaginitis and Sexually Transmitted Infections

Objectives
- Identify common causes of vaginitis
- Describe risks, symptoms, treatment, prevention strategies, and patient education for common vaginal infections
- Explain the components of a good sexual history
- Discuss how to evaluate risk for sexually transmitted infections (STIs) and how they present in women

Vaginitis

1. Common reason U.S. women visit the provider
2. More than 10 million office visits yearly
3. Can be related to infections that are transmitted by sexual contact

Most Common Causes of Vaginitis
- Overgrowth of vaginal flora/organisms
- Sexually transmitted infections
- Non-infectious causes

Initial Questions

<table>
<thead>
<tr>
<th>Timing</th>
<th>How long? First time or recurrence?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Odor? Itching? Bleeding?</td>
</tr>
<tr>
<td>Sexual history</td>
<td>New partners?</td>
</tr>
<tr>
<td>Medications</td>
<td>Recent antibiotics?</td>
</tr>
<tr>
<td>Comorbidities</td>
<td>HIV? Diabetes?</td>
</tr>
<tr>
<td>Personal habits</td>
<td>Douching? Lubricants?</td>
</tr>
</tbody>
</table>

Approach to Vaginitis

- Assess discharge (color, viscosity, odor, adherence to vaginal walls)
- Examine for cervicitis
- Diagnostic testing (pregnancy, pH, wet mount, cultures, BD Affirm)
- Consider pregnancy risk (discuss birth control/emergency contraception)
Bacterial Vaginosis (BV)

- Imbalanced vaginal flora
- Most common cause of discharge, but 50% of women asymptomatic
- Risk factors: douching, deodorant sprays, contact irritants
- Associated with acquiring STIs, pregnancy complications, post-op infections

BV Treatment

First choice
- Metronidazole 500mg BID x 7 days

Second choice
- Metronidazole gel or clindamycin cream

Treat symptomatic patients

90% of vaginitis cases

Diagnostic options

- pH paper/wet mount/KOH
- Vaginitis DNA probe
- Bacterial culture
- Gonorrhea/Chlamydia NAAT of urine
- Gonorrhea/Chlamydia NAAT of cervix

Bacterial Vaginosis

- Symptoms
  - Fishy odor
  - Thin, milky-white discharge

- Exam
  - Discharge smoothly coats vaginal walls

- Diagnosis
  - Wet mount or vaginitis DNA probe

Patient Education for BV

NOT an STI
Partners don’t need treatment

Avoid douching, scented panty liners, topical irritants

30% recurrence rate in 3 mos, 50% in 12

Avoid douching, scented panty liners, topical irritants
**Vulvovaginal Candidiasis (Yeast infection)**

- Overgrowth of normal vaginal flora
- 75% of women experience during lifetime
- 50% have recurrences
- **Risk factors:** antibiotics, DM, pregnancy, immunosuppression, HIV, corticosteroids, exogenous estrogens, douching, spermicides

**Symptoms**
- Itching, redness, burning with urination
- No odor

**Exam**
- Thick, clumpy, cottage cheese discharge
- Vulvar induration, fissures

**Diagnosis**
- Wet mount or vaginitis DNA probe

---

**Treatment: Vulvovaginal Candidiasis (VVC)**

- **Uncomplicated**
  - Oral fluconazole or intravaginal anti-fungal

- **Severe VVC/Compromised host**
  - Extended course

- **Recurrent VVC**
  - Extended course + suppressive therapy

- **Non-albicans VVC**
  - Non-fluconazole therapy

**Sexual partners do not need to be treated**

**Avoid douching or feminine sprays**

**Plastic or polyethylene condoms during treatment**

---

**Patient Education for Candidiasis**

- **Sexual partners do not need to be treated**
- **Avoid douching or feminine sprays**
- **Plastic or polyethylene condoms during treatment**

---

**Trichomoniasis**

- 70-85% of women are asymptomatic
- **Risk factors:** multiple partners, low SES, STI history
- Can last for years without treatment
- May facilitate HIV transmission

**Symptoms**
- Frothy, yellow-green discharge
- Vaginal itching, irritation, occasional dysuria
- Sometimes asymptomatic/No odor

**Exam**
- Vaginal discharge
- Strawberry cervix (10% of cases)

**Diagnosis**
- Wet mount or vaginitis DNA probe
Trichomoniasis Treatment

- Metronidazole 2 grams x 1
- Sexual partners must be treated
- No metronidazole during first trimester of pregnancy - increased risk of kernicterus

Remember Other Causes of Vaginitis

- Atrophic vaginitis
- Retained foreign body
- Allergic reaction
- Surgical site infection
- Post-childbirth granulation tissue
- Erosive lichen planus
- Lichen sclerosis
- Pemphigoid
- Malignancy

25-40% of symptomatic patients will not have a specific cause after diagnostic testing

Patient Education for Trichomoniasis

- Metronidazole side effects with alcohol
- May facilitate HIV transmission
- Partner must be treated
- Can reoccur; re-evaluate if symptoms persist

Sexually Transmitted Infections (STIs)

- Found in cervix, urethra, throat, rectum
- 75% of women are asymptomatic
- PID due to chlamydia can lead to scarring, infertility, tubal pregnancy
- Perinatal transmission results in neonatal conjunctivitis in 30-50% of exposed babies

The Sexual History

- Partners: Men, women, both? Number of partners in past 2 mo? In past 12 mo?
- Protection from STIs: What is she doing? What is her understanding of what she should be doing?
- Past hx of STIs: Previous STIs in her or partner(s)?
- Pregnancy prevention: What is she using?
**Chlamydia**

**Symptoms**
- Frequent/urgent urination with burning
- Vaginal discharge
- Post-intercourse light bleeding
- Abdominal pain

**Exam**
- Cervicitis, signs of PID (cervical motion tenderness, lower abdominal pain)

**Diagnosis**
- NAAT preferred (determine method of swab vs. urine)
- DFA (not as sensitive)

**Screening Asymptomatic Women (USPSTF)**
- Yearly for all sexually active women ≤ 24yo
- Yearly for sexually active women > 24yo with risk factors
  - African American, new male sex partner, 2+ partners in last year, inconsistent condom use, hx of prior STI
- All pregnant women at first prenatal visit

**Chlamydia Treatment**

Antibiotics (azithromycin 1 g orally in single dose or doxycycline 100 mg orally twice daily x 7 days)

Retest at 3 months or when patient seeks care in next 12 months

Evaluate and treat partners

**Gonorrhea**

- Grows in vagina, cervix, urethra, mouth, throat, eyes, anus
- Can present with Bartholin’s gland involvement
- Less common presentations include: PID, perihepatitis (Fitz-Hugh-Curtis)
- 50% of women asymptomatic
- Penetration to women in 50% of sexual encounters

**Gonorrhea Treatment**

Dual therapy with Ceftriaxone as single IM dose, plus either azithromycin or doxycycline

**Symptoms**
- Painful urination
- Vaginal discharge
- Bleeding between periods

**Exam**
- Cervicitis, Bartholin gland swelling, evaluate for PID or other locations

**Diagnosis**
- NAAT, DNA probe, endocervical culture
Risk of PID

Increases susceptibility to HIV infection

Partner should be evaluated

Return for unresolved sx or those returning in 1-2 weeks

Re-test in 3-6 mos to rule out re-infection

Education for Gonorrhea/Chlamydia

Genital Herpes Simplex Virus (HSV-2)

- 25% of the population has serological evidence
- Contact transmission
- Complications: viral encephalitis
- Asymptomatic shedding
- Outbreaks can occur 4-5 times per year; most frequent in first year

CDC Minimal Criteria for Empiric Treatment of PID

Sexually active young woman with lower abdominal/ pelvic pain

- No other cause for illness identified

PLUS at least 1 other finding

- Cervical motion tenderness
- Uterine tenderness
- Adnexal tenderness

Genital Herpes

Diagnosis

- PCR (asymptomatic virus shedding)
- Viral culture for active lesions
- Direct fluorescent antibody for clinical specimens

Treatment

- Oral antiviral meds
- Consider suppression for recurrent outbreaks
- Analgesics for pain

Syphilis

40,000 new cases/year

Primary: chancre or ulcer

Secondary: rash, lymphadenopathy

Tertiary: CNS, vascular, gumma

Patient Education for Genital Herpes

No cure
Sx may recur
Identify triggers (menses, stress, intercourse, sunbathing)

Inform partners
Can be transmitted when sx not present

Increases likelihood of spreading HIV
Inform provider if become pregnant

Condyloma lata lesions (secondary syphilis)
Syphilis

Diagnosis
- Nontreponemal = VDRL, RPR, TRUST
- Treponemal = FTA-ABS, TP-PA, EIA

Treatment
- Early/secondary: single-dose benzathine penicillin
- Late latent/unknown duration: benzathine penicillin (1 dose/wk x 3 consecutive wks)
- Clinical & serological FU test at 6 & 12 mo

Return for 6- and 12-month serologies
Screen during pregnancy
Partners should be treated
Increases likelihood of getting HIV

Patient Education for Syphilis

HPV-Related Genital Warts
(subtypes 6 and 11)

- Benign but very contagious
  - Can take 6 mos to develop
  - Women can be infected with no sx
- Pink or flesh-colored, raised/flat spots (cauliflower-like)
- Occur inside/outside vagina or anus, on nearby skin, cervix, lips, mouth, tongue, throat

Treatment
- Creams (Podophyllin TCA, Aldara or imiquimod 5%)
- Cryosurgery, lasers, electro-cauterization, excision

Non-curable, can return
Benign, but very infectious
Condoms help prevent infection; don’t cover all skin
Topical treatments can cause changes in pigmentation
Gardasil™ for <27 yo

Patient Education for Genital Warts

Human Immunodeficiency Virus (HIV)

Growing problem for older women Veterans; women have a higher seropositivity than men

Testing:
- CDC: screen everyone for HIV, any time at any site at least once, and yearly for anyone at risk
- VA: no age limit; verbal consent required; no pre-post test counseling required; must provide written info
- POC testing now available (OraQuick®)
- VHA directive currently being updated

VHA has Guidance Statements on Clinical Preventive Services
- Screenings, immunizations, brief health behavior counseling, preventive medications

Approved statements are posted
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Menopause

Case 1
Jenny

Jenny, a 45-year-old Veteran, presents complaining of irregular menstrual cycles and hot flashes for the last 6-9 months.

