The Quandary of Women’s Health

Contraceptive Choices
Adnexal Masses

By Marilyn Miller, MSN, APRN, CNS, FNPC
Objectives For Today.....

How to choose Contraception
When to worry about Adnexal Masses
Sailing – Hawaii
Why Contraception was Developed

- Provides control over pregnancy timing & prevention of unintended pregnancy.

- *With that being said……..Let us take a LOOK at the history of contraception.*
How far we have come in birth control methods!
History of Birth Control

- **Ancient World**
  - Mesopotamia, Egypt, Greece and Rome
    - The use of honey, acacia leaves & lint.
    - Methods placed in the vagina to block sperm:
      - various contraceptive pessaries
      - acacia gum. Still used in contraceptive jellies.
    - Gummy substances applied over the cervix, a mixture of honey & sodium bicarb, crocodile dung pessary & lactation.
History Continued

- **Book of Genesis** references withdrawal
- Use of Silphium plant well known for it’s contraceptive & abortifacient properties. Eventually became extinct because of high demand.
- **Far East**: coitus reservatus & coitus obstructus.
- **Indians** used powdered palm leaf & red chalk.
Medieval & Early Modern Period

- Coitus interruptus.
- Pessaries which included:
  - elephant dung, cabbages & pitch. Rock salt pessaries.
Europe

- Efforts to halt or prevent pregnancy.
  - Deemed immoral by the Catholic church.
    - Women used coitus interruptus,
    - Inserting lily root & rue into the vagina
    - Infanticide after birth.
- Condoms first called “assurance caps”.
- 1909 first IUD made from silkworm gut.
Modern Birth Control Movement

- Contested political issue in Britain during the 19th century.
- **Two sects argued for & against:**
  - Malthusians
    - in favor of limiting population growth
    - became active in promoting birth control.
    - the term “voluntary motherhood” coined by feminists in the 1870’s.
    - advocated for contraception to permit sexual intercourse as desired without pregnancy.
  - Other sects disapproved of contraception arguing that women should engage in sex to procreate & advocated periodic or permanent abstinence.
Birth Rate Decline

- In 1880’s birth rates dropped in industrialized countries.
- 29% decline within a generation.
- Attributed to women being educated about contraception & how to avoid pregnancy.
- Condoms & diaphragms were made of vulcanized rubber as a result were reliable & inexpensive.
Birth Control Clinic

• First permanent birth control clinic established in Britain in 1921 by Marie Stopes.

• Marie Stopes and other pioneers played a major role in breaking down taboos about sex & increasing knowledge.

• 1930 the National Birth Control Council was formed.
Late 20\textsuperscript{th} Century

• First birth control pills developed in 1950’s by Gregory Pincus & John Rock along with Planned Parenthood Federation of America.

• \textit{And as they say, “The rest is history”!}
Goals of Contraception

• Contraceptive education.
• Current & future contraceptive needs.
• Select a contraceptive modality.
Selecting Contraceptive Methods

- Individuals weigh factors such as:
  - Efficacy
  - Access
  - Prevention of STI’s
  - Side effects
  - Convenience
  - Non-contraceptive benefits.
Contraceptive Counseling

- Provides education
- Dispels misinformation.
- Facilitates selection of method that will be successful.
- Encourage patient involvement.
- Create a tailored plan that meets the individual’s reproductive needs.
ACOG Statement

• Reproductive life plan is:
  • “a set of personal goals regarding when, whether, and how to have children based on individual priorities, resources, and values.

• “Would you like to become pregnant in the next year”? 
Reproductive Life Plan

• Allows to address knowledge deficit.
• Misperceptions.
• Exaggerated concerns about the safety of contraception.
• Helps to drop barriers down about contraceptive use.
Reduce Unintended Pregnancy

• *Unintended pregnancy* is a mistimed or unwanted pregnancy.
• 2011 – 45% or 2.8 million of the 6.1 million pregnancies in the U.S. were *unintended*.
• *Unintended pregnancies* assoc with:
  • Maternal depression
  • Risk of violence towards the mother
  • Late prenatal care
  • Reduction in breast feeding
  • Financial burdens
Infant Sequela from Unintended Pregnancy

- Account for 1.1 million abortions annually in the U.S.
- Negative impact greatest for teen parents & their children
- 82% of pregnancies in women aged 15-19 are unintended
Statistical Importance

• *Why are these statistics important?*

• High rate of unintended pregnancy highlights the need for effective contraceptive education.

