Women's Health 2

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Learning Objectives

1. Review the diagnosis and management of common breast issues.
2. Describe the principles of patient selection regarding contraceptives.
3. Summarize the basic steps for the initial evaluation of the infertile couple.

Breast Disease

- Mass
- Mastitis
- Paget disease of the breast

Question 1

A 51 yo woman presents to the office with the complaint of a left breast mass. She reports she was in an automobile accident 5 months ago and first noted the mass at that time. She thought it was due to the seat belt she was wearing. On examination you note a 1 cm hard mass in the upper outer quadrant of the left breast. It is mobile and nontender. There is no overlying change in the skin, nipple discharge, or nipple retraction. You review her chart and note she had a negative screening mammogram 6 months ago. *Which of the following is the first diagnostic imaging study that should be performed in evaluating this new palpable breast mass?*

A. Ultrasound
B. MRI
C. Mammogram
D. CT

Breast Mass

- May be benign or malignant
  - ~90% of palpable breast masses in women 20s to early 50s are benign
- Benign mass may be solid or cystic
- Malignant mass is TYPICALLY solid
- Cystic mass with solid components (complex cyst) can also be malignant

Differential

Benign

- Fibroadenoma
- Cyst
- Fibrocystic changes
- Galactocele
- Fat necrosis

Malignant

- Infiltrating ductal
    - Accounts for 70-80% of invasive breast cancers
- Infiltrating lobular
- Mixed ductal/lobular

Evaluation of Breast Mass

- Characterization of mass
  - Location, size, margin irregularity, relationship to the chest wall, density of the breast tissue; evaluation of the skin overlying the mass and nipple
- Supraclavicular, cervical, axillary nodes
- Breast imaging

Imaging

- **Palpable mass**
  - **Unilateral diagnostic mammogram**
    - **First imaging study** for a woman with a new, palpable breast mass, and **should be performed even if recent mammogram was negative**
    - A normal mammogram DOES NOT eliminate the need for further evaluation of a suspicious mass [even though the false (-) rate of mammograms is <5% for clinically palpable breast cancers].
  - Ultrasound
    - Always perform in setting of new palpable abnormality – help differentiate benign cyst from a benign or malignant solid mass
    - **For young women with a clinically benign mass e.g., fibroadenoma and no family history of premenopausal breast cancer, US is a useful initial diagnostic imaging study**
  - MRI is NOT indicated for the work-up of an undiagnosed mass – reserved for diagnostic dilemmas

Biopsy

- Diagnosis of benign or malignant mass is confirmed by a breast biopsy
- Core needle biopsy using image guidance (or FNA with experienced cytopathologist) for ANY mass not identified as a simple cyst
- Image guidance ensures adequate localization of the mass and placement of localizing clip for future identification of the mass if required for surgical intervention (open biopsy)

Question 2

A 32 yo breastfeeding female presents to the office with redness over her right breast and a fever of 101F. The redness started 3 days ago and the fever within the past 12 hours. She delivered via cesarean 14 days ago and remained in the hospital for 7 days secondary to the development of endomyometritis. She is non-toxic in appearance. Her exam reveals a hard, red, tender, swollen area over the right breast measuring 4 by 6 cm. There is no axillary adenopathy. The remainder of the examination is normal. Which one of the following would be the most appropriate management option?

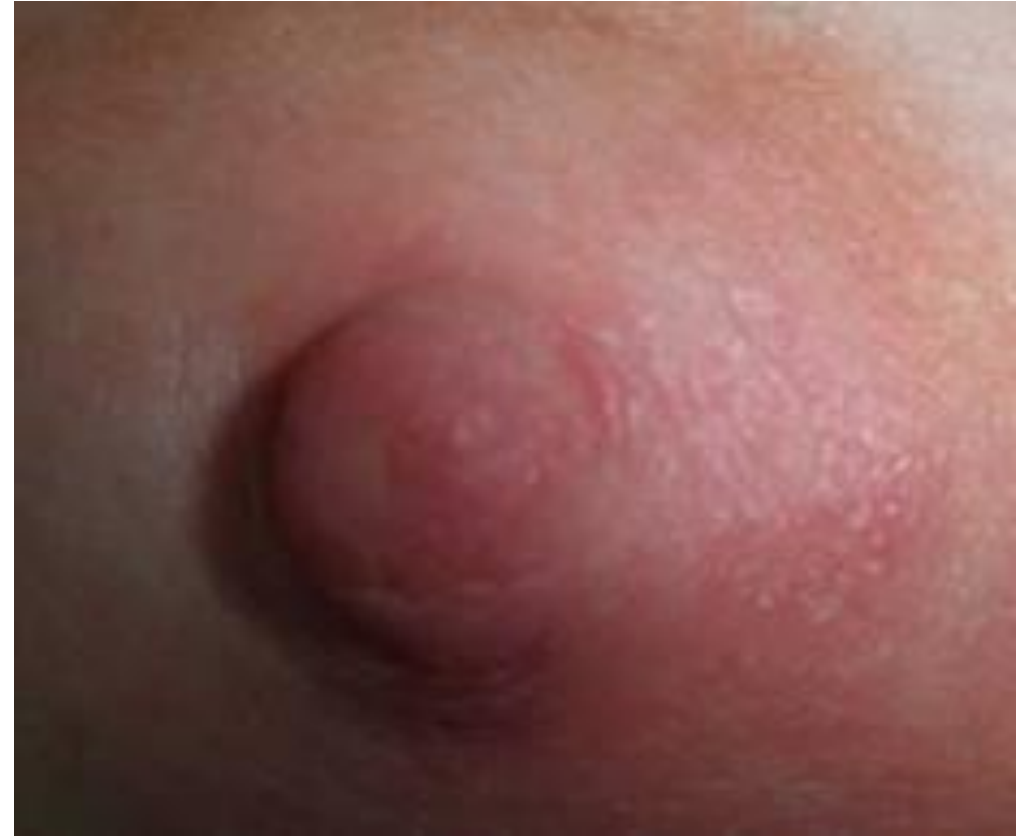
A. Dicloxacillin
B. Clindamycin
C. Cephalexin
D. Augmentin

Mastitis

- Majority is **lactational**; usually secondary to breastfeeding problems
- Ultrasound is the most effective method of differentiating mastitis from breast abscess
- Most lactation associated breast infections are caused by ***staphylococcus aureus***. MRSA is becoming an increasingly important pathogen in cases of lactational mastitis
- Manage initially with systematic emptying of the breast, anti-inflammatory agents and symptomatic treatment to reduce pain and swelling. **If symptoms do not improve (48-72h), treatment with antibiotics**
- Breastfeeding **continues** during treatment for lactation-associated breast infections. Breast emptying is essential throughout the course of treatment.