She asks you to “check her hormones” to see if she is going through menopause.

Objectives

- Define menopause and perimenopause
- Appropriately assess women presenting with menopause-like symptoms
- Review common symptoms and discuss management options

Menstrual Changes in Perimenopause

<table>
<thead>
<tr>
<th>“Normal” flow</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 21-35 days apart</td>
<td>• 4-8 years before menopause</td>
</tr>
<tr>
<td>• Duration: 3-7 days</td>
<td>• Cycle length: may stretch to every 60-90 days or shorten to every 20 days</td>
</tr>
<tr>
<td>• Reddish-brown, slightly darker than venous blood</td>
<td>• Duration: 1 day to 10-12 days</td>
</tr>
</tbody>
</table>

Initial Assessment

- Make sure it is not...
  - Cardio-pulmonary
  - Infection
  - Hypoglycemia
  - Med reaction
  - Thyroid
- Identify triggers...
  - Situations
  - Stress
  - Food/alcohol intake
- Determine impact on the Veteran...
  - Physical
  - Emotional
  - Psychosocial

Menopause

- Premature Menopause
  - Loss of menstrual cycles before 40

Perimenopause

- Transition from regular ovulatory cycles toward permanent infertility
- Includes 1 year after last cycle

Menopause

- Permanent cessation of menstruation due to loss of ovarian function
- No menses for >12 mos in women >45
- Average age is 51
Pregnancy is still possible...

Case 1
Jenny
(continued)

Jenny notes that her irregular menses and hot flashes are very frustrating. She also notes trouble sleeping and feeling irritable.

“How long will I feel this way?”

Perimenopausal and Menopausal Symptoms

Menopausal Symptoms

- Loss of libido
- Mood swings
- Hot flushes
- Insomnia
- Hair changes
- Headache
- Poor concentration, memory lapses
- Urogenital symptoms
- Anxiety, irritability, depression

Vasomotor Symptoms

- 50 - 82% of women
- Duration 4 - 10.2 years
- Feelings of intense heat for 30 seconds to 10 minutes
- Earlier onset of VMS predicts longer duration

Vasomotor Symptoms

Risk Factors

- Smoking
- Physical inactivity
- Obesity (perimenopausal and early postmenopausal women)
- Surgical menopause
- Race (African American/obese White women highest; Japanese/Chinese lowest)
Treatment for perimenopause symptoms are similar to those for menopause

- Low-dose OCP for nonsmokers
  - Can discontinue at age 50-51 when she is likely in menopause
- Cyclic progesterone
- Mirena IUD

Women with menopausal issues...

- Ask about menstrual cycles
- Ask about vasomotor symptoms
- Screen for mental health issues
- Consider pregnancy test

Role of the PACT

Case 2: Becky

Becky, a 55-year-old female with a history of obesity and smoking, presents complaining of 6-7 hot flashes per day and waking up nightly drenched in sweat. LMP was 2 yrs ago. She feels fatigued and crabby most of the time. The hot flashes are limiting her social activities and impairing her quality of life.

“Can you help me?”

Use a patient-centered approach...

What is most important to her?
How are her symptoms affecting her daily routine?
What risk factors does she have?
How important is it to her to manage her symptoms?
How does she feel about medications?
What lifestyle changes is she willing/able to make?

Case 2: Becky

Upon further discussion, you discover that while her vasomotor symptoms are making her miserable, Becky doesn’t want any medications as she has heard “bad things” about hormone therapy.

She asks if there are any non-medication strategies.

Lifestyle Changes

- Identify triggers and avoid if possible
- Dress in layers
- Sip a cold drink when flushes occur
- Adjust room temperatures
- Use fans at home or in the workplace
- Lose weight to decrease flush frequency
- Don’t smoke
<table>
<thead>
<tr>
<th>Mind-Body Therapy</th>
<th>Efficacy</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Paced respiration</td>
<td>Mixed results</td>
<td></td>
</tr>
<tr>
<td>• Acupuncture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Yoga</td>
<td>Possibly effective? Helps insomnia.</td>
<td>Small pilots, one randomized controlled trial</td>
</tr>
<tr>
<td>• Exercise</td>
<td>Negative effect on flushes. Benefits sleep.</td>
<td>Raises core body temp, thus triggering flushes</td>
</tr>
<tr>
<td>• Stress management</td>
<td>No effect</td>
<td></td>
</tr>
<tr>
<td>• Relaxation therapy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Homeopathy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Magnet therapy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Women who smoke cigarettes...**

- Are 40% more likely to go into menopause earlier than nonsmokers
- Have more severe hot flushes, sleeping difficulties
- Are 35% more likely to break a hip after menopause

**Case 2 Becky**

Becky agrees to try lifestyle changes to manage her vasomotor symptoms including signing up for a yoga class at her gym.

Unfortunately, she returns 6 months later and notes that her symptoms have worsened and she is now ready to consider hormone therapy.

**Hormone Therapy (HT)**

Estrogen therapy seemed logical based on the hypothesis that menopause:

- Decreased estrogen leads to Accelerated cardiovascular disease

Thus... giving estrogen would protect the heart

**Hormone Therapy**

- 1960. Estrogen is the Fountain of Youth!
- 1970s. Poison! (linked to endometrial ca)
- 1980s: Good! (prevents osteoporosis)
- 1990. Use expands! (protects the heart)
- 2002. Poison! (WHI study)
- 2015?

**Women’s Health Initiative (WHI)**

Prospective study of estrogen + progesterone (Prempro) or estrogen alone on risks for CHD, breast cancer, hip fracture

- E+P for women with intact uterus
- E alone for women without
### WHI Results

<table>
<thead>
<tr>
<th></th>
<th>E+P vs. placebo</th>
<th>Hazard ratio</th>
<th>E only vs. placebo</th>
<th>Hazard ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHD</td>
<td>164 vs. 122</td>
<td>1.29</td>
<td>177 vs. 199</td>
<td>0.91</td>
</tr>
<tr>
<td>Stroke</td>
<td>127 vs. 85</td>
<td>1.41</td>
<td>158 vs. 118</td>
<td>1.39</td>
</tr>
<tr>
<td>DVT/PE</td>
<td>151 vs. 67</td>
<td>2.13</td>
<td>101 vs. 78</td>
<td>1.33</td>
</tr>
<tr>
<td>Breast ca</td>
<td>166 vs. 124</td>
<td>1.26</td>
<td>94 vs. 124</td>
<td>0.77</td>
</tr>
<tr>
<td>Colon ca</td>
<td>45 vs. 67</td>
<td>0.63</td>
<td>61 vs. 58</td>
<td>1.08</td>
</tr>
<tr>
<td>Hip fx</td>
<td>44 vs. 62</td>
<td>0.66</td>
<td>38 vs. 64</td>
<td>0.61</td>
</tr>
<tr>
<td>Death</td>
<td>231 vs. 218</td>
<td>.98</td>
<td>291 vs. 289</td>
<td>1.04</td>
</tr>
</tbody>
</table>

No beneficial effect of HT on cognitive function in older post-menopausal women when given for up to 5 years


### Timing of HT and CHD

Most WHI women menopausal for at least a decade

- Older women likely had more extensive subclinical atherosclerosis

Hypothesis: prothrombotic and proinflammatory effects of estrogens occur primarily in women with subclinical lesions

- Conversely, women with less arterial damage who start HT early in menopause may derive cardiovascular benefits


### Further Analyses of WHI Data

Both arms re-analyzed to look for trends in effect of HT on CHD, stratified by age and years since menopause

Women who started HT closer to menopause tended to have reduced CHD risk vs. increased risk seen in women more distant from menopause (trend not statistically significant)


### Extended Follow-up of WHI Data

Neither regimen significantly affected all-cause mortality during or after intervention phase

- E-alone: Subset women 50-59 = ↓ MI & all-cause mortality
- E+P: ↑ CHD risk in older women; inconclusive for younger

Risk–benefit ratio of HT most favorable when started in younger menopausal women

- Most risks/benefits from HT dissipate after stopping

Manson JE et al. JAMA, 2013.