• *We as NP’s can impact these stats through education and care of the female patient.*
Reasons for Unprotected Intercourse

- Following reasons were cited for unprotected intercourse:
  - 33% believed they couldn’t get pregnant.
  - 30% did not really mind if they got pregnant.
  - 22% stated their partner didn’t want to use a condom.
  - 16% cited side effects.
  - 10% believed their partner was sterile.
  - 10% cited access problems.
  - 18% cited “other”.

- The fact 1/3rd didn’t see themselves at risk for an unintended pregnancy emphasizes the need for more effective education.
Contraceptive Efficacy

- Divided into three tiers based on their theoretical & actual effectiveness.
  - **Most Effective** which include:
    - LARC: IUDs & Implants.
    - Sterilization.
  - Assoc with lowest pregnancy rates as *minimally influenced by patient’s choice or adherence.*
Contraceptive Efficacy

- **Effective contraception:**
  - Injectable contraceptives like Depo-Provera.
  - Oral contraceptives.
  - Transdermal patch.
  - Vaginal ring.
  - Low pregnancy rate if used consistently & correctly.
Contraceptive Efficacy

- **Least effective:**
  - Diaphragms.
  - Cervical caps.
  - Sponges.
  - Male & female condoms.
  - Spermicides.
  - Periodic abstinence.
  - Withdrawal.
  - Overall pregnancy rates with these methods vary among studies.
Contraceptive Efficacy

- Expressed as both theoretical (perfect use) patient’s who use the method correctly on every occasion.
- Actual (typical use) usually lower due to inconsistent or incorrect use.
  - Influenced by frequency of intercourse, age, & regularity of menstrual period.
  - Inconsistent adherence to method requirements, gaps in use, as well as failure of the method itself.
Guidelines for Prescribing

- Medical Eligibility Criteria
- Often called (MEC)

Originated in 1996 from the WHO
MEC - Contraceptive Tool

- Medical eligibility criteria:
- Category 1 = A condition for which there is no restriction for the use of the contraceptive method.
- Category 2 = A condition for which the advantage of using the method generally outweigh the theoretical or proven risks.
- Category 3 = A condition for which the theoretical or proven risks usually outweigh the advantages of using the method.
- Category 4 = A condition that represents an unacceptable health risk if the contraceptive method is used.
Contraceptive Method Selection

• How do you decide which method is best?
  • **Number one – consider patient preferences**
    • Counsel patient to choose the most effective method they will use successfully.
    • Ask if she will be able to adhere to the requirements of using the method.
    • Able to tolerate the method’s potential side effects.
    • Address concern’s, expectations, & sociocultural needs.
Individual Factors to Consider

- Personal preferences
- Effect on periods
- Childbearing plans
- Pattern of sexual activity
- Partner
- Social & cultural factors
- *Ability to pay*
- Concerns
- Concomitant need to prevent STI’s
- Supportive care from healthcare provider
Survey Results

- 2500 women surveyed. Listed the following as the most important contraceptive attributes:
  - Effectiveness
  - Affordability
  - Long duration
  - No maintenance (described as “forgettable” in the study).
  - Safety
  - Side effects
Pregnancy Desires

- Assess timeframe for pregnancy.
- Do you want to be pregnant in the future?
- If yes, when do you want to be pregnant?
- This influences their choice greatly.
Medically Uncomplicated Women

- Women who desire pregnancy within a year:
  - Most effective short-acting reversible contraception such as pill, patch, and vaginal ring.
  - Women who do not want hormonal methods then barrier methods such as male condom (with & without spermicide), female condom, diaphragm, sponge & cervical cap.
  - Avoid Depo-Provera as delayed return to fertility is an issue.
  - Can use a LARC but may not be cost-effective.
Women who do not desire PG

- **LARCs**:
  - Implant, IUDs & sterilization
- **Male vasectomy.**
- **Short-acting reversible contraception is an option.**
Starting Contraception