Mastitis

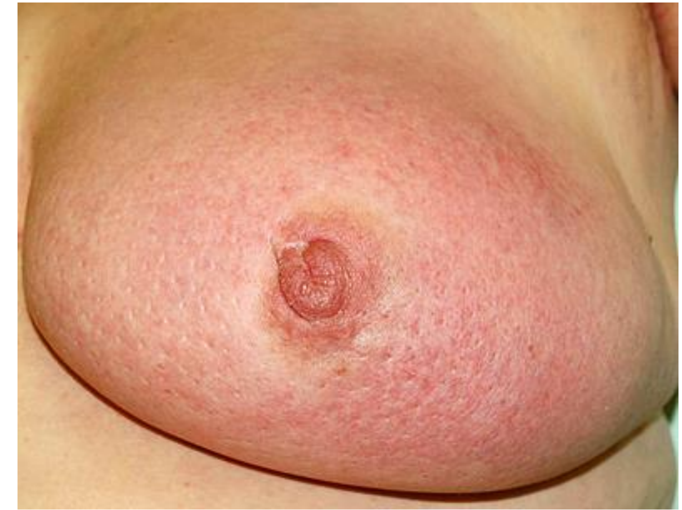
- Hard, red, tender, swollen area
- Fever >38.3^{o} (typically)



Clinical Manifestations

- Lactational mastitis typically presents as a hard, red, tender, swollen area of one breast associated with fever >38.3^{0} C in a nursing mother.
- Other systemic complaints may variably include myalgia, chills, malaise, and flu-like symptoms.
- In the early stages of breast infection the presentation can be subtle with few clinical signs, while patients with advanced infection may present with a large area of breast swelling with overlying skin changes (e.g., erythema).
- Reactive lymphadenopathy can also cause axillary pain and swelling.

Differential



- Plugged ducts
- Galactoceles
- Inflammatory breast cancer
  - In inflammatory breast cancer the skin examination will demonstrate thickening, erythema, peau d'orange, and there is often associated axillary lymphadenopathy.
  - It is important to rule out inflammatory breast cancer if a suspected breast infection does not respond to antibiotics.

Treatment

- Non severe infection, absence of risk factors for MRSA
    - Dicloxacillin – 500 mg po QID
    - Cephalexin – 500 mg po QID
    - Clindamycin – 300 mg po QID
- Nonsevere infection *with risk for MRSA…*

Risk Factors for Methicillin-resistant *Staphylococcus aureus* (MRSA)

- ✓ **Recent hospitalization**
- Residence in a long-term care facility
- ✓ **Recent antibiotic therapy**
- **HIV infection**
- Men who have sex with men
- Injection drug use
- **Incarceration**
- **Military service**
- Sharing needles, razors, or other sharp objects
- Sharing sports equipment
- Diabetes
- ✓ **Prolonged hospital stay**
- Hemodialysis

Treatment

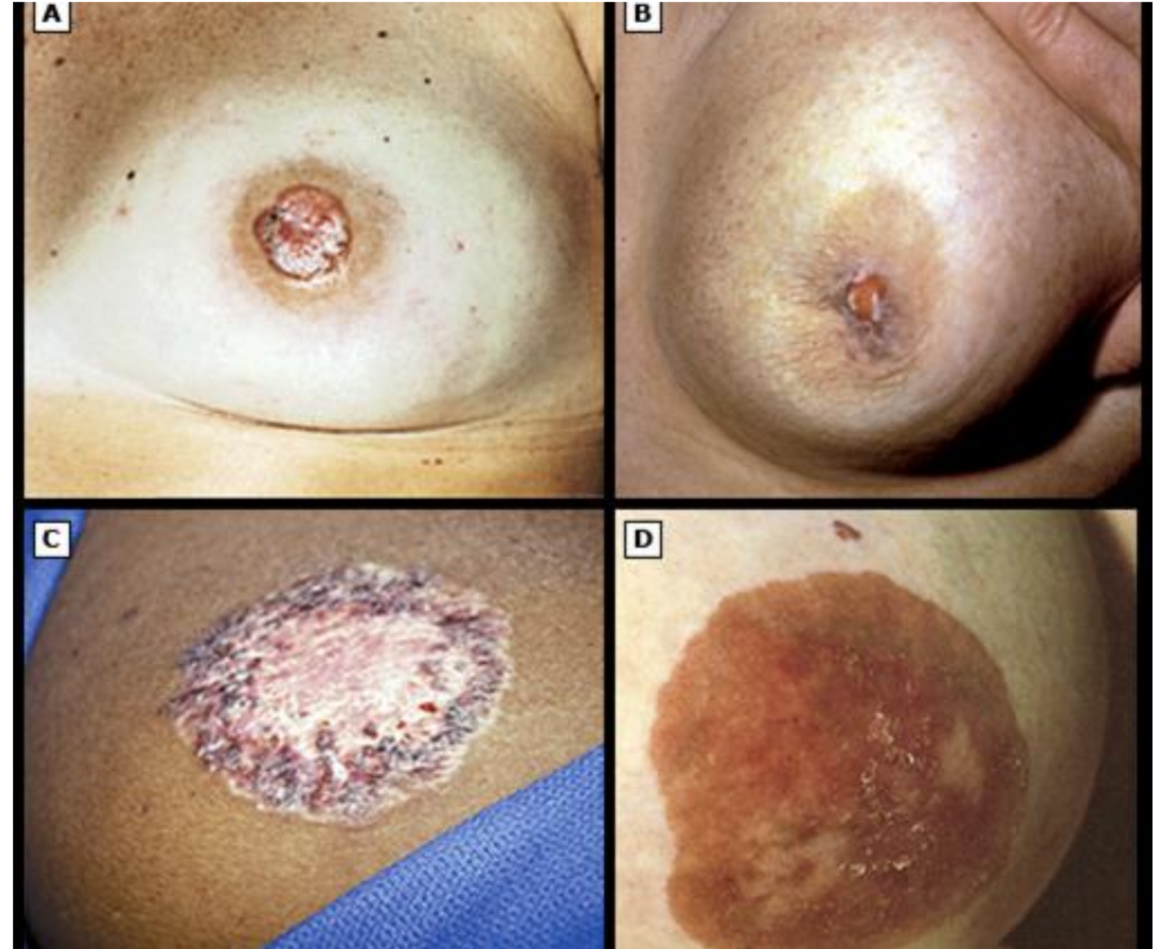
- **Non severe infection, absence of risk factors for MRSA**
  - Dicloxacillin – 500 mg po QID
  - Cephalexin – 500 mg po QID
  - Clindamycin – 300 mg po QID
- **Non severe infection with risk for MRSA**
  - Clindamycin – 300 mg po QID
  - Trimethoprom-Sulfamethoxazole – 1-2 tabs po BID
  - Linezolid – 600 mg po BID
- **Setting of severe infection (e.g., hemodynamic instability, progressive erythema)**
  - Empiric inpatient therapy with **vancomycin** (15 to 20 mg/kg/dose every 8 to 12 hours, not to exceed 2 g per dose), therapy tailored to culture and sensitivity results
  - Gram stain results (+) for gram negative rods – empiric antibiotic therapy against these organisms with a third-generation cephalosporin or a combination beta-lactam/beta-lactamase agent

Paget Disease of the Breast (PDB)

- 1-3% of new cases of female breast cancer
- Presentation
  - Scaly, raw, vascular or ulcerated lesion on the nipple then spreads to areola; (+/-) bloody discharge
  - Pain, burning, pruritis – may be present before the development of clinically apparent disease
- An **underlying breast cancer is present in 85% of cases** – although often **without** an associated breast mass or mammographic abnormality

Paget Disease of the Breast Presentation

- Various presentations
- Paget disease is typified by erythematous, scaly, and weeping "**eczema**" that involves the **nipple**.
- Discoloration, depigmentation and desquamation of the nipple and areola are sometimes seen.