### Breast Cancer Risk with HT

WHI: risk higher with E+P when used >5 yrs; no risk for estrogen alone

F/U studies: risk increased if HT started shortly after menopause vs. after several years' delay

Timing for breast ca risk is opposite that for CAD risk!

Moderate-severe vasomotor symptoms related to menopause in healthy women

Not for chronic disease prevention

Do not start HT if >10 yrs after menopause

Systemic hormones for short-term use only (<5 yrs)

Current Indications for HT

Individualized decision based on risks for CVD, breast ca, osteoporosis as well as QOL

Breast/endometrial ca
Porphyria
Thromboembolic dz
Unexplained vaginal bleeding
Acute CVD
Immobilization

Contraindications for HT

• Known CAD or hx CVA
• Hypertriglyceridemia
• Atypical ductal hyperplasia of breast
• Active liver/gallbladder dz
• Uncontrolled HTN
• Migraines

Most women who want HT will want it within 5 yrs

Many more women will die of CAD vs. breast ca

With E+P <5 yrs, absolute ca risk is very low (lower than 1 alcoholic drink/day)

For women with avg cancer risk and significantly impairing hot flashes, recommend HT initiation when symptom control is needed most (early!)

HT and Shared Decision-Making:

Ultimately, it comes down to risks vs. benefits

Hormone Therapy Initiation

All routes of systemic therapy equally effective

• Transdermal lower risk of VTE vs. oral

Use lowest effective dose

• CEE 0.625mg/day oral (estradiol 50 mcg) or lower

Continuous regimen associated with fewer hot flashes

• Women on this regimen typically amenorrheic


Don’t forget progesterone!

For women with a uterus, add progesterone to protect against endometrial hyperplasia and cancer

2.5 mg of MPA per day
Compounded Bioidentical Hormones

- Typically custom-compounded; similar in chemical composition to those made endogenously
- No more effective than traditional HT; similar risks/side effects
- Educate patients in same manner as FDA-approved HT
- No rigorous RCTs to test safety/efficacy
- May combine several hormones, use non-standard routes of administration

Hormone Therapy Discontinuation

- No optimal approach for immediate cessation vs. taper
- Try prolonged 6-12 month taper if symptoms recur after an abrupt stop
- NAMS: extended use of HT is reasonable for women who feel benefits of symptom relief outweigh risks

Jessica is a 53-year-old Veteran with a history of ER/PR+ breast cancer s/p treatment 2 years ago and a current smoker.

She presents with a complaint of “always being angry these days”. Friends and co-workers have commented on her irritability, frequent hot flashes, red face, and sweating.

Case 3 Jessica

Non-Hormonal Medication Options

<table>
<thead>
<tr>
<th>Placebo</th>
<th>~30% reduction in hot flushes</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSRIs</td>
<td></td>
</tr>
<tr>
<td>~ Not FDA-approved except for Paxil 7.5mg daily</td>
<td></td>
</tr>
<tr>
<td>Usually relieve symptoms in ~1 week</td>
<td></td>
</tr>
<tr>
<td>Mechanism of action unknown (hypothalamus?)</td>
<td></td>
</tr>
<tr>
<td>Low doses avoid some common side effects</td>
<td></td>
</tr>
<tr>
<td>Caution paroxetine/fluoxetine with tamoxifen</td>
<td></td>
</tr>
</tbody>
</table>

Alternatives to Estrogen for Hot Flushes

Medications

<table>
<thead>
<tr>
<th>Medication</th>
<th>Decrease in hot flush score</th>
</tr>
</thead>
<tbody>
<tr>
<td>VENLAFAXINE (Effexor): antidepressant, 37.5 - 150 mg</td>
<td>27-61%</td>
</tr>
<tr>
<td>Desvenlafaxine (Pristiq): antidepressant, 100 &amp; 150mg</td>
<td>60-65%</td>
</tr>
<tr>
<td>Fluoxetine (Prozac): antidepressant, 20 mg</td>
<td>40-50%</td>
</tr>
<tr>
<td>PAROXETINE (Paxil): antidepressant, 10 - 25 mg</td>
<td>38-62%</td>
</tr>
<tr>
<td>FDA-approved to treat menopausal hot flushes</td>
<td></td>
</tr>
<tr>
<td>Escitalopram (Lexapro): antidepressant, 10 - 20 mg</td>
<td>47%</td>
</tr>
<tr>
<td>Citalopram (Celexa): antidepressant, 10 - 30 mg</td>
<td>23-55%</td>
</tr>
<tr>
<td>GABAPENTIN (Neurontin): anti-seizure, 300 - 2400 mg</td>
<td>45-65%</td>
</tr>
</tbody>
</table>

ACOG practice bulletin 141, 2014; Casper et al. UpToDate, 02/14/11, literature review through 11/14.
Menopause and Herbal Preparations

Data is extremely limited. Most studies indicate no effect. Patient education for herbal preparations:
- May help symptoms, but we know little about all potential risks/side effects, especially with long-term use
- May interact with prescribed medications or increase risk for other conditions (e.g., estrogenic herbs may pose a risk for women with a history of/are at risk for breast cancer)
- Are not regulated as carefully by the FDA; dose may vary from batch to batch and there may be unknown contaminants
- If decide to use, let provider know ahead of time and bring bottles to visits so provider can see exact ingredients

Summary managing hot flushes
- Systemic HT most effective for mod-severe vasomotor sx
- Combined systemic HT risks=thromboembolic dz, breast ca
- Non-oral approach safer (no RCT evidence)
- Lowest effective dose continuously; evaluate yearly
- Estrogen + progesterone for women with uterus
- Consider non-hormonal alternatives (venlafaxine, gabapentin, paroxetine)
- Encourage smoking cessation, lifestyle changes, weight loss

Supporting women with menopausal complaints...
Role of the PACT
- Ask about methods that the patient is using to control hot flashes
- Encourage smoking cessation and weight loss
- Can help with follow up on efficacy of HT

Managing Menopausal-Related Vaginal and Urinary Symptoms

Vaginal Atrophy: Anatomical Changes

| Decreased vaginal moisture |
| Narrow introitus |
| Loss of labial and vulvar fullness |
| Pallor of urethral and vaginal epithelium |
| Loss of urethral meatal turgor |

Case 3
Jessica (continued)

After discussing non-hormonal treatment options, Jessica selects venlafaxine for her hot flashes.
6 months later, she returns and reports an improvement in her hot flashes. However, she notes that she continues to have severe vaginal dryness which is impairing her sex life.
**Vulvovaginal Atrophy (VVA)**

- Vaginal dryness, irritation, +/- discharge
- Dyspareunia (painful intercourse)
- Urinary sx (frequency, dysuria, incontinence)
- Physical exam changes
- Common in women on aromatase inhibitors or tamoxifen

**Differential for VVA**

- Autoimmune disorders
- Allergic or inflammatory conditions
- Chronic vaginitis
- Trauma
- Foreign bodies
- Vulvodynia
- Psychological disorders

---

**Sexual Function & Menopausal Symptoms**

- 75% middle-aged US women...
  - Sexual activity is moderately to extremely important
- Large cohort studies...
  - Vaginal dryness: 27% - 55% of women
  - Dyspareunia: 32% - 41%
- Common menopausal sx associated w diminished libido:
  - Depression (P=.003), insomnia (P=.02), night sweats (P=.04)

Cain VS et al., 2003; Reed SD et al., 2007; SOGC clinical practice guidelines #145, 2005.

---

**VVA Management**

<table>
<thead>
<tr>
<th>Lubricants</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTC</td>
<td>• Eases pain during intercourse</td>
<td>Doesn’t change vaginal tissue</td>
</tr>
<tr>
<td>Moisturizers</td>
<td>OTC</td>
<td>• Eases symptoms</td>
</tr>
<tr>
<td>Vaginal estrogen</td>
<td>Rx</td>
<td>• Eases symptoms</td>
</tr>
</tbody>
</table>

---

**Vaginal Estrogen Comparison**

<table>
<thead>
<tr>
<th></th>
<th>Cream</th>
<th>Ring*</th>
<th>Tablet*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dose</td>
<td>0.5-2gm nightly for 2 weeks, then 2x/week</td>
<td>5-10 mcg daily. Replace every 3 mos.</td>
<td>10 mcg nightly for 2 weeks, then 2x/week</td>
</tr>
<tr>
<td>Safety</td>
<td>No reports of endometrial ca</td>
<td>No endometrial proliferation at 1yr</td>
<td>No reports of endometrial ca</td>
</tr>
<tr>
<td>Notes</td>
<td>No rise in serum estrogen</td>
<td>Can achieve systemic estrogen levels</td>
<td>No systemic or endometrial absorption</td>
</tr>
</tbody>
</table>

*C* Non-formulary


---

**Relieves atrophy**

- May benefit sexual function
- Low dose is effective
- All preps equally effective
- Progesterone generally not needed for low-dose vaginal estrogen
- No endometrial safety data for use >1 yr

**VVA: Local Estrogen**

**Advantages**

- Involve oncologist in discussion of vaginal estrogen for breast cancer survivors if a hormone-sensitive cancer

**Disadvantages**

NAMS position statement 2012; Suckling J et al., 2006; Rahn DD et al., 2014.
VVA: Systemic Estrogen

Systemic estrogen is not recommended for VVA treatment

Why incur systemic risks for a local problem?