- Examination & testing:
  - *Healthy women* – most contraceptives can be started on the same day of the visit.
  - Require minimal exam or testing prior to initiation.
  - Most groups agree that breast, pelvic exams, pap smears & STI screening not necessary before a first or renewed hormonal contraception.
Starting Contraception

- **Exclude pregnancy.** Pregnancy test best obtained two or more weeks after last episode of unprotected intercourse.
- Same-day or quick start approaches can be used for women desiring hormonal contraception & not likely to be PG.
- A follow-up pregnancy test can be performed 2-4 weeks later if needed.
LARCs

- Three LARC methods:
  - Two IUDs:
    - Copper T380A
    - Levonorgestrel IUD
    - Etonogestrel single-rod implant
IUD Example
Copper T380A

- Effective for 10 years. Failure rate of 0.8/100 women.
- Wrapped with copper wire around the stem & arms.
- **Mechanisms of action:**
  - Effects occur prefertilization:
    - Inhibition of sperm migration & viability, change in transport speed of ovum, & damage or destruction of the ovum.
    - May include damage to fertilized ovum. All effects occur before implantation.
  - Most common adverse effects: abnormal bleeding & pain.
LNg-releasing IUDs

- Three models available in U.S. Failure rate overall is 0.1%.
  - 52mg LNg IUD – releases 20mcg/day. Approved for five yrs. Known as Mirena.
  - 52mg LNg IUD – releases 18mcg/day. Approved for three yrs. Known as Liletta.
  - 13.5mg LNg IUD – releases approx. 14mcg/day. Approved for three yrs. Known as Skyla.
LARC Method

- Newest kid on the block:
  - Kyleena
  - LNG system 19.5mg for prevention of PG up to 5 years. Release of LNG progressively decreases over time.
  - Same contraindications
  - Same side affects.
  - 28% amenorrhea rate.
  - Indicated for both nulliparous/parous women.
LNg IUD’s Side Effects

- Change in bleeding pattern which includes prolonged bleeding.
- Unscheduled bleeding.
- Amenorrhea.
- Spotting.
- Generally bleeding pattern improves over time.
- Discontinuation rates are low overall.
LNG IUD Noncontraceptive Benefits

- Reduction in menorrhagia, anemia, dysmenorrhea, endometriosis related pain, endometrial hyperplasia & PID.
IUD Complications

- Expulsion – 2-10% during the first year.
- Method failure
- Perforation-1 per 1,000 insertions or less
Candidates for IUD’s

- Women who desire one of the most effective methods.
- Desire long-term, reversible contraception.
- Low risk for acquiring STI’s.
- Want or need to avoid estrogen exposure.
- Relatively few evidence-based contraindications.
Nulliparous Women

• In 2005, FDA approved changes were made that nulliparous women can have the Copper IUD if desired.
• LNG IUD not specifically approved, but the MEC classifies IUDs as Category 2.
• No studies demonstrating increased PID risk in nulliparous women.
IUD Contraindications

• Following are *major conditions* when IUDs are contraindicated:
  • Severe distortion of the uterus
  • Acute pelvic infections
  • Known or suspected pregnancy
  • Wilson’s disease or copper allergy
  • Unexplained abnormal uterine bleeding
  • Breast cancer
When is an appropriate time to insert an IUD?
Post partum IUD insertion

- IUD’s both copper and LN can be inserted in the immediate postpartum period within 10” of placental separation.
- Expulsion rate is higher up to 24%.
- Contraindicated among women with: peripartum chorioamnionitis, endometritis, or puerperal sepsis.
- Can be inserted immediately after an abortion or miscarriage.
Contraceptive Implants

- Placed subdermally
- Consists of ethylene vinyl acetate copolymer core.
- Contains 68mg of etonogestrel
- Controlled release of etonogestrel over 3 yrs.
- Primary mechanism of action is suppression of ovulation
  - Cervical mucus thickening
  - Alteration of endometrial lining
- Most effective contraception – typical use PG rate 0.05%.
Implant Side Effects

- Menstrual bleeding patterns
- Amenorrhea or infrequent, frequent, or prolonged bleeding
- GI problems
- HA’s
- Acne
- Breast pain
- Vaginitis
- Weight gain
Implant Complications

- Uncommon, but can include:
  - Insertion pain
  - Sl. Bleeding
  - Hematoma formation
  - Difficult insertion
  - Removal complicated by: breakage, inability to locate the rod.