Differential

Benign

- Eczema
- Contact dermatitis
- Nipple adenoma

Malignant

- Bowen's disease (Squamous carcinoma of the epidermis)
- Basal cell carcinoma
- Superficial spreading malignant melanoma

Evaluation

- Full thickness wedge or punch biopsy of the nipple
  - Pathologic hallmark is malignant, intraepithelial adenocarcinoma cells (Paget cells) within the epidermis of the nipple
- Bilateral mammography to identify associate mass as well as rule out synchronous cancers
- Prognosis is dependent upon the presence of an underlying invasive ductal carcinoma or axillary node metastasis
- PDB presenting with a palpable mass is usually associated with more advanced disease than cases without a palpable mass

CONTRACEPTION

Combined Hormonal Options

- **Pill**
  - Monophasic pills recommended as the first choice for women starting combined OCPs
  - 25-year mortality from all causes same for OCP users vs nonusers.
- **Ring**
- **Patch**
  - Highly efficacious in women < 90 kg
  - Safety warning (FDA)
    - ~ 60% more estrogen per cycle than 35 mcg pill (11/2005)
    - > 3x risk of VTE compared to combined OCP
- **Inhibit ovulation at pituitary and hypothalamus**
- **Estrogen**
  - Ethinylestradiol (most common), mestranol (a prodrug of ethinylestradiol), and estradiol
  - Estetrol (E4), naturally produced during pregnancy, being produced from plant source.
- **Progestins**
  - Drospirenone – no risk of hyperkalemia

JAMA, 2001; 285:2232-2239

Prerequisite Preventive Services?

Stewart et al. *Systematic Review*

- Consensus statement reviewing and summarizing relevant medical literature and policy statements
- No evidence supporting necessity of CBE and pelvic examination
- The available evidence supports prescribing hormonal contraception based only on:
  - **Blood pressure measurement**
  - **Review of medical history**

Medical History

- **Chronic diseases**
  - Hypertension
  - DM
  - Hyperlipidemia
  - Migraine
  - Immune deficiency states
  - Cancer
- **Gynecologic history**
  - Infections
  - Pap
- Previous contraceptive methods, successes and failures
- VTE
- Tobacco use

Best Practices in Oncology: Recommendations from the Choosing Wisely Campaign

American Academy of Family Physicians

- Do not require a pelvic exam or other physical exam to prescribe oral contraceptive medications.

American Academy of Family Physicians. Choosing Wisely: Pelvic exam or physical exams to prescribe oral contraceptive medications. 2014. http: //www.aafp.org/patient-care/clinical-recommendations /all / cw-oral-contraceptives.html.

Combined Contraceptives Benefits

- Less risk of ectopic pregnancy
- Increases bone mass
  - Reduces risk of postmenopausal hip fractures
- Relieves dysmenorrhea
- Improves symptoms of PCOS
  - High estrogen/progestin ratio
- Low-dose pills useful for management of perimenopause

Combined Hormonal Contraceptives

Decrease

- Iron deficiency anemia
- Fibrocystic breast disease
- Functional ovarian cysts (use high estrogen content/fibroids)
- Pelvic inflammatory disease
  - Cervical mucus/reduced menstrual blood flow
  - Less retrograde menstruation
- Cancer
  - Ovarian and endometrial (OR 0.57; NNT 60)* cancers
    - Protective effects persist up to 20 years after discontinuation.
  - Colorectal cancer (OR 0.86; NNT 132)*
- Endometriosis (use strong progestin component)

* Gierisch JM et al. Cancer Epidemiol Biomarkers Prev. 2013 Sep 6 [e-pub ahead of print]. (http://dx.doi.org/10.1158/1055-9965.EPI-13-0298)

Drug Interactions With Combined Hormonal Contraception

- Drugs likely to lead to **contraceptive failure**
  - Rifampin – otherwise little effect from antibiotics [SOR:A]
  - Anticonvulsants (significant effect) – except valproic acid
  - Antifungals (griseofulvin)
  - HIV medications

Extended vs. 28-day Cycle OCPS

Cochrane 2014

- Similar pregnancy rates, safety profiles, compliance
- The continuous or extended-cycle and traditional regimens appeared similar, as judged by bleeding, discontinuation rates, and reported satisfaction.
- Extended regimens fared better: headaches, genital irritation, tiredness, bloating, and menstrual pain.

Progestin Only Options

- **Pill**
  - Must be taken q day at SAME time (2 h window)
    - Back-up if > 3 h late
- **Implant**
  - q 5 years
  - < 125% IBW
- **IUS**
  - q 3-8 years
- **DMPA**
  - q 3 months
  - *Subcutaneous, 104mg (Depo-SubQ Provera) can ne self administered safely and effectively [SOR A]*
- No effect on BP; risk of VTE, CVA, MI [SOR: B]
- **Most common side effect: Irregular bleeding**

Management of Unscheduled Bleeding in Women Using Contraception

Contraceptive	Preferred Treatment
DMPA	• Expectant management • 7-14 days oral estrogen (1.25 mg conjugated estrogen or 2 mg micronized estradiol • Transdermal patch (0.1 mg estradiol/24 h) • 10-20 days of low-dose combined OCP
Etonogestrel implant	• Expectant management • Low-dose combined OCP for 10-20 days (not studied) • NSAID for 5-7 days
Progestin pills	• Take at same time each day and minimize missed doses.
Levonorgestrel IUD	• NSAID for 5-7 days (e.g., ibuprofen 400 mg, naproxen 250 mg, or mefanamic acid 500 mg TID)

Edelman A and Kaneshiro B. Management of unscheduled bleeding in women using contraception. www.uptodate.com, 2013.

Depot medroxyprogesterone acetate *(DMPA) - q 12 weeks*

- Typical failure rate – ~ 6%
- Side effects
  - Weight gain, amenorrhea, hair loss, bone loss
- ACOG
  - **No longer recommends limiting injections to 2 years**
  - No routine monitoring of bone density
  - Recommend
    - 1300 mg calcium and 600 IU of vitamin D3 daily
    - Participate in weight-bearing exercise

Depot medroxyprogesterone acetate and bone effects. Committee Opinion No. 602. American College of Obstetricians and Gynecologists. Obstet Gynecol 2014;123:1398–402.

DMPA

- One week to take effect if given AFTER first five days of the period cycle
- Return to fertility
  - 3-18 months (avg. 9-10 months)
- Benefits
  - Reduced endometrial cancer – 80%
    - Thought to be due to both the direct anti-proliferative effect of progestogen on the endometrium and the indirect reduction of estrogen levels by suppression of ovarian follicular development
  - No increased risk of DVT, PE, CVA, MI
  - Decreased risk
    - PID
    - Ectopic pregnancy
    - Primary dysmenorrhea
    - Ovulation pain
    - Functional ovarian cysts

Progestin-Only Methods More Appropriate Than Combined

- Smoking or obesity AND over age 35 [SOR B, A; respectively]
- Hypertension with vascular disease or > age 35 [SOR B]
- Lupus with vascular disease, nephritis [SOR A]
- Migraine with focal aura [SOR B]
  - Combined hormonal contraceptives increase risk of ischemic stroke
- Current or personal history of VTE associated with pregnancy or estrogen unless on anticoagulation [SOR A]
- Coronary artery/cerebrovascular disease [SOR C]

Types of IUDs

IUD (Copper)	Available Since	Years Effective	Use and FDA Approved	Possible side effects
Copper (Paragard)	1988	10	• Approved only in parous women, but available to all women regardless of parity • Can be used as Emergency Contraception when inserted within 5 days	• Abnormal menstrual bleeding • Higher frequency or intensity of cramps/pain
IUD (Hormonal)				
Mirena	2001	8 (2022)	Approved only in parous women, but available to all women regardless of parity	• Inter-menstrual spotting in the early months • Reduces menstrual blood loss significantly • Hormone-related: headaches, nausea, breast tenderness, depression, cyst formation.
Skyla *(slightly smaller than Mirena)*	2013	3	Approved for women regardless of parity	
Liletta*	2015	8 (2022)	Approved for women regardless of parity	
Kyleena *(lower hormone levels than Mirena)*	2016	5	Approved for women regardless of parity	