Urinary Incontinence and Estrogen

Prevalence during menopausal transition is 8-56%

May improve with *local estrogen* therapy

- Unknown if benefits continue after stopping
- No info on long-term effects

Randomized trials: oral estrogen worsens incontinence


UTIs and Estrogen

*Oral estrogens* don’t reduce UTIs vs. placebo

2 studies: *vaginal estrogens* reduced number of UTIs in postmenopausal women with recurrent UTI

*Intravaginal estrogen* for postmenopausal women with 3+ UTIs/year, especially if resistance to multiple drugs limits antimicrobial prophylaxis


Other Considerations

- Vaginal dilators
- Pelvic floor physical therapy
- Reinitiate regular sexual activity
- Ospemifene

Summary: VVA Management

First-line: lubricants with intercourse and, if indicated, regular use of long-acting vaginal moisturizers

Estrogen for moderate-severe symptoms or if no response to lubricants and moisturizers

Spotting or bleeding in postmenopausal women requires thorough evaluation


For more info, see Female Sexual Dysfunction lecture on VeHU

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Palo Alto, CA

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Durham VA Medical Center
Durham NC
**Breast Issues**

**Objectives**
- Explain the guidelines and practices for breast cancer screening and breast cancer risk assessment
- Define the role of breast density in breast cancer risk and discuss the controversy surrounding management
- Describe the appropriate steps for breast mass triage and management
- Identify the causes and management of breast abnormalities in pregnancy and lactation

**Case 1**
A 43-year-old woman with no medical problems arrives to see you for a routine visit. She tells you that her friend (who is the same age) was just diagnosed with breast cancer. She asks what she should be doing to screen for breast cancer.

**Breast Self-Examination (USPSTF)**
- Recommends against TEACHING breast self-exam
  - Doesn’t mean USPSTF opposes breast self-exam
- Screening grade D: harms outweigh benefits
  - Finding lumps that turn out to be normal leads to anxiety and unnecessary visits, imaging, and biopsies

**Methods to Evaluate the Breast**

**Teach Breast Self-Awareness**
- Be familiar with breasts
- Promptly report changes to provider
- Premenopausal women: examine breasts 1 week after menses ends
Clinical Breast Exam (USPSTF)

Screening grade I

- Current evidence is insufficient to assess additional benefits and harms of clinical breast examination beyond screening mammography for women 40 years or older

Discuss pros/cons of clinical breast exam with patient and include her in the decision

Mammography Screening (USPSTF)

Regular, biennial screening: women 40-49

- Decision to start before 50 should be individual one, taking patient context into account including patient values on specific benefits/harms (Grade C)

Regular, biennial screening: women 50-74

- Moderate net benefit (Grade B)

Regular, biennial screening: women 75+

- Current evidence insufficient to assess additional benefits/harms (Grade I)


USPSTF 2015 Draft Guidelines for Breast Cancer Screening

<table>
<thead>
<tr>
<th>Women 40-49 years</th>
<th>2009 (current)</th>
<th>2015 DRAFT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision should be an individual one</td>
<td>Decision should be an individual one</td>
<td></td>
</tr>
</tbody>
</table>

| Women 50-74 years | Biennial screening mammography | Biennial screening mammography |

| Women, 75 years and older | Current evidence is insufficient to assess the benefits and harms | Current evidence is insufficient to assess the benefits and harms |

Mammography: In the News

Twenty-five year follow-up for breast cancer incidence and mortality of the Canadian National Breast Screening Study: Randomised screening trial.

Miller et al. BMJ 2014;348:366

- 89,835 women ages 40-59 randomly assigned to:
  - mammography plus annual physical exam or
  - no mammography (plus a single physical exam for 40-49y; annual physical exam alone for 50-59y)

Implications

- No demonstrated mortality benefit (for women in 40-49y or 50-59y age groups at diagnosis)
- 22% of breast cancers detected by mammogram would not have become clinically apparent during the lifetime of a woman screened
- Is screening worthwhile in technologically advanced countries where there is access to comprehensive breast cancer treatment?

Back to the Case...

- You discuss the current guidelines for breast cancer screening with your 43-year-old patient.
- She tells you she is still a little unsure about how to decide whether to start screening now or wait until she is 50....

<table>
<thead>
<tr>
<th>2009 (current)</th>
<th>2015 DRAFT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decision should be an individual one</td>
<td>Decision should be an individual one</td>
</tr>
</tbody>
</table>

| Biennial screening mammography | Biennial screening mammography |

| Current evidence is insufficient to assess the benefits and harms | Current evidence is insufficient to assess the benefits and harms |

| 2015 DRAFT |
|------------|-----------|
| Decision should be an individual one | Decision should be an individual one |

| Biennial screening mammography | Biennial screening mammography |

| Current evidence is insufficient to assess the benefits and harms | Current evidence is insufficient to assess the benefits and harms |
To Screen or Not to Screen: Ages 40-49

• There is no single correct answer!
• 2007 ACP Clinical Practice Guideline for Screening Mammography in Women ages 40-49
  − Periodic INDIVIDUALIZED assessment of breast cancer risk
  − Discuss benefits vs. harms of screening
    • Benefits: diagnose cancer earlier, assessment of breast density
    • Harms: false positives and resultant testing, detecting, and treating a cancer that would not have become clinically evident
  − Discuss INDIVIDUAL patient preferences


Case 2

• A 50-year-old woman comes to your office for a routine visit. You take some time during the visit to update her family history. She tells you that her sister has been diagnosed with breast cancer at age 52. She asks, “Should I be worried about getting breast cancer too?”

Goals of Breast Cancer Risk Assessment

1. Determine if a woman should be referred for genetic counseling/testing for genetic mutations that carry increased risk for breast cancer
   − Appropriately managing women with BRCA1/2 mutations decreases breast cancer incidence 80-95%
2. Estimate a woman’s risk for developing breast cancer, and discuss risk reduction strategies as indicated
   − Enhanced screening, lifestyle changes, pharmacologic prevention, prophylactic surgery


<table>
<thead>
<tr>
<th>Recommendation</th>
<th>VHA</th>
<th>USPSTF Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teach breast self-exam</td>
<td>Against</td>
<td>D: Harms &gt; benefits</td>
</tr>
<tr>
<td>Clinical exam for screening beyond mammography for women 40+</td>
<td>Neither for nor against</td>
<td>I: Insufficient evidence</td>
</tr>
<tr>
<td>Biennial screening mammography: avg risk women &lt;50</td>
<td>Individual decision</td>
<td>C: Small net benefit; may support doing for individual patient</td>
</tr>
<tr>
<td>Biennial screening mammography: women age 50-74</td>
<td>Recommend</td>
<td>B: Moderate net benefit</td>
</tr>
<tr>
<td>Mammography screening: women 75+</td>
<td>Neither for nor against</td>
<td>I: Insufficient evidence</td>
</tr>
</tbody>
</table>
Indications for referral for genetic counseling

- BRCA 1/2 mutation in family
- Breast ca before age 50 in affected relatives
- Bilateral breast ca
- Family history ovarian ca
- ≥ 2 breast cancers same side of family
- Male relatives with breast ca
- Ashkenazi Jew and a family history breast/ovarian ca

Goal #2: Estimate overall risk and discuss risk reduction strategies

Risk factors for breast cancer

- Dense breasts
- First degree relative with breast ca
- Current oral contraceptive
- Hx benign breast biopsy
- Obesity (postmenopausal)
- Caucasian
- More estrogen exposure
- Nulliparity
- Alcohol and/or smoking
- Chest radiation

Breast Cancer Risk Assessment Tool

http://www.cancer.gov/bcrisktool/

Breast Cancer Surveillance Consortium (BCSC) Risk Calculator

https://tools.bcsc-scc.org/BCSyearRisk/calculator

Back to the Case...

- You determine, after obtaining a detailed family history, that your patient does not meet criteria for genetics counseling referral
- You discuss other breast cancer risk factors and use the Gail and the BCSC models to calculate her 5-year and lifetime risk for breast cancer (using breast density from her last mammogram)
Breast Cancer Risk Assessment

**Gail Model**
- Age: 50
- Age menarche: 14
- Age first live birth: 28
- 1st degree relatives: 1
- Breast biopsy: Yes (fibroadenoma)
- Race: White

5-yr risk: 2% (avg 1.3%)

**BCSC**
- Age: 50
- 1st degree relatives: Yes
- Breast ca, DCIS, LCIS: No
- Breast biopsy: Yes
- Race: White
- Breast density: scattered fibroglandular densities

5-yr risk: 2.16% (avg 1.25%)

Next Steps

Your patient has higher-than-average risk for developing breast ca

- Discuss risk-reduction strategies
  - Alcohol use
  - Exercise/weight control
- Referral to determine candidacy for other risk-reduction strategies (pharmacologic prevention, enhanced screening)
  - High-risk Breast Cancer Clinic vs. Oncology Clinic depending on local resources

Breast Cancer Risk Assessment Summary

Breast cancer risk assessment is an important role for the primary care PACT

Periodic re-assessment of family history is required to determine if referral for genetic counseling/testing is indicated

Online tools are available for risk estimation—not to be used for women with a strong family history

Consider referral for discussion of risk-reduction strategies for women at higher-than-average risk

Case 3

- A 52-year-old woman comes to your office for a routine visit. She had her regular screening mammogram last week and wants to review the report with you...