- *All health care providers must receive insertion training from manufacturer.*

- A patient needs to palpate the rod after insertion prior to dismissal.
BODY RISING
FROM THE DEEP
Changing Gears to OC’s
Which hormone provides the contraception?

Estrogen or Progesterone?
Types of Progestin’s

- **1st generation**: - Norethindrone
  - Generally well tolerated, prone to breakthrough bleeding
Progestin’s

• 2\textsuperscript{nd} generation: Levonorgestrel, helps to reduce breakthrough bleeding and cramping.
• Downside is additional androgenic properties worsen hirsutism, acne and dyslipidemia.
• Examples: Ogestrel/Ovral, Levlen/Levora/Nordette, Tri-levlen/Triphasil/Trivora
Mechanism of Estrogen in OCP’s

- Estrogen:
  - Inhibits secretion of FSH from anterior pituitary
  - Stabilizes the endometrium, decreases rate of breakthrough bleeding, thins cervical mucus
  - Increases concentration of progestin receptors
Progestin Mechanism of Action in OCP’s

- **Progestin**: negative feedback loop.
  - Inhibits release of LH from anterior pituitary, preventing ovulation (ovaries sleep).
  - Thickens cervical mucus, making sperm penetration more difficult.
  - The environment inhospitable to implantation.
Depo Provera

- Intramuscular or subcutaneous medroxyprogesterone every 12 weeks
- Failure rates 0.3-3%
- Mechanism of action
  - Ovulation inhibition
  - Thickened cervical mucus
  - Thinning of the endometrium
Side effects of Depo Provera

- Abnormal bleeding
- Delayed fertility upon discontinuation
- Weight gain (5.4 lb in the first year)
- Decreased bone mineral density
Contraindications to Depo Provera

- Pregnancy
- Current breast cancer
Noncontraceptive benefits of Depo Provera

- 80% reduction in endometrial cancer
- Decreased anemia
- Decreased dysmenorrhea
- Decreased ovarian cysts
- Raises the seizure threshold in women with epilepsy
- Fewer painful crisis in women with sickle cell anemia
Combined Hormonal Contraception

- Contraceptive Pills
- Contraceptive Patch (Ortho Evra)
- Contraceptive Ring (NuvaRing)
- Current methods have lower doses of ethinyl estradiol than older pills (patch > pill > ring)
- Failure rate 7%

Mechanism of action
- Varying degrees of ovulation suppression
- Thickened cervical mucus
- Thinning of the endometrium
Contraindications to CHC

- Prior DVT or known thrombogenic mutation
- Cerebrovascular or coronary artery disease
- Uncontrolled hypertension
- Migraines with aura (or migraines over age 35)
- Diabetes with peripheral vascular disease
- Smoking and age greater than 35
- Current breast cancer
- History of estrogen dependent cancer
- Unexplained vaginal bleeding
- Pregnancy
Common OC Side Effects

• Bloating
• Nausea
• Breast tenderness
• Break through bleeding
Other OC Side Effects

- **Amenorrhea**: goal of continuous & extended cycling. May occur in 21-day regimen with 7 days off. Most commonly seen in 20mcg pills. Switching to 30-35mcg estrogen often restores menses.

- **Post-pill amenorrhea**: same risk as in spont. Amenorrhea.

- **Drug interactions**: metabolism of OC’s is accelerated by any drug that increases liver microsomal enzyme activity such as: phenobarb, phenytoin, & rifampin (substrates).
Drug Interactions

• Just a word about the CYP450 (Cytochrome P450 metabolism).
• Expressed through the liver.
  • Enzymes are essential for med. metabolism.

• They are influenced by.........
Pharmacogenomics

• Genetic & environmental factors.

• **Pharmacokinetics**
  • Process of how drugs move through individual bodies.

• **Pharmacodynamics**
  • Process of how individuals respond to a drug.
Inhibition

- Slowssssssssssssss
  - Down drug metabolism
  - Enzymes can’t do their work.