**Actavis in conjunction with Medicines360, a non-profit women's pharmaceutical company, developed Liletta specifically to be low cost and available to public health clinics enrolled in the national 340B Drug Pricing Program, which provides reduced cost pharmaceuticals to providers that serve low-income populations.*

Considerations for IUDs

- **IUD insertion, not IUD use, is associated with PID**
  - *Cochrane*
  - *Systematic Review (Grimes, Mohllajee)*
  - *ACOG Practice Bulletin 2011*
- **DO NOT cause future infertility**
- **Nulliparas can use an IUD; Uterus sounds to depth of a minimum 6 cm**
- **The USMEC guidelines state that the advantages of using the IUD in** adolescents generally outweigh the risks.
- Risk of uterine perforation

Guidelines for IUDs

Organization	Recommendation
ACOG 2007	Asymptomatic women may use an IUD within 3 months of treated pelvic infection or septic abortion.
ACOG 2007	All adolescents should be screened for GC and chlamydia prior to insertion.
Cochrane 2007	No benefit from doxycycline or azithromycin prior to insertion.
CDC 2010	**Evidence is insufficient to recommend the removal of IUDs in women diagnosed with acute PID. However, caution should be exercised if the IUD remains in place, and close clinical follow-up is mandatory. The rate of treatment failure and recurrent PID in women continuing to use an IUD is unknown, and no data have been collected regarding treatment outcomes by type of IUD (e.g., copper or levonorgestrel).**

Intrauterine Contraceptives

Noncontraceptive Benefits

- Intrauterine contraceptives decrease the risk for endometrial cancer
- The levonorgestrel-releasing intrauterine system (LNG-IUS) can be used as a first-line option to treat menorrhagia
  - May be used in the presence of fibroids, unless they significantly distort or enlarge the uterine cavity
  - Produces a 97% decrease in menstrual blood loss
  - In a retrospective study, 80% of women who were prescribed the LNG-IUS for menorrhagia chose not to undergo a hysterectomy, as opposed to 9% of women who received normal care for the condition
    - Levonorgestrel system may be an acceptable alternative to hysterectomy in women with AUB-O

Hubacher D, Grimes DA. *Obstet Gynecol Survey*. 2002;57:120-128; Castellsague X, et al. *Int J Cancer*. 1993;54:911-916.

Recommendations for Practice

Clinical Recommendation	Evidence Rating
Nulliparous women and adolescents can be offered an IUD, although the 20-mcg per 24 hours levonorgestrel-releasing IUD (Mirena) is not approved by the U.S. Food and Drug Administration for use in nulliparous women	C
Women who are at high risk of STIs but have no active signs or symptoms of genital tract STI should be tested for STIs at the time of IUD insertion. Insertion of the IUD may occur on the same day as STI testing, without waiting for test results. If results are subsequently found to be positive, treatment can be administered at that time and the IUD **left in place**.	C
For women with a known STI that causes cervical infection, it is recommended that IUD insertion be delayed for at least three months after resolution of the infection.	C
Prophylactic antibiotics should not routinely be administered before IUD insertion. Antibiotic prophylaxis does not have a major effect on reducing the risk of pelvic infection, and does not alter the need for IUD removal in the months after insertion.	B
Misoprostol (Cytotec) should not be administered before IUD insertion. Although an earlier study showed easier insertion with misoprostol, subsequent studies showed no benefit and increased side effects.	B
If a woman with an IUD becomes pregnant, the IUD should be removed.	C

Barrier Methods – *Key Points*

- Sponge
  - Does not protect against STIs (according to manufacturer)
  - Nonmenstrual toxic shock syndrome (sponge, diaphragm, cap)
    - 2 cases/100,000 users per year
- Diaphragm
  - Increased incidence of UTI
- Latex condom
  - Consistent use results in 80% reduction of HIV
  - Use only water-based lubricants

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Castillo	12.00

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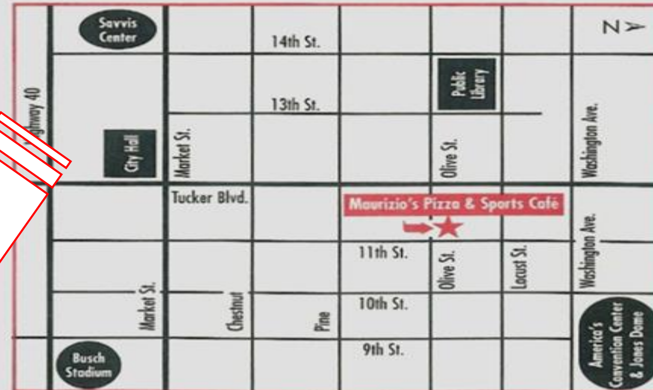

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Natural Family Planning

- Pluses
  - No adverse drug effects
  - No medication or device cost; cannot “run out” of method
  - Immediately reversible
  - Acceptable to all major religions
  - Expands couples’ communication and forms of sexual expression
- Minuses
  - No noncontraceptive benefits of some other methods
  - Requires periodic abstinence
  - Requires intensive education

ACOG

Breastfeeding: Maternal and Infant Aspects Committee Opinion

- All family planning choices are available to the postpartum lactating woman
- Choice and clinical ramifications merit additional counseling
- Support women in choosing breastfeeding
  - Accurate information
  - Problems arise
- Early discussion of contraception and follow-up
  - ***Options to be explained in detail***
    - Nonhormonal methods
    - Hormonal Methods
    - Lactational Amenorrhea Method

Question 3

According to ACOG, use of emergency contraception is recommended no longer than how many hours after inadequately protected or unprotected intercourse in women who do not desire pregnancy?

A. 48 hours
B. 72 hours
C. 96 hours
D. 120 hours

Postcoital Treatments for Preventing Pregnancy

Regimen	Formulation	Timing of use after unprotected sexual intercourse[1]	Access	FDA LABELED FOR USE AS EC
Selective progesterone receptor modulator	1 tablet, containing 30 mg of ulipristal acetate	Up to 5 days	Requires a prescription	Yes
Progestin only	1 tablet containing 1.5 mg of levonorgestrel	Up to 3 days(5)[5]	Available OTC without age restriction	Yes
Combined progestin-estrogen pills	A variety of formulations can be used[2]	Up to 5 days	Requires a prescription	No[3]
Copper IUD *(most effective form)*	N/A	Up to 5 days	Requires office visit and insertion by a clinician	No[4]

1. EC is BEST used ASAP after unprotected sex
2. Variety of formulations of combined OCPs can be used for EC. List of appropriate formulations: http://ec.princeton.edu/questions/dose.html#dose
3. Although not FDA labeled for use as EC, found to be safe and effective when used as EC and can be used off-label for this indication.
4. Most effective method of EC.
5. Off-label

Emergency Contraception (EC)

- Prevent fertilization by inhibition of ovulation (hormonal)
- Use after implantation does not interrupt an established pregnancy

Grimes et al. Ann Intern Med. 2002:137

EC Indications

ACOG – 2015

- Inadequately protected or unprotected intercourse in women who do not desire pregnancy (SOR A)
- No evidence that EC is unsafe for women with contraindications to OCPs or for those with medical conditions
- Should be offered up to 120 hours after unprotected intercourse (SOR B)

Clinical Follow-up?