  The breasts are heterogeneously dense bilaterally. Normal bilateral mammogram without findings to suggest malignancy.

  - She asks: “I think I saw something on the news about dense breasts and breast cancer...should I be worried?”

Breast Density

- Breast cancer advocates in many states have lobbied for patient notification about increased breast density because...
  - It is a marker of increased risk
  - The sensitivity of mammograms is decreased
- 40% of women ages 40 to 74 have dense breasts
- What to do with this information remains uncertain
- Tomosynthesis (3-D mammography) and ultrasound have been suggested as additional imaging for these patients, with very little supportive data

**Supplemental Imaging for Dense Breasts: In the News**


**Breast Density Summary**

It remains unclear what to do as additional screening for women with dense breasts

Ultrasonography appears to have limited benefits for substantial costs

Tomosynthesis (3-D Mammography) may offer a promising alternative as a follow up for women identified with dense breasts on screening mammography

**USPSTF 2015 Draft Guidelines for Breast Cancer Screening**

<table>
<thead>
<tr>
<th>Screening in women with radiographically dense breasts</th>
<th>2009 (current)</th>
<th>2015 DRAFT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient to assess adjunctive screening for breast cancer using breast ultrasound, MRI, tomosynthesis, or other modalities in women identified to have dense breasts on mammogram</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Back to the Case…. “I think I saw something on the news about dense breasts and breast cancer...should I be worried?”**

- Breast density alone would not change screening decisions at this point
- Estimate *Breast Cancer Risk* using BCBS model (incorporates breast density)
- Periodically re-assess risk based on changes in personal and family history
- Consider addition of tomosynthesis if available for women with dense breasts

**Other Imaging Modalities**

**Ultrasound**

- Not for screening
- Diagnostic imaging alone or in conjunction with diagnostic mammogram
- Guide for core biopsies
- Pregnant/lactating women

**MRI**

- Screening in conjunction with mammogram for high-risk patients (>20% lifetime risk, chest irradiation, BRCA mutation)
- Breast implants
- Some new cancer diagnoses
Case 4: Becky

Becky, a 29-year-old female, G0P0, calls the clinic to report she thinks she has a lump in her right breast.

Clarifying Questions

• Mass?
• Pain?
• Skin changes?
• Nipple discharge?
• Increased risk due to family history?
• Increased risk due to personal history?

Becky: Office Visit

Becky has no history of breast masses. She reports cyclical breast pain. Her maternal aunt had postmenopausal breast cancer.

There is an 1x1.5 cm nodule at 11:00 in her right breast, 5 cm from the nipple, that is slightly tender, mobile, and firm.

Breast Mass Characteristics

Benign

• Soft, firm, or cystic
• Regular borders
• Mobile

Malignant

• Solitary
• Hard
• Immobile
• Irregular borders
• ≥ 2 cm in size

Case 4: Becky’s Differential

• Cyst
• Fibroadenoma
• Fibrocystic changes
• Other

Nursing Role in Breast Care

- Clarify/Triage
- Rule out urgent issues
- Ask questions to identify problem
- Identify needed follow-up
- Follow local protocol
- Provide support and education
Cysts

Common in perimenopause
Vary with menstrual cycle
Tender, smooth, firm, mobile, round, well-circumscribed fluid-filled sacs
US women < 30 or pregnant
US + mammogram women > 30
Simple cyst = fluid only
Complex cyst = fluid and solids
Refer; simple cysts may resolve with aspiration

Fibroadenomas

Most common solid benign tumor
Stimulated by hormonal changes
Young women and African-American women
Firm, rubbery, well-circumscribed, mobile, non-tender
Diagnosed by biopsy; remove if symptomatic

Fibrocystic Changes

Normal finding
Women ages 20 - 40
Rubbery, painful, diffuse, symmetric thickening
Upper outer quadrants
Spontaneous resolution 20% of cases
Treat symptoms: bra, NSAIDs, acetaminophen

Diagnostic Imaging Algorithm

Age
<30
Diagnostic ultrasound
Age >30
Diagnostic mammogram + diagnostic ultrasound

Case 4: Becky (continued)

US: no abnormalities
- Likely fibrocystic changes
- Follow-up clinical breast exam in 4-6 wks
  - If residual mass, refer to breast specialist

What about her breast pain?

Strategies to Address Breast Pain

Associated with normal menses, hormonal meds
Cyclical
Bilateral and diffuse
Treat symptoms
Educate Patients About Breast Pain

<table>
<thead>
<tr>
<th>Be Aware</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast changes</td>
<td>Bra</td>
</tr>
<tr>
<td></td>
<td>Nicotine and caffeine</td>
</tr>
<tr>
<td></td>
<td>Heat, cold, massage</td>
</tr>
<tr>
<td></td>
<td>OTC medications</td>
</tr>
</tbody>
</table>

Case 5: Rosie
Rosie, a 57-year-old female, presents with a new right breast lump noticed one week prior. No history of trauma to the breast. No history of masses. Normal mammogram 6 mos ago; normal breast exam 9 mos ago.

- G2P0, post menopausal
- Family hx:
  - pos for ovarian ca (sister)
  - neg for breast ca
  - neg for colon ca

Case 5: Rosie (continued)

- Exam: mobile, minimally tender, smooth, 1 cm mass at 3:00; 2 cm from nipple in right breast
- No axillary adenopathy bilaterally

Next Steps....

- Age <30
  - Diagnostic ultrasound

- Age ≥30
  - Diagnostic mammogram + diagnostic ultrasound

American College of Radiology. 2012.

Case 5: Rosie’s Test Results

Mammogram
- New round 1.1 cm mass
- BIRADS 4

Ultrasound
- Irregularly marginated hypoechoic solid mass

Breast Imaging Reporting & Data System (BI-RADS)

<table>
<thead>
<tr>
<th>Category</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Incomplete</td>
</tr>
<tr>
<td>1</td>
<td>Negative</td>
</tr>
<tr>
<td>2</td>
<td>Benign</td>
</tr>
<tr>
<td>3</td>
<td>Probably benign</td>
</tr>
<tr>
<td>4a</td>
<td>Cancer 2-9%</td>
</tr>
<tr>
<td>4b</td>
<td>Cancer 10-49%</td>
</tr>
<tr>
<td>4c</td>
<td>Cancer 50-94%</td>
</tr>
<tr>
<td>5</td>
<td>Highly suggestive</td>
</tr>
<tr>
<td>6</td>
<td>Proven cancer</td>
</tr>
</tbody>
</table>

- Rates breast density, masses, calcifications, and architectural distortions
- Notes axillary adenopathy, skin or nipple retraction, skin thickening
Fine needle aspiration
Core needle biopsy
Radiology-assisted biopsy
Stereotactic biopsy
Ultrasound-guided biopsy
Wire-localized biopsy
Excisional biopsy

Technique to biopsy mass depends on:
- Palpable?
- Location?

Case 5: Rosie (cont’d)
Patient was referred for core needle biopsy

<table>
<thead>
<tr>
<th>Potential Result</th>
<th>Next Step</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer</td>
<td>Refer for definitive therapy</td>
</tr>
<tr>
<td>Negative for cancer</td>
<td>Refer to breast specialist or surgeon</td>
</tr>
<tr>
<td>Lobular neoplasia, atypical ductal hyperplasia, phylloides tumor, lobular carcinoma in situ, papillary lesions</td>
<td>Refer to breast specialist or surgeon for open biopsy</td>
</tr>
</tbody>
</table>

Case 6: Jenny
Jenny is a 32-year-old G1P1 Veteran, 3 weeks post-partum. She presents with a painful left breast. She is breastfeeding.

Her exam reveals an engorged breast, very tender, warm, and erythematous. One 4x4 cm area is very hard. There is minimal milk discharge from the nipple.