- Clinical implications
  - Increases the risk of drug toxicity
  - Increases the effect of the drug.
Induction

- Speeds up drug metabolism

- Clinical implication
  - Decreases drug efficacy.
Substrate

- *Substrates* are consumed during a catalytic or enzymatic reaction. Accelerates absorption of a drug.
Dosing Schedule

- OrthoEvra -
  - New patch every week for 3 weeks, no patch the 4th week
  - Patches are actually effective for 9 days

- NuvaRing -
  - Wear ring for 3 weeks, no ring the 4th week
  - Rings are actually effective for 4 weeks
Oral Contraceptives

- Monophasic vs biphasic vs triphasic
- 21/7
- 24/4 – Yaz, Loestrin 24 Fe, Minastrin 24 Fe
- 84/7 – Seasonale
- 84/7 – Seasonique
- Continuous - Lybrel
CHC Risks

- DVT (3-6 in 10,000, maybe double with patch)
  - Higher risk with drospirenone & desogestrel
- Cardiovascular risks (unhealthy women)
- Stroke (migraine with aura)
- Abnormal bleeding (especially with extended cycle)
Noncontraceptive benefits of CHC

- Decreased menstrual related symptoms
- Decreased bleeding and pain
- Less Anemia
- Decreased risk of endometrial and ovarian cancers
- Less acne
- ***Does not increase the risk of breast cancer***
Progesterone-Only Pill

- Norethindrone (Micronor and Nor-QD)
- Lower dose of progesterone so less ovulation prevention.
- Mechanism of action
  - Thickened cervical mucus
  - Thinning of the endometrium
  - Decreased tubal motility
- Failure rate 1.1%-13%
- Take at the same time daily!!!
Mini-Pill

• Continuous dosing (no hormone free days)
• May or may not still have monthly menses
• Abnormal bleeding
• Works well for breast feeding moms – doesn’t reduce milk supply
Mini-Pill Contraindications

- Pregnancy
- Current breast cancer
- Rifampin, antiepileptics, St. John’s Wort (relative)
Permanent Contraception

- Vasectomy
- Essure
- Tubal ligation
  - Postpartum- modified Pomeroy
  - Fulgeration
  - Filschie clips
  - Fallope rings
  - Salpingectomy
Quick-start (same-day start) approach to initiation of new birth control method: Pill, patch, ring, DMPA injection, implant

1. Patient requests to start contraception with the pill, patch, ring, injection, or implant
   - Urine pregnancy test
     - Positive
       - Provide options counseling
     - Negative
       - First day of LMP
         - ≤7 days ago
           - Start method today. Patient should use back-up method for first week.
           - None
         - >7 days ago
           - Last episode of unprotected sex since LMP
             - ≤5 days ago
               - Offer hormonal emergency contraception today
             - >5 days ago
               - Counsel patient that:
                 - Negative pregnancy test is not conclusive.
                 - Hormonal contraception will not harm fetus.
                 - Patient wants to start new method today?
                   - Yes
                     - Start method today unless patient is using ulipristal for emergency contraception or the chosen method is the implant.
                     - Patient should use back-up method for first week.
                     - Obtain urine pregnancy test in two weeks.
                   - No
                     - Counsel patient to use a back-up method until next menses.
                       - Chosen method is pill, patch, or ring:
                         - Offer prescription for chosen method.
                         - Counsel patient to start method within 5 days of first day of next menstrual period.
                       - Chosen method is injection or implant:
                         - Counsel patient to return for injection or implant insertion within 5 days of first day of next menstrual period.
               - Urine pregnancy test
                 - Positive
                   - Provide options counseling
                 - Negative
                   - Continue new method

DMPA: depot medroxyprogesterone acetate; LMP: last menstrual period.
* Refer to UpToDate content on early pregnancy and pregnancy termination.
† Patient should use a barrier back-up method such as condoms for the first week after starting a new method.
Δ Unprotected sex includes episodes of sex in which a method of contraception was used but may not have been effective (eg, breakage of condom, multiple skipped pills).
◊ Refer to UpToDate content on emergency contraception.
§ For women using ulipristal for emergency contraception, progestin-containing contraception (ie, the pill, patch, ring, injection, and implant) should not be used for 5 days following ulipristal. For women taking levonorgestrel or combined estrogen-progestin emergency contraception, the new contraceptive method can be started after the emergency contraception.
¥ If the patient would like the contraceptive implant, some providers prefer to offer a single injection of DMPA today and ask the patient to return for the implant within 5 days of the first day of her next menstrual period (to avoid the need for implant removal if the repeat urine pregnancy test is positive).