- No scheduled follow-up is required
- Clinical evaluation for women who have used EC *IF*
  - ✓ Menses are delayed by a week or more AFTER the expected time OR
  - ✓ If lower abdominal pain or persistent bleeding develops (spontaneous pregnancy loss or ectopic)

Practice Recommendations

- Consider a tiered approach to contraceptive counseling, whereby the most effective and appropriate options are presented before less effective options.
- Requiring prerequisite preventive services, such as cervical cytology; breast examination; or evaluation for sexually transmitted infections, diabetes mellitus, dyslipidemia, liver disease, or thrombophilia, can introduce unnecessary barriers to contraceptive care.
- If a patient's pregnancy status is uncertain, consider same-day start of a nonintrauterine method to provide immediate coverage, and should order follow-up pregnancy testing two to four weeks later.
- Family planning services should be offered to adolescents with assurances of confidentiality, in the context of relevant law.
- Intrauterine devices and contraceptive implants are safe and effective for postmenarchal adolescents.

Infertility

Infertility
Am Soc Reprod Med Practice Comm 2000

- **Defined:** 1 year of attempted conception without successful pregnancy
- 85% of fertile couples would have been successful by this time.
- Earlier evaluation (6 months)
  - Oligomenorrhea/amenorrhea
  - Age > 35 years
  - Known or suspected pelvic pathology

Etiology

Factors	Percentage
Combined factors	40
Male factors	26-30
Ovulatory dysfunction	21-25
Tubal factors	14-20
Other (e.g., cervical factors, peritoneal factors, uterine abnormalities)	10-13
Unexplained	25-28

Lindsay TJ and Vitrikas KR. Am Fam Physician. 2015;91(5):308-214.

Essential History

- **Sexual**
  - Frequency of intercourse
  - Use of lubricants, etc.
  - Erectile dysfunction
  - Dyspareunia
- **Drug or alcohol use**
  - Particularly has a “toxic” effect on sperm
- **Caffeine**
  - Interferes with muscle contraction of fallopian tube
- **Medications including nonprescription**
- **Chronic disease**

Question 4

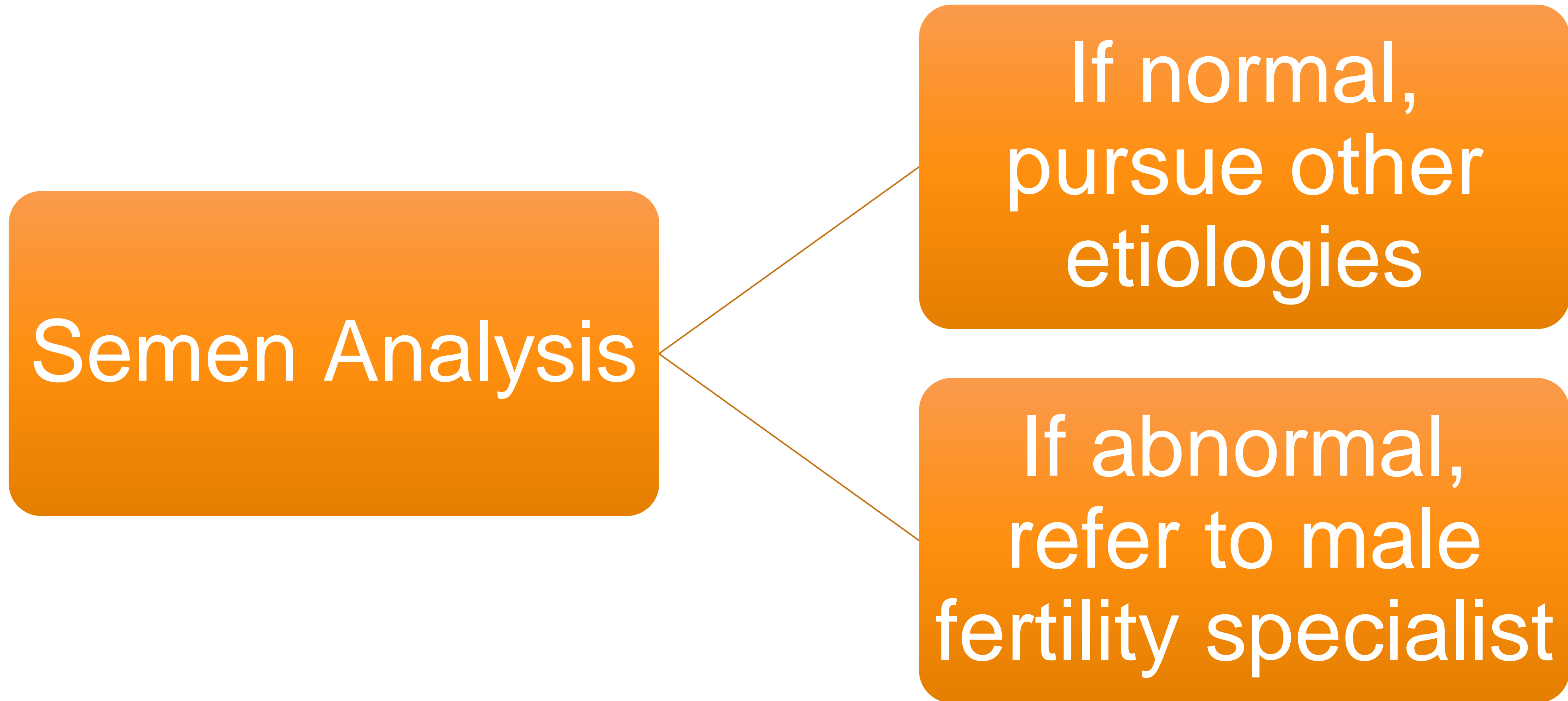
A couple with 12 months of infertility presents to the office for evaluation. A semen analysis is completed and found to be normal. What is the first step in evaluating the female?