Causes of Breast Masses in Pregnant or Lactating Women
- Lactating adenoma
- Plugged ducts
- Galactocele
- Mastitis
- Abscess
- Cancer
- Other causes noted previously

Mastitis
- Lactational most common type
- Hard, red, tender, swollen area
- Fever >101°F, sick appearance
- Urgent provider evaluation
- Ibuprofen, cold compresses, breastfeeding, antibiotics
- No improvement 48-72 hour, rule out abscess with US
Evaluating Masses in Pregnant and Lactating Women

- Ultrasound is preferred
- Biopsy complications: inaccuracy, hematoma, infection
- If indicated, workup should not be postponed for pregnancy
- Some leaking/expression of fluid during late pregnancy is common

Case 6: Jenny (continued)

Investigate if:
1. Mass persists >2-4 weeks
   - US, mammogram, biopsy if needed
2. Mastitis recurs in same area or does not respond to antibiotics

Summary

- Biennial mammography is the recommended breast cancer screening method in women ages 50-74
- Breast cancer risk assessment is an important role of the primary care provider
- It remains unclear what to do as additional screening for women with dense breasts
- No physical exam can reliably distinguish benign vs. malignant
- Nursing plays a key role to clarify issues, provide education, and facilitate screening and diagnosis

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Gynecologic Emergencies in Office Primary Care

Top 5 Surgical Emergencies
10-yr review at a metropolitan women’s hospital (n=3772)

1. Ectopic pregnancy
2. Corpus luteum accident
3. Pelvic infection
4. Appendicitis
5. Adnexal torsion


Objectives

Identify high risk presentations of vaginal bleeding and/or acute pelvic pain

Discuss diagnosis and outpatient management of hemodynamically stable acute AUB

Discuss ovarian cyst accidents (hemorrhage, rupture, torsion) and indications for consultation

Discuss diagnosis of PID/TOA, management, and indications for consultation and hospitalization

Potential GYN Emergencies

Acute Vaginal Bleeding
- Early pregnancy bleeding
- Non-pregnant acute abnormal uterine bleeding (AUB)

Acute Pelvic Pain
- Ovarian cyst hemorrhage and/or rupture
- Ovarian/adnexal torsion
- Pelvic inflammatory disease (PID)
- Tubo-ovarian abscess (TOA)
- Leiomyomas

Approach to Vaginal Bleeding and/or Acute Abdominal-Pelvic Pain

Assess Acuity and Risk

Determine Pregnancy Status

Determine Etiology/Treatment

Early GYN Consultation

High Acuity and Risk Presentations

- Hemodynamic instability and/or acute abdomen – transfer immediately
- Heavy bleeding and/or acute pain – anticipate need for expedited diagnostics and emergent interventions
- Pregnancy – even light bleeding at any gestational age can be life-threatening
Case 1
Melinda

28-year-old female
Veteran with vaginal bleeding and cramping

**GYN Emergencies**
Assessing high acuity and risk

**Hemodynamic assessment**
- Identify signs and/or symptoms of instability
- Anticipate change in hemodynamic status
- Initiate stabilization

**Pregnancy determination**
- Pregnancy-associated vaginal bleeding and/or pain may be life-threatening

**GYN Emergencies**
Early Pregnancy Status Determination

<table>
<thead>
<tr>
<th>Test</th>
<th>Speed</th>
<th>Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>POC testing</td>
<td>~5 min</td>
<td>~25mIU/mL</td>
</tr>
<tr>
<td>Fastest, sensitive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT urine qualitative (lab)</td>
<td>~20-30 min</td>
<td>~25mIU/mL</td>
</tr>
<tr>
<td>Fast, sensitive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT serum qualitative (lab)</td>
<td>~30-60 min</td>
<td>~5-25mIU/mL</td>
</tr>
<tr>
<td>Fast, sensitive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT serum quantitative (lab)</td>
<td>~1-2 hrs</td>
<td>≤5mIU/mL</td>
</tr>
<tr>
<td>Most sensitive, gives hCG level</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All women of reproductive potential require pregnancy testing

**GYN Emergencies:**
History of Present Illness

*Acute bleeding: assess amount and duration of flow*
- Interval for changing products ≤ 1-2 hours; clots > 1 inch
- Duration > 8 days
- Dizzy, light-headed, syncope, exercise intolerance, fatigue

*Acute pain*
- Onset, duration, character, location, intensity, radiation, changes over time, alleviating/aggravating factors, trauma


**GYN Emergencies:**
Focused Physical Exam

<table>
<thead>
<tr>
<th>Vital Signs; Abdominal Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Distention, rigidity, tenderness, rebound, mass</td>
</tr>
</tbody>
</table>

*All women with new vaginal bleeding/pelvic pain require a pelvic exam* (except: e.g. placenta previa, theca lutein cysts)

| - Traumatic injuries |
| - Lower tract infection/inflammation |
| - Clots, products of conception, protruding masses |
| - Cervix open or closed, cervical motion tenderness |
| - Uterine size, shape, mobility, tenderness |
| - Adnexal tenderness, fullness, masses |

**GYN Emergencies:**
Targeted History

Medical History
Surgical History
OB/GYN History
Sexual and Menstrual History
Melinda’s pregnancy test is POSITIVE

Now What?

Ectopic Pregnancy: Epidemiology

1-2% of reported pregnancies

3-4% of all pregnancy-related deaths

Leading cause of 1st trimester maternal death

Ectopic Pregnancy: Risk Factors

- Prior ectopic pregnancy
- Prior tubal surgery or sterilization
- Prior pelvic inflammatory disease (PID)
- Current intra-uterine device (IUD)
- Current infertility treatment

Ectopic Pregnancy: Clinical Presentation

- < 50% have classic triad
  - abdominal pain, delayed menses, vaginal bleeding
- Nearly 50% have no risk factors
- Almost 50% are missed on initial visit
- Must rule out ectopic for ALL newly diagnosed pregnant women with abdominal pain and/or bleeding

Vaginal Bleeding in Early Pregnancy Evaluation

History and physical

Quantitative hCG Level

Transvaginal pelvic ultrasound

Early Pregnancy Bleeding
Epidemiology/Etiology

Common in 1st trimester

- ~40% of all pregnancies have bleeding
- Of those, 50% will miscarry (80% <12 weeks)

4 etiologies

1) Ectopic pregnancy
2) Miscarriage
3) Genital tract pathology
4) Implantation


**Vaginal Bleeding in Early Pregnancy**

**Essential Diagnostic Tests**

<table>
<thead>
<tr>
<th>Laboratory</th>
<th>Radiology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantitative hCG Level</td>
<td>Transvaginal ultrasound</td>
</tr>
<tr>
<td>Complete blood count</td>
<td></td>
</tr>
<tr>
<td>Complete metabolic profile</td>
<td></td>
</tr>
<tr>
<td>Coagulation panel</td>
<td></td>
</tr>
</tbody>
</table>

**Blood Bank**

- Type & cross
  - with Rh-factor determination

---

**Case 2 Becky**

- **CC:** Heavy vaginal bleeding
- **Vitals:** P=90; BP=105/60; RR=14; Pain=2/10; Afebrile
- **LMP:** Current?
- **POC Pregnancy Test:** Neg

Don’t be falsely reassured by Becky’s normal appearing vital signs

Maintain a high index of suspicion for a change in hemodynamic status throughout the evaluation

---

**Stages of Shock**

<table>
<thead>
<tr>
<th>Class</th>
<th>Heart Rate</th>
<th>Blood Pressure</th>
<th>Mental Status</th>
<th>Blood Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>&lt;100</td>
<td>Normal</td>
<td>Slightly Anxious</td>
<td>&lt;15%</td>
</tr>
<tr>
<td>II</td>
<td>&gt;100</td>
<td>Normal</td>
<td>Mildly Anxious</td>
<td>15-30%</td>
</tr>
<tr>
<td>III</td>
<td>&lt;120</td>
<td>Decreased</td>
<td>Confused</td>
<td>30-40%</td>
</tr>
<tr>
<td>IV</td>
<td>&gt;140</td>
<td>Decreased</td>
<td>Lethargic</td>
<td>&gt;40%</td>
</tr>
</tbody>
</table>


---

**Acute Abnormal Uterine Bleeding**

An episode of heavy bleeding that requires immediate intervention to prevent future blood loss.

**Acute AUB Evaluation**
Non-Pregnant, Hemodynamically Stable Patient

<table>
<thead>
<tr>
<th>Key factors for work-up</th>
<th>Consider pelvic US</th>
<th>Endometrial tissue sampling required in women ≥45 y/o</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Age</td>
<td>Assesses structural abnormalities</td>
<td>Consider for younger women if:</td>
</tr>
<tr>
<td>• Medical/menstrual hx</td>
<td></td>
<td>• Endometrial CA risk (e.g. obesity, PCOS)</td>
</tr>
<tr>
<td>• Physical &amp; pelvic exam</td>
<td></td>
<td>• Failed medical management</td>
</tr>
<tr>
<td>• Previous labs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Risk factors for endometrial pathology</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Evaluation of Acute AUB: Lab Testing**

<table>
<thead>
<tr>
<th>Key initial tests</th>
<th>Pregnancy, CBC, PT/PTT (discretionary: fibrinogen, blood T&amp;S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tests to consider</td>
<td>Chlamydia/GC, thyroid and liver function tests, iron studies</td>
</tr>
<tr>
<td>Von Willebrand testing</td>
<td>VWF antigen, ristocetin co-factor assay, factor VIII, fibrinogen</td>
</tr>
</tbody>
</table>

- No signs/symptoms of infection; negative coagulopathy screen
- **Exam:**
  - Moderate blood flow from cervical os; uterus nontender, slightly enlarged and globular; adnexa nontender/no masses
- **Labs:**
  - Pregnancy negative; Hgb 9.8 gm/dL; PT/PTT & platelets wnl; TSH pending
- **Imaging:**
  - Transvaginal ultrasound pending

**Case 2: Becky (cont’d)**

Most Common Causes of Acute Bleeding in Non-Pregnant Patient

- Acute severe menorrhagia
- Genital trauma
- Gynecologic infection
- Foreign body (tampon, IUD)
- Drugs (anticoagulants, hormones)
- Coagulation disorder
- Gynecologic cancers

**Management of Acute AUB**

- Clinical stability
- Overall acuity
- Suspected etiology
- Future fertility wishes
- Medical co-morbidities