Emergency Contraception

• **What does it do?**
  • Contraceptive methods to prevent pregnancy after unprotected intercourse.
  • Sexual assault.
  • Contraceptive failure.
Types of EC

- Most common EC method is oral progestin-only pills.
- **Better tolerated than the combined regimen.**
  - In the U.S. two levonorgestrel regimens include a single –dose LNG 1.5mg &
  - A two-dose regimen of 0.75mg LNG taken 12 hrs. apart.
- Available without prescription to 17 yr. olds.
Other Emergency Contraception

- **Antiprogestin** known as Ella— a 30mg tablet of ulipristal acetate (combo of high doses of estrogen & progestin) requires a rx.  
  - Is as effective as the LNG methods. More effective up to 72-120hrs after unprotected intercourse.

- **Copper IUD** most effective form. Expensive and for medically eligible women. Effective up to 5 days after unprotected intercourse.
Mechanism of EC Action

- Works through inhibition or delay of ovulation.
- Copper IUD inhibits fertilization by affecting sperm viability & function.
Effectiveness of EC

• Copper IUD most effective: failure rate of 0.04% to 0.19%.
• Mifepristone or Ulipristal: failure rate of 1.4%
• LNG: failure rate of 2-3%.
• Looking at another way – if all methods were used within 72hrs of unprotected PG the estimation is that the copper IUD prevents 95% PG, ulipristal prevents 2/3rds, & LNG around 50%.
Variables that influence Effectiveness

- BMI
- Conception based on day of cycle
- Further intercourse after EC – four-fold increase in PG risks
Safety of Repeated Use of EC

- EC may be used more than once in the same menstrual cycle.
- Data safety not available if EC is used frequently over a long time.
- *Education is key element*
Case Study

- 16 yr gr 0 patient comes in today accomp. by her mom to initiate contraception. Plays sports in high school so would like predictable bleeding patterns. Denies sexual activity, but has a boyfriend so mom would like her started on contraception.

- Medical history is essentially negative. However, she has migraines listed as a problem. With further questioning she hasn’t ever been officially dx with migraines and denies migraine type symptoms. HA’s occur mostly with stress.

- Patient prefers OCP’s.
What’s Our Decision

- What type of contraception would you offer based on the MEC wheel?
- What other discussion/options needs to occur?
Case Study

- 49 yr Gr 4 P 4 presents today with a CC of abnormal uterine bleeding. Patient states “I’ve had it with this heavy bleeding”.
- Reports saturating a pad/tampon every 1-2 hrs. and soaks through her clothes. Hgb level is 11.9.
- Positive medical history includes: migraines with auras, previous DVT and bariatric surgery. Recent gyn sono showed a 4cm fibroid.
- Prefers to avoid surgery if possible.
What’s Our Decision?

- What are the possible options?
Changing Gears Again
Adnexal Masses

• **Definition:**
  • Mass of the ovary, fallopian tube, or surrounding connective tissue.

• Common gyn problem.

• Found in females of all ages.

• Wide variety of types
Prevalence of Adnexal Masses

- 335 asymptomatic women aged 25-40 – on sono 7.8% found an adnexal lesion.

- 8794 asymptomatic postmenopausal women – 2.5% had a simple unilocular adnexal cyst.
Evaluation of Adnexal Masses

- **Address acute conditions:**
  - Ectopic vs
  - Malignant vs.
  - Adnexal torsion
Principal Goals

- Determine the most likely etiology.
  - Challenging process
  - Many different types
  - Definitive dx requires surgery.
Differential diagnosis of adnexal mass

**Benign**
- Functional (physiologic cyst)
- Corpus luteal
- Theca lutein
- Polycystic ovaries
- Endometrioma
- Cystadenoma
- Mature teratoma
- Benign sex cord-stromal

**Malignant or borderline**
- Epithelial CA
- Epithelial borderline neoplasm
- Malignant ovarian germ cell
- Malignant sex cord-stromal
Differential diagnosis Cont.