A. Progesterone level
B. TSH level
C. FSH Level
D. Estradiol level

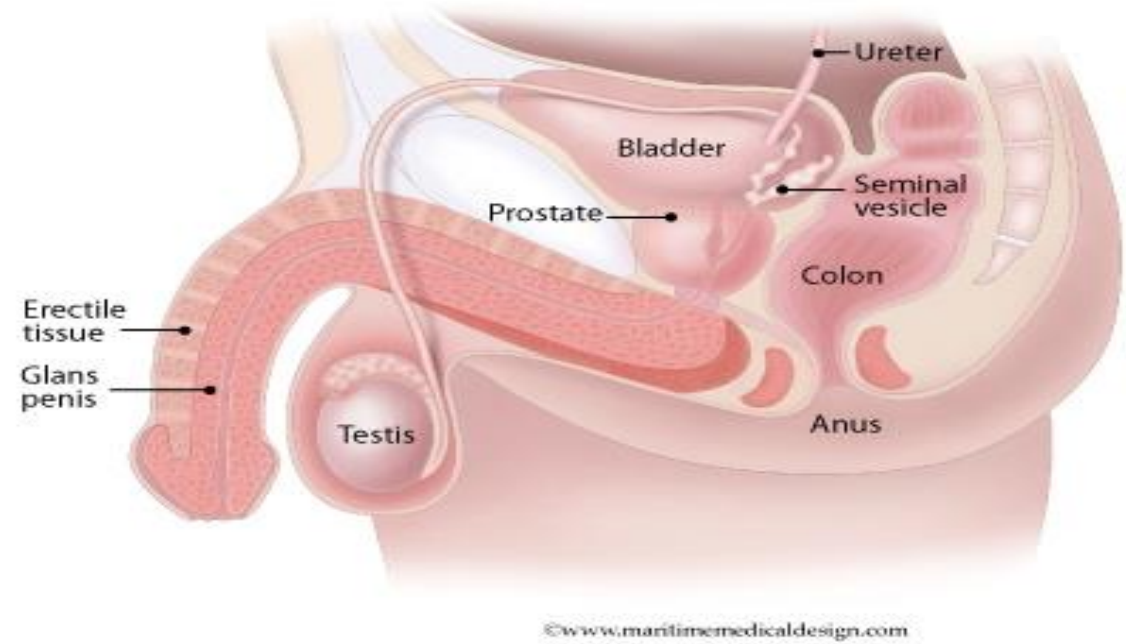
Primary Objectives at Workup

Rule Out	Procedure
Azoospermia	Semen analysis
Anovulation	Urinary LH and mid-luteal phase progesterone levels (day 21 of cycle for latter)
Tubal obstruction	Hysterosalpingogram (HSG) or laparoscopy
Uterine cavity anomalies	HSG or sonohysterogram
Decreased ovarian reserve	Serum FSH on day 3 of cycle ↑ FSH (> 15-29 IU/L) are associated with: • Poor ovarian response to exogenous gonadotropins • Reduced likelihood of successful conception

Male Evaluation



Male Factor



History: Paternity, surgery, alcohol use, smoking, marijuana, medications		
Physical	*Tests*	*Treatment*
Testicular volume, hernia, prostate, penile discharge	Sperm analysis; (+/-) Testosterone and FSH	Intrauterine insemination, IVF, donor

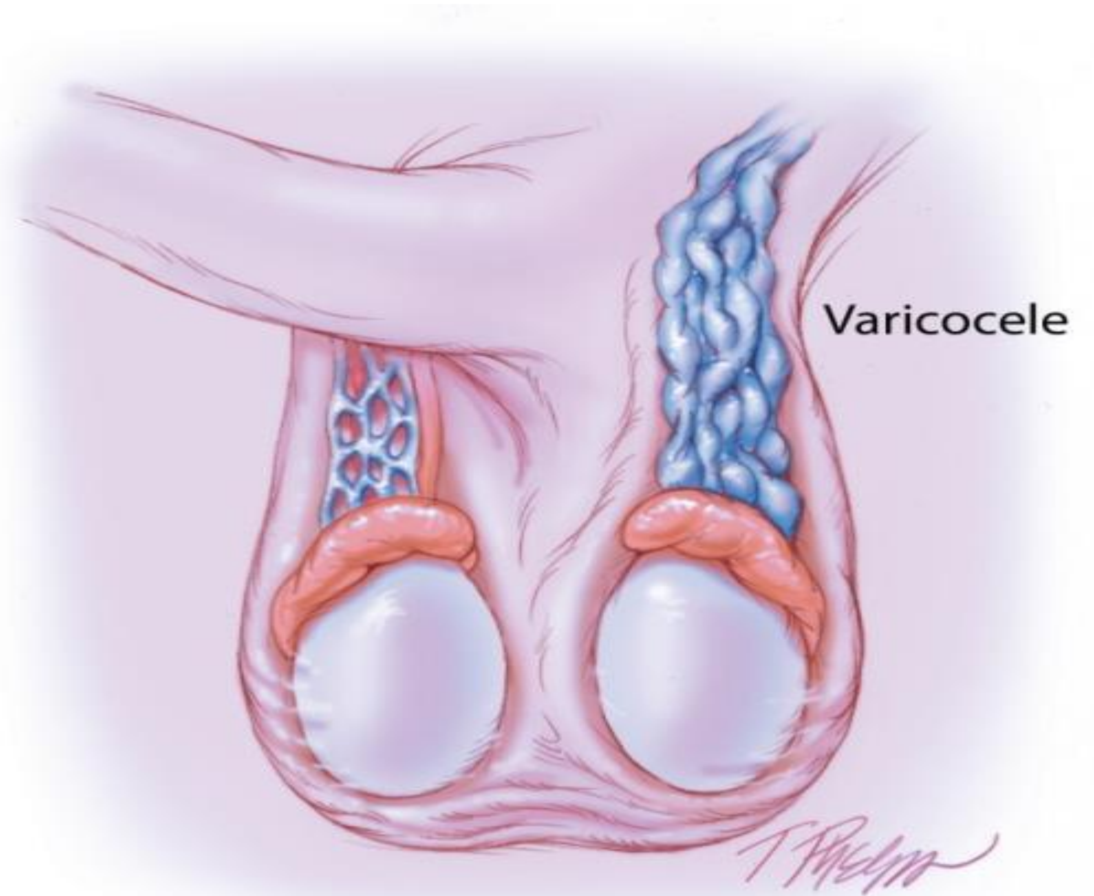
Male Evaluation

- Smoking causes damage to sperm; decreases sperm count; is associated with impotence.
- Marijuana – decreases seminal fluid, lowers total sperm; contributes to abnormal sperm “behavior.”
- If oligospermia or azoospermia is noted, **hypogonadism** should be suspected. Obtaining morning levels of total testosterone can help differentiate between primary and secondary disorders.
    - **A decreased testosterone level with an increased FSH level points to primary hypogonadism**.
    - **A low testosterone level with a low FSH level signals a secondary cause.** Some causes, such as hyperprolactinemia, are reversible with proper treatment.

Varicocele

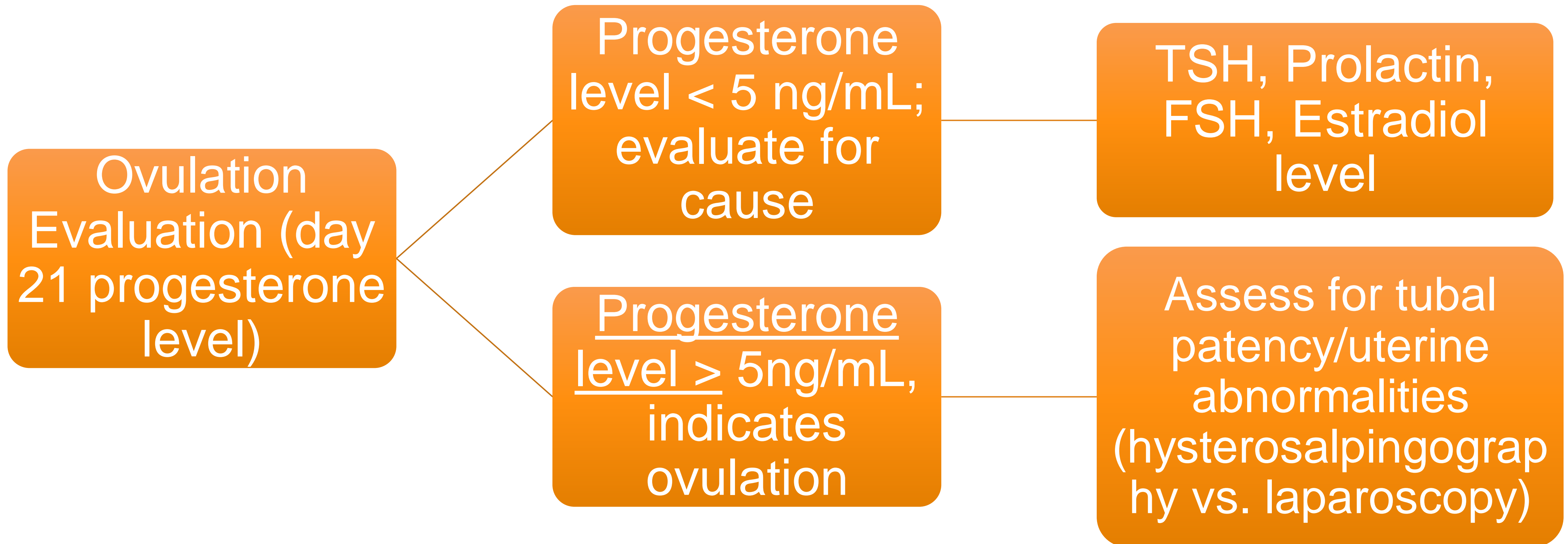
Surgery or Embolization

- Meshwork of distended blood vessels in the scrotum
- Result of dilatation of spermatic vein
- No evidence that treat-ment improves couples' chance of conception when compared to expectant management