**Acute AUB Treatment Options**

**Emergent**

- Medical Inpatient (IV Management)
  - Transfusion
  - Estrogen
  - Antifibrinolytics

**Surgical intervention**

**Urgent**

- Medical Outpatient (Oral Management)
  - Hormonal regimens
  - Antifibrinolytics
  - NSAIDs
  - Iron replacement
**Acute AUB Oral Hormonal Regimens**
*(off-label use common)*

Multiple different regimens reported effective
- Regional & anecdotal provider preferences common

Most popular:
- Combination Oral Contraceptives (COCs) versus Progestin Monotherapy

**Acute AUB Oral Hormonal Regimens**
*RCT comparing multi-dosed COC vs. MPA*

COC and MPA = equal efficacy; similar side effects
- 3 days median time to stop bleeding

MPA group = higher satisfaction
- 81% would use MPA again (vs. 69% in COC group)

CDC’s U.S. Medical Eligibility Criteria for Contraceptive Use may be helpful to guide appropriateness of treatment

**Acute AUB Oral Non-Hormonal Regimens**
*Antifibrinolytics (off-label, not FDA-approved)*

| Tranexamic acid | 1.3gm | 1 pill by mouth 3x/day for 5 days |

FDA: approved for heavy menstrual bleeding
- 40% decrease in menstrual blood loss
- Contraindications similar to those for OCPs
- Not for women on estrogen/hx venous thromboembolism
- Comparatively expensive


**Acute AUB Oral Non-Hormonal Regimens**
*NSAIDs (off-label, not FDA-approved)*

- Mefenamic acid, naproxen, ibuprofen most often used
- 5-7 days continuous dosing schedule; begin before or at start of menses; benefit unclear if started later
- 20-30% decrease in menstrual blood loss
- Reduces prostaglandin levels; may relieve cramping

Contraindications
- Gastritis, bleeding disorders, renal dysfunction


**Management of Acute AUB: Summary**

- Assess acuity/risk and rule out pregnancy
- Medical management is initial therapy for most
- Progestin-only appears equivalent to comb OCPs
- Consult OB/GYN early

**Case 3 Jessica**
- **CC:** Acute pelvic pain
- **Vitals:** P=85; BP=120/60; RR=12; Pain=6/10; Afebrile
- **LMP:** 3 weeks ago
- **POC Pregnancy Test:** Neg
**Adnexal Mass: Etiology**

- **Non-GYN** (e.g. pelvic, kidney, diverticular, appendiceal)
- Uterine source (e.g. anomaly, leiomyoma)
- Fallopian tube (benign, malignant, infectious, ectopic)
- Ovarian neoplasm (benign vs. malignant)
- Functional ovarian cyst (benign)

*Most common adnexal mass is a functional ovarian cyst*


---

**Functional Ovarian Cysts**

### Follicular Cyst

- Thin walled, simple (unilocular)
- At ovulation ~2-2.5cm
- **Silent rupture common**
  - Occasionally symptomatic and/or hemorrhagic
- Expectant management
  - Resolution 4-8wks


### Corpus Luteum Cyst

- Dominant ovulatory follicle becomes corpus luteum
- Commonly hemorrhage and/or rupture
  - If cystic, average size 3-5cm
  - May be as large as 10-15cm
- Occurs cycle day 20-26
- R>L (2:1)


---

**Functional Ovarian Cysts**

### Theca Lutein Cyst

- Excessive gonadotropic or hCG stimulation
- Ovulation induction or molar pregnancy
- Usually bilateral, multi-cystic, and fragile
- May be up to 30cm
- **Rupture can be life-threatening**
  - Spontaneous regression
- Expectant management


---

**Functional Ovarian Cysts**

- Do NOT cause acute pelvic pain unless...
  - Distending
  - Twisting
  - Leaking
  - Ruptured
  - Infected
Hemorrhagic, Leaking or Ruptured Ovarian Cyst

Presentation

- Sudden, unilateral acute pelvic pain
  - Associated w/ trauma/exertion (coitus, exercise, valsalva)
  - Light vaginal bleeding is not uncommon
  - Progression to generalized pain suggests active bleeding

- Menstrual hx often helpful

- Right seen more frequently than left (2:1)


Hemorrhagic, Leaking or Ruptured Ovarian Cyst

Differential Diagnosis

- Ectopic Pregnancy
- Ovarian Torsion
- Appendicitis or Diverticulitis
- Pelvic Inflammatory Disease (PID)
- Tubo-Ovarian Abscess (TOA)
- Ruptured Ovarian Neoplasm

Hemorrhagic, Leaking or Ruptured Ovarian Cyst

Recommended Labs and Imaging

- Pregnancy testing
- CBC, PT/PTT
- Blood type and screen
- Urinalysis, STI, vaginitis testing (if indicated)
- Pelvic US is cornerstone of evaluation

Hemorrhagic, Leaking or Ruptured Ovarian Cyst

Management

- Early exclusion of ectopic pregnancy
  - GYN collaboration expectant vs. surgical management
- Hospitalize if: unstable, acute abdomen, possible ongoing bleeding, infection, or uncertain diagnosis
- Uncomplicated hemorrhagic or ruptured cysts can be expectantly managed as outpatient

Hemorrhagic or Ruptured Cyst

Expectant Outpatient Management

- Precautions = pain, infection, bleeding
  - Pain control with oral analgesics
  - Pelvic rest and reduced activity
- Recurrence risk w/coagulopathy = 31%
  - Consider ovarian suppression (oral contraceptives)
- Follow-up: repeat pelvic ultrasound in ~6wks

Case 4

Jenny

- CC: Acute pelvic pain
- Vitals: P=105; BP=120/80; RR=12; Pain=5/10; T=101°F
- LMP: 1 week ago
- POC Pregnancy Test: Neg
Pelvic Inflammatory Disease (PID)
CDC, 2010

Definition
Spectrum of inflammatory disorders of the upper genital tract including:
• endometritis
• salpingitis
• tubo-ovarian abscess
• pelvic peritonitis

PID: Epidemiology

Most common serious infection in sexually active young women (age: 16-25yrs)
~1 million U.S. women each year
Annual cost > $4.2 billion
Subclinical PID emerging as common entity

PID: Etiology

• Ascending infection from lower genital tract
  – Polymicrobial due to both aerobic/anaerobic flora
• Considered an STI
  – 25-75% Gonorrhea/Chlamydia combination present
• Broad spectrum antibiotic coverage necessary

PID & Current Intra-Uterine Devices (IUDs)

• No independent risk after 3 weeks post-IUD insertion
• Insufficient evidence for IUD removal in setting of acute PID

IUDs left in place during episode of acute PID warrant caution and close follow-up

Pelvic Inflammatory Disease (PID)
Risk Factors

<table>
<thead>
<tr>
<th>Young age</th>
<th>Multiple sexual partners</th>
<th>Prior PID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current (or hx of) Gonorrhea (GC) or Chlamydia</td>
<td>Failure to use barrier contraception</td>
<td>Current douching</td>
</tr>
</tbody>
</table>

Pelvic Inflammatory Disease (PID)

CDC, 2010 STD Treatment Guidelines; CDC, Self-Study STD Modules for Clinicians-Pelvic Inflammatory Disease (PID), 2014

CDC, 2010 STD Treatment Guidelines; Sweet & Gibbs, 2009; CDC, Self-Study STD Modules for Clinicians-Pelvic Inflammatory Disease (PID), 2014

CDC. 2010 STD Treatment Guidelines; Sweet & Gibbs. Infectious Diseases of the Female Genital Tract, 2009; Soper DE. Obstet Gynecol 2010.
Pelvic Inflammatory Disease (PID) Complications and Sequelae

**TREAT EARLY!** Correlation: delay in treatment with severity of disease and complications/sequelae

**Short-Term Complications:**
- Fitz-Hugh Curtis Syndrome
- Tubo-Ovarian Abscess (TOA)
- Sepsis
- Death

**Long-Term Sequelae:**
- Chronic pelvic pain
- Infertility
- Ectopic pregnancy

PID Complications

**Fitz-Hugh Curtis Syndrome**
- Continued ascent of infection, now involving peri-hepatic inflammation
  - Right upper quadrant and pleuritic pain w/elevated LFTs
  - 5-10% will develop syndrome
- Higher prevalence of moderate to severe adhesions and consequent long-term sequelae

**Tubo-Ovarian Abscess (TOA)**

**Signs**
- May NOT have fever or leukocytosis

**Exam**
- Fixed, tender mass
- If uncertainty on bimanual exam, get US

**Potential life-threat**
- Hospitalize; start parenteral antibiotics early
  - **Rule out at initial evaluation and if patient departs from expected course of improvement**

**Surgical GYN Consult**

| Unruptured: initial tx = parenteral antibiotics |
| ~75% respond, even with mass up to 8cm |
| Long-term f/up to assure resolution |

**Rupture is life-threatening**
- (5-10% mortality)
- Septic shock → multi-organ system failure → death

PID Sequela

Infertility, Ectopic, and Chronic Pelvic Pain

Inflammatory reaction causes significant tubal damage and adhesions
- Tubal factor infertility
- Risk of ectopic pregnancy
- Chronic pelvic pain

| Infertility > doubles per episode |
| 1<sup>st</sup> = 8% |
| 2<sup>nd</sup> = 20% |
| 3<sup>rd</sup> = 50% |

| 6-10x ectopic rate |
| 4x chronic pelvic pain (up to ~1/3<sup>rd</sup> of cases!)