**Gynecologic: tubal**
- Ectopic pregnancy
- Hydrosalpinx
- *Gynecologic: extraovarian and extratubal*
  - Paraovarian cyst
  - Paratubal cyst
  - Uterine leiomyoma
  - Tubo-ovarian abscess

**Malignant or borderline**
- Epithelial CA
- Serous tubal
- *Malignant gynecologic*:
  - Metastic endometrial CA
# Nongynecologic

<table>
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<tr>
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<th>Malignant</th>
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<tr>
<td>Constipation</td>
<td>Appendiceal neoplasm</td>
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<tr>
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<td>Bowel neoplasm</td>
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<tr>
<td>Diverticular abscess</td>
<td>Breast, colon metastasis</td>
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<td>Retroperitoneal sarcoma</td>
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<td>Peritoneal cyst</td>
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<td>Nerve sheath tumor</td>
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Urgent Adnexal Masses

- Severe pain
- First trimester bleeding
- Fever
- Represent a minority of patients
Medical History/Presenting Symptoms

- Pelvic pain or pressure most common symptom.
- Some women present with genital tract bleeding.
- Characteristics of pain should be elicited including the following:
  - Onset, location, duration, is it constant or intermittent, and assoc with other factors (menstrual cycle).
Medical history cont.

- Ovarian cancer may be assoc. with pelvic or abdominal symptoms.
- History of fever or vaginal discharge.
- History of infertility.
- Age of patient.
- Reproductive status.
Physical exam.

- Pelvic exam
- Absence of an adnexal mass on exam does not exclude the presence of a pelvic mass.
- Small adnexal masses are difficult to palpate.
- Larger masses can float out of the pelvis & difficult to feel.
- Ovaries not usually palpable in post menopausal women.
- The size, consistency & mobility of a mass should be noted.
- Some masses are found through incidental findings.
Evaluation of Adnexal Masses

- Pelvic ultrasound is the imaging choice.
- Both transvaginal and transabdominal should be obtained in most patients.
- Transvaginal provides better resolution of pelvic structures.
- Definitive diagnosis is the histologic evaluation of the adnexal mass.
Worrisome Adnexal Masses

- Malignancy must be excluded
- Surgical exploration
  - These masses include:
    - Most complex masses that have solid components,
    - Thick walls
    - Septations or
    - Other hyperechoic (increased density) findings.
    - Most common neoplasms are epithelial (outer layer of the skin).
Post Menopausal Women

- Excluding malignancy is the main priority.
- Average age of dx of ovarian cancer in the U.S. is 63 yrs. Old.
Clinical features of benign adnexal masses

**Functional**
- Most common
- Arise when the follicle doesn’t rupture, but continues to grow.
- May become hemorrhagic
- Smooth, thin-walled & unilocular
- Can become large
- Generally resolve with follow up.

**Hemorrhagic**
- Follicle bleeds
- Unilocular
- Variable wall thickness
- Acute pain
Clinical features cont.

Endometrioma
- Cyst and the endometrial tissue grows into the ovaries
- Chronic pelvic pain
- PCOS
- Multiple cysts
- String of pearls

Tubo ovarian abscess
- Thick walled complex cystic
- Abundant flow
- Looks like an abscess
- Generally present with fever & vag discharge.
Clinical features cont.

Mature teratoma
- Dermoid
- Young women
- Unilocular
- Generally find fluid, fat, and debris

Pre-menopausal
- Born with 2 million oocytes
- 10 mature each cycle
- Dominant follicle at midcycle ruptures.
- Post menopausal
- Stop forming follicles.
Ectopic Pregnancy

- Ectopic pregnancy is an extrauterine PG.
- 98% of ectopic PG occur in the fallopian tube.
- Other possible sites include: cervical, interstitial (referred as cornual), pregnancy located in the proximal fallopian tube, hysterotomy (c/s scar), intramural, ovarian, or abdominal.
- Heterotopic (multiple gestation includes both an uterine & extrauterine PG). Extremely rare.
Ectopic PG