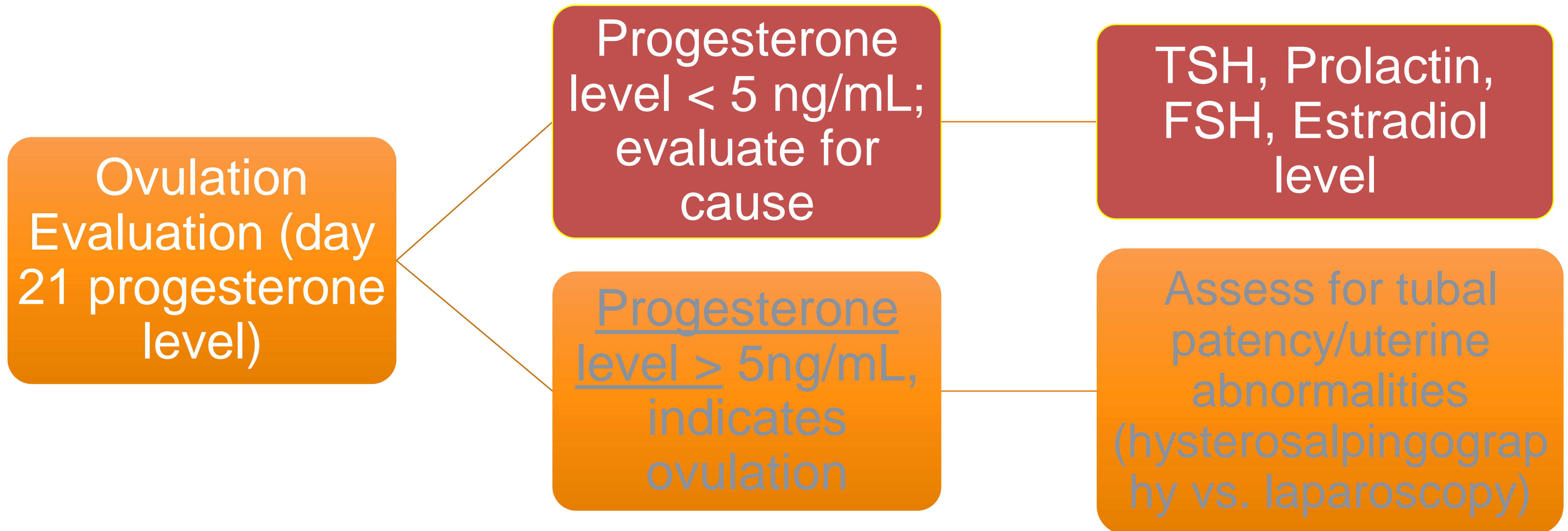


Source: OpenI/NIH

Female Evaluation



Female Evaluation



If Not Ovulating …

- TSH, Prolactin
- Check FSH – to ensure that patient is not menopausal.
  - Premature ovarian failure – consider donor oocytes
- Look for
  - Systemic disease
  - Anorexia nervosa, low body fat
  - PCOS/chronic hyperandrogenic anovulation
  - Hypothalamic dysfunction
  - Stress

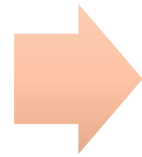
WHO Ovulatory Disorders

Group	Disorders	Percent	Comments
I	Hypothalamic pituitary failure	10	Present with amenorrhea and low gonadotropin levels, most commonly from low body weight or excessive exercise
II	Dysfunction of hypothalamic-pituitary-ovarian axis	85	Include those with PCOS, hyperprolactinemia
III	Ovarian failure	5	Conceive ONLY with oocyte donation and in vitro fertilization

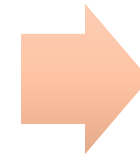
National Collaborating Centre for Women's and Children's Health. Fertility: assessment and treatment for people with fertility problems. London, UK: National Institute for Health and Clinical Excellence (NICE); February 2013:1-63. (Clinical guideline no. 156).

Abnormal TSH, Prolactin etc.

Treat underlying causes



Consider ovulation induction for WHO Group II Disorders* with Clomiphene§

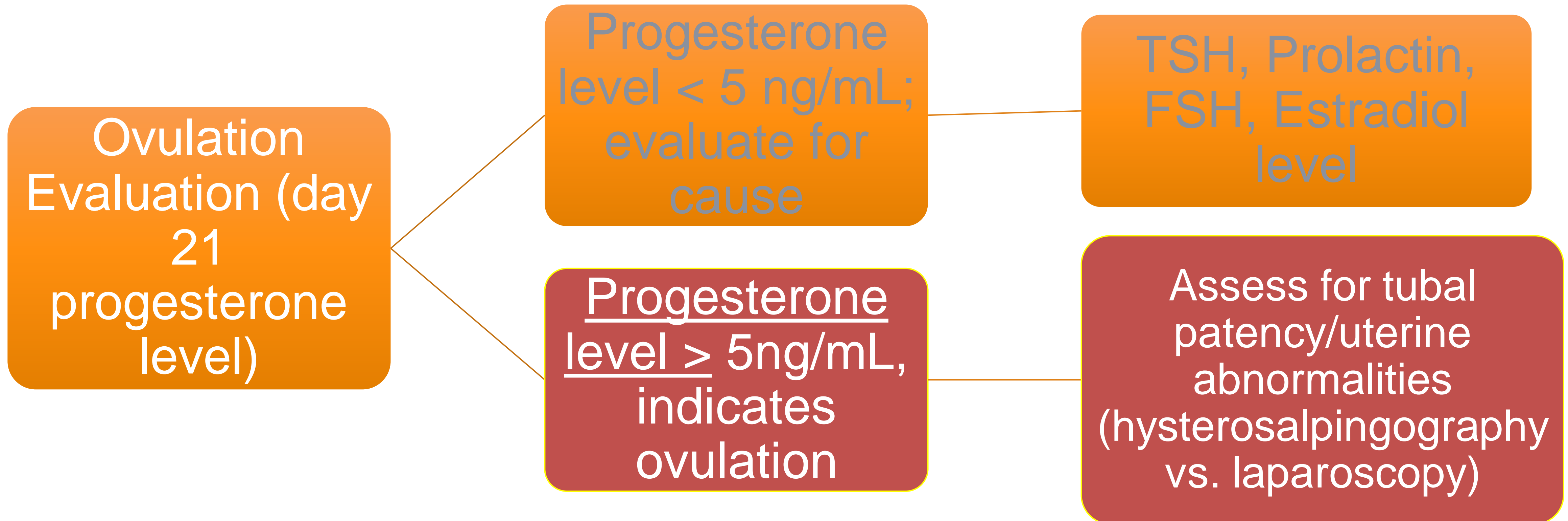


Assess need for Assisted Reproductive Technology

*WHO Group II – Overweight and have PCOS; can benefit from weight loss, exercise, and lifestyle modifications to restore ovulatory cycles and achieve pregnancy.