Pelvic Inflammatory Disease (PID) Diagnostic Considerations

Wide variation in symptoms and signs
- No historical, physical, or lab finding is both sensitive and specific for acute diagnosis

In one study, only 20% confirmed salpingitis had classic constellation of symptoms
- Pelvic pain
- Cervical motion or adnexal tenderness
- Fever and leukocytosis
**PID Diagnosis: CDC Criteria to Initiate Empiric Treatment**

Sexually active young women with lower abdominal/pelvic pain **PLUS** at least 1 of the following:
- Cervical motion tenderness
- Uterine tenderness
- Adnexal tenderness

CDC, 2010 STD Treatment Guidelines.

**PID Diagnosis: CDC Criteria**

Additional criteria to enhance **specificity**:
- Fever > 101 F
- Mucopurulent cervical or vaginal discharge
- Abundant WBCs on wet prep
- Elevated erythrocyte sedimentation rate (ESR)
- Elevated C-reactive protein (CRP)
- Gonorrhea or Chlamydia infection (lab documented)

CDC, 2010 STD Treatment Guidelines.

**PID Diagnosis: Enhancing Specificity**

*If cervical discharge appears normal (no WBCs on wet prep)*:
- diagnosis of PID is unlikely
- alternate diagnoses should be considered

CDC, 2010 STD Treatment Guidelines.

**PID Treatment**

*Many women can be safely treated as outpatients*

Criteria for hospitalization:
- Tubo-ovarian abscess
- Pregnancy (rare)
- Failure to respond to oral antibiotics within 72 hours

Unable to tolerate oral antibiotics or follow outpatient regimen (e.g., f/up visit)
- Uncertain diagnosis (esp. appendicitis)

**PID Inpatient Treatment Recommendation**

- Broad spectrum parenteral antibiotic coverage
  - follow CDC guidelines
- GYN consultation/collaboration
- At least 24 hours direct observation
- Management of sex partners, education on prevention of future STIs, close follow-up


**PID Outpatient Treatment Regimens**

Ceftriaxone (IM) + Doxycycline (PO) +/- Metronidazole (PO)

Cefoxitin (IM) + Probenicid (PO) + Doxycycline (PO) +/- Metronidazole (PO)

**PID Patient Education/Instructions**

- Precautions for worsening
- Offer HIV testing
- Retest GC/CT in 3-6 months
- **REQUIRED:** evaluate treatment response in 48-72 hrs
- Encourage notification of all sex partners (within 60 days prior to onset)
- Empirically treat partners for GC/Chlamydia
- Abstinence until treatment is complete for both patient and current partners

**PID and Prevention**

- Advocate safe sex practices
- GC/Chlamydia screening
  - annually for sexually active women < 26yo
  - other women at risk
- Avoid douching
- ? treat bacterial vaginosis

**Case 5**

*Rosie*

- **CC:** Acute pelvic pain
- **Vitals:** P=100; BP=130/90; RR=12; Pain=5/10; T=98°F
- **LMP:** 2 weeks ago
- **Contraception:** Tubal ligation

**Torsion of Adnexa**

**Definition...**

*Rotation of the ovary and/or tube around its ligamentous support and vascular pedicle*

**Torsion of Adnexa: Epidemiology**

- Commonly occurs late 20s to mid 30s
- 10-20% present in pregnancy (CL cyst)
- Right > Left (3:2), sigmoid colon may be protective


**Torsion of Adnexa: Pathophysiology**

*Ovarian masses cause change in weight and polarity* (5-12 cm highest risk)

- Physiologic cysts - 48%
- Neoplasms - 46%
- Normal adnexa - 6%

Torsion of Adnexa: Presentation

Clinical Manifestations
- Unilateral pelvic pain
  - sudden onset
  - sharp and stabbing
  - intermittent or colicky
- Common:
  - waves of nausea/vomiting
  - radiation flank/groin/leg

Considerations/Caveats
- Hx of previous less painful episodes = partial torsion and spontaneous reversal
- Often confused for:
  - appendicitis
  - nephrolithiasis
  - intestinal obstruction

Torsion of Adnexa: Presentation

Clinical Manifestations
- Tender pelvic mass on abdominal/pelvic exam
  - Characteristic: Adnexal mass w/pain plus absent ovarian vessel flow on doppler
- Mild fever/leukocytosis, if present

Considerations/Caveats
- DDx: ectopic, hemorrhagic cyst, PID/TOA, appendicitis, myoma-related symptoms
- >50% have normal vessel flow on doppler studies
- High fever and leukocytosis suggests other infectious etiology

Torsion of Adnexa: Diagnosis/Management

- Diagnosis is primarily clinical
  - Pain with unilateral adnexal mass
  - Pelvic ultrasound is cornerstone of evaluation
- Potential threat to future fertility
  - Early GYN consultation
- Surgical management with detorsion and conservation of adnexa is urgent

Uterine Leiomyomas

Epidemiology

Leiomyoma = myoma = fibroid = fibromyoma

- Benign smooth muscle tumor of myometrium
  - Risk of sarcoma 2-3/1000
- Overall, most frequent tumor in women
- Largest indication for hysterectomies in U.S.

Uterine Leiomyomas: Prevalence

- Age/ethnicity dependent
- Population-based ultrasound screen, by age 50:
  - >80% African American / ~70% Caucasian women
  - Hispanic/Asian rates similar to Caucasian
  - All groups demonstrate familial tendencies
- < 50% of women symptomatic


Uterine Leiomyomas: Presentation

Symptoms
- AUB, pain, pressure or heaviness

Symptoms & treatment depend on size, number, location. Considered significant if:
- Size: single myoma ≥4cm
- Number: total size >8-9wks gestation (softball)
- Location: submucosal (any size)
Uterine Leiomyomas

Classification
- Submucosal
- Intramural
- Subserosal

Degeneration = outgrows blood supply
Torsion = pedunculated myoma twists its vascular pedicle

Presentation is similar:
- Severe colic; may progress to constant pain
- Uterine tenderness, enlarged/irregular uterine contour
- Fever & leukocytosis mild unless infected

Treatment:
- GYN collaboration on observation with NSAIDs vs. surgery

Uterine Leiomyomas

Acute Pain (uncommon, but severe)

Prolapse = submucosal myoma expelled through cervix

Presentation:
- Severe colic, labor-like pain; may have significant bleeding
- Uterine tenderness with mass prolapsing through cervix

Treatment:
- Assure hemodynamic stability, pain control, consult GYN for surgical intervention

Gynecologic Emergencies in Office Primary Care

This presentation is an overview of common causes of acute bleeding and pelvic pain that may present to your practice.

It is not intended to be a comprehensive review.

With the exception of cursory comments on early pregnancy bleeding, obstetrical causes were not covered.

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SUPPLEMENTAL INFO FOR GYNECOLOGIC EMERGENCIES LECTURE

ACUTE ABNORMAL UTERINE BLEEDING ORAL HORMONE REGIMENS (off label)

2006 RCT comparing multi-dosed Combined Oral Contraceptives Pills (COC) vs Medroxyprogesterone Acetate (MPA) *

COC containing 35mcg ethinyl estradiol and 1 mg norethindrone acetate
• 1 pill by mouth 3x/day for 7 days, then immediate transition to:
  • 1 pill by mouth daily for 21 days

OR

MPA 10mg tabs
• 2 pills by mouth 3x/day for 7 days, then immediate transition to:
  • 2 pills daily for 21 days

➢ Equal efficacy: 3 days median time to cessation of bleeding in both groups
➢ Side effects similar; MPA had higher satisfaction rate
(N=40; sample size too small to prove equivalence or properly assess side effects)


2013 single arm non-comparative trial of progestin monotherapy using MPA**

Depot medroxyprogesterone acetate (DMPA)
• 150mg IM injection x 1 with simultaneous:

PLUS

Oral medroxyprogesterone acetate (10mg tabs)
• 2 pills by mouth 3x/day for 3 days only

➢ At the end of 3 days, the IM injection provides a fairly steady systemic level, so comparatively, the exposure to high dose progestin was decreased from 7 days in the Munro trial to only 3 days in this trial.
➢ Median time to cessation of bleeding was 3 days, but ALL 48 Pts stopped bleeding within 5.
➢ Side effects low with 100% satisfaction.

NSAID REGIMENS (Off Label) FOR USE IN REDUCING HEAVY MENSTRUAL BLEEDING*

Start before or at the beginning of menses. Benefit unclear if started later.

- Mefenamic acid
  - 500 mg TID first 4-5 days of menses
  - 500 mg TID from 4-5 days prior to menses until cessation
  - 500 mg initially, then 200 mg QID for 3-5 days

- Naproxen
  - 500 mg at onset and 3-5hrs later, then 500 mg BID x 5 days
  - 500 mg in am and 250 mg in pm for 2 days, then 250 mg BID x 7 days
  - 500 mg, then 250 mg QID x 4 days
  - 550 mg, then 275 mg QID x 5 days

- Ibuprofen
  - 800 mg TID x 5 days