Normal Pregnancy

Ectopic Pregnancy
Diagnosis of Ectopic PG

- Based on combination of the serum quantitative measurement & findings on transvaginal sono.
Diagnostic Evaluation

**Step 1**
- Confirm that the patient is PG.
- Evaluate for hemodynamic instability.
- Determine if PG intrauterine or extrauterine.
- Menstrual history and estimated gestational age.
- hCG performed initially and followed with serial levels.
- hCG can be detected in serum & urine as early as eight days. Can detect a quant of 25.
Diagnostic Evaluation

- **Step 2**
  - Evaluate hemodynamic stability
  - Most common presenting symptom is first-trimester vaginal bleeding and/or abdominal pain.
  - May be asymptomatic.
  - Typically appear six to eight weeks after LMP.
  - Normal PG signs (breast tenderness, frequent urination, nausea) are sometimes present.
  - Ectopic PG may be un-ruptured or ruptured at time of presentation.
Diagnosis Evaluation

- Tubal rupture can be life-threatening hemorrhage.
- Symptoms suggestive of rupture include:
  - Severe or persistent abdominal pain.
  - Symptoms suggestive of ongoing blood loss (feeling faint or loss of consciousness).
- PE – VS and evaluate hemodynamic stability.
  - Often unremarkable
  - May have localized tenderness
  - Speculum exam to confirm uterine bleeding
Diagnostic Evaluation

- Fast ultrasound
- CBC, blood type and screen
Diagnostic Evaluation

- **Step 3**
  - Assess pregnancy location – transvaginal most helpful.
  - Findings consistent with an intrauterine PG.
  - Findings diagnostic of an ectopic PG
hCG levels (quants)

- Normal pattern of hCG in PG:
  - Expect a rise at least of 66% every 48hrs.
  - *A serum hCG that does not rise appropriately is consistent with an abnormal PG.*
  - A decreasing hCG level is most consistent with a failed PG.
  - A hCG that is rising normally should be evaluated with TVUS when the hCG reaches 3500.
  - Patients with an abnormal rise TVUS should be ordered. If findings confirm an IUP – an ectopic PG is excluded.
  - If an extrauterine adnexal mass is seen then is consistent with an ectopic and medical or surgical intervention is needed.
Case Studies

- Patient presents with a positive PG test and a CC of severe RLQ pain with vaginal spotting. TVUS performed. IUP not seen. 2cm L ovarian cyst seen that is echoic and thin septation.
  - 4/3 - 1156
  - 4/5 – 1411
  - 4/7 – 1508 – given a dose of methotrexate.
  - 4/11 – 1966
  - 4/13 - 1964
  - 4/17 – 1513
Case Study

- Follow up on 4/11 – no spotting or pain. PG symptoms were declining.
- Presented on 4/24 with vag. Bleeding, increased pain, dizzy and light headed.
- Surgical intervention – ruptured ectopic.
Word about Methotrexate

- As Methotrexate works on the ectopic hCG is released into the system so expect a bump up in the quant after the shot is given.

- The day Methotrexate is given the quant level starts over. It’s like starting at zero again.

- Recheck quants on day 4 & 7.

- Expect a decrease of 7-10% in the hCG level. If decrease doesn’t occur then a second shot of Methotrexate is recommended and follow with the same regimen.
Case Study

- Presented with positive PG test. Hx. of recent tubal reversal. LLQ pain. No spotting/bleeding.
- Quant levels:
  - 3/6 – 232 TVUS – no IUP seen 5.3GA. Hydrosalpinx seen on L ovary.
  - 3/8 – 566
  - 3/10 – 454
  - 3/15 – 136
  - 3/20 - 17
Case Study

- Presented with positive PG test. Bleeding & cramping.
- Quants:
  - 1/30 - 1431
  - 2/1 – 1031. No IUP seen.
  - 2/2 – D&C. Path showed no gestational tissue seen.
  - 2/6 – 1310 – presented with bleeding & cramping. On exam patient’s BMI is 56. Complained of suprapubic pain only.
- Methotrexate shot given.
  - 2/10 – 726
  - 2/13 – 488
  - 2/24 – 26
- Given a dose of methotrexate on 2/7. Complicating this patient’s care was her poor follow up.
Questions?