§Clomiphene has proven effective for ovulation induction in women with PCOS. The addition of 1500-1700 mg of metformin daily MAY increase ovulation and pregnancy rates, but it DOES NOT significantly improve live birth rates over clomiphene alone.

Female Evaluation



Other Female Factors

Factor	Recommendation
Tubal	Tubal disease diagnosed by HSG, confirm with laparoscopy; treatment – typically IVF
Cervical	Previous cryotherapy, LEEP, conization; in-utero DES exposure
Endometrial	HSG: fibroids, polyps, anomalies; may need sonohysterogram/hysteroscopy
Peritoneal (endometriosis)	*Accounts for majority of infertility in young women.* Surgical ablation preferred over medical treatment *IF* pregnancy desired

Lifestyle Factors

- To improve chances of natural conception or using assisted reproductive technology
  - Abstain from tobacco use
  - Limit alcohol consumption
  - Aim for BMI < 30
- Because anxiety over infertility may cause increased stress and decreased libido, further compounding the problem, formal counseling is encouraged for couples experiencing infertility

National Collaborating Centre for Women's and Children's Health. Fertility: assessment and treatment for people with fertility problems. London, UK: National Institute for Health and Clinical Excellence (NICE); February 2013:1-63. (Clinical guideline no. 156).

SORT: Recommendations for Practice

Clinical Recommendation	Evidence Rating
Confirmation of ovulation should be obtained with a serum progesterone level on day 21- of a 28-day cycle or one week before presumed onset of menses	C
Hysterosalpingography should be offered to screen for uterine and tubal abnormalities in women with infertility who have NO history of pelvic infections, endometriosis, or ectopic pregnancy	C
Women with UNEXPLAINED infertility should NOT be offered ovulation induction or intrauterine insemination because these have NOT been shown to increase pregnancy rates	C
Women with a BMI > 30 should be counseled to lose weight because this may restore ovulation.	B

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Recommendations From the Choosing Wisely Campaign

Recommendation	Sponsoring Organization
Do not perform immunological testing as part of the routine infertility evaluation	American Society for Reproductive Medicine
Do not routinely order thrombophilia testing on patients undergoing a routine infertility evaluation	American Society for Reproductive Medicine

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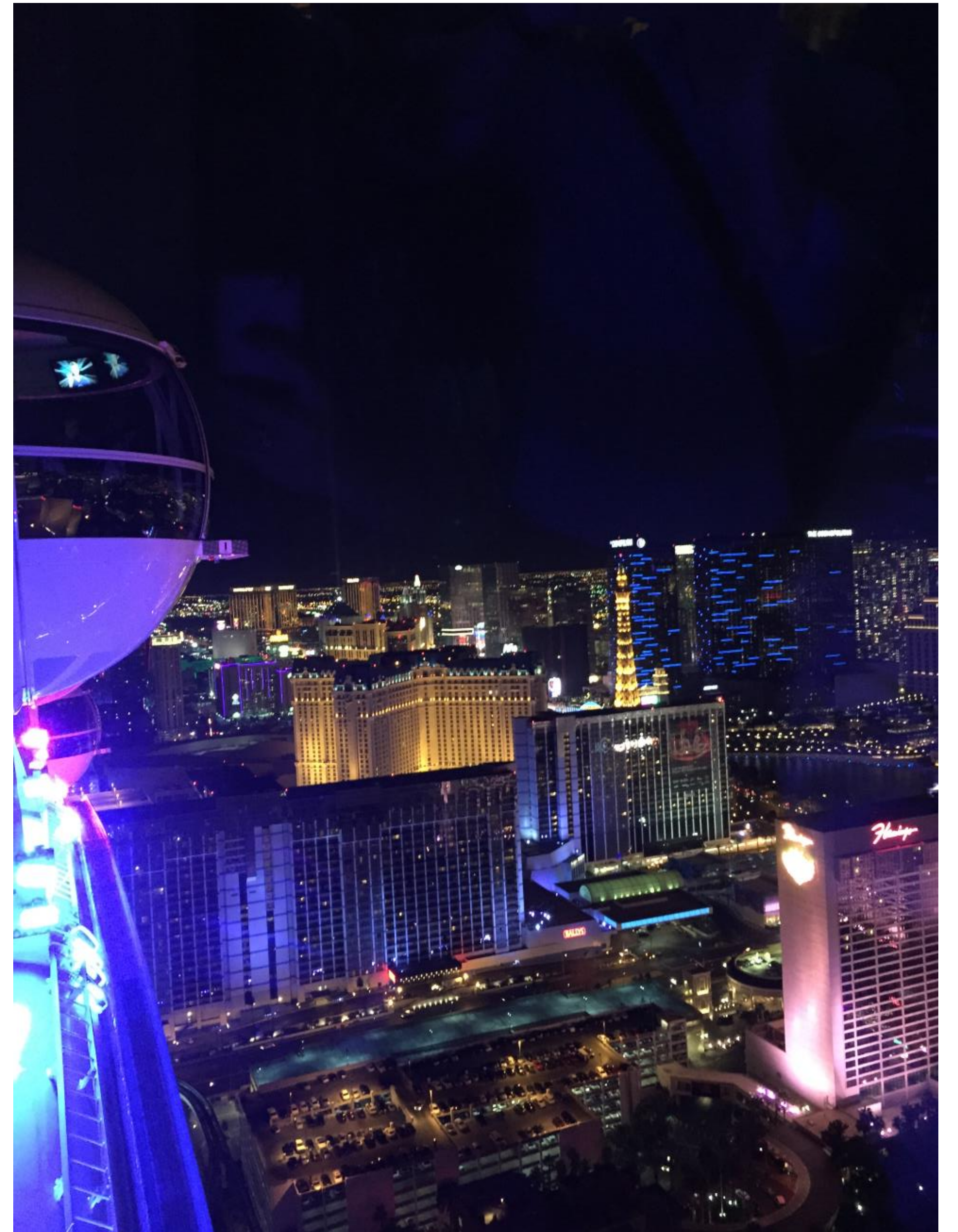
Key Recommendations - Summary

Clinical Recommendation	
First imaging study for a woman with a new, palpable breast mass, and **should be performed even if recent mammogram was negative.**	
An **underlying breast cancer is present in 85% of cases of Paget's Disease** – although often **without** an associated breast mass or mammographic abnormality.	
The available evidence supports prescribing hormonal contraception based only on: **Blood pressure measurement, Review of medical history.** Do not require a pelvic exam or other physical exam.	
Evidence is insufficient to recommend the removal of IUDs in women diagnosed with acute PID.	
Intrauterine devices and contraceptive implants are safe and effective for postmenarchal adolescents.	
The levonorgestrel-releasing intrauterine system (LNG-IUS) can be used as a first-line option to treat menorrhagia.	
Insertion of a copper IUD is the most effective method of EC.	
Women with a BMI > 30 should be counseled to lose weight because this may restore ovulation. (Infertility).	
Do not routinely order thrombophilia testing on patients undergoing a routine infertility evaluation.	

THANK YOU



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