Vaginal Discharge, Now What?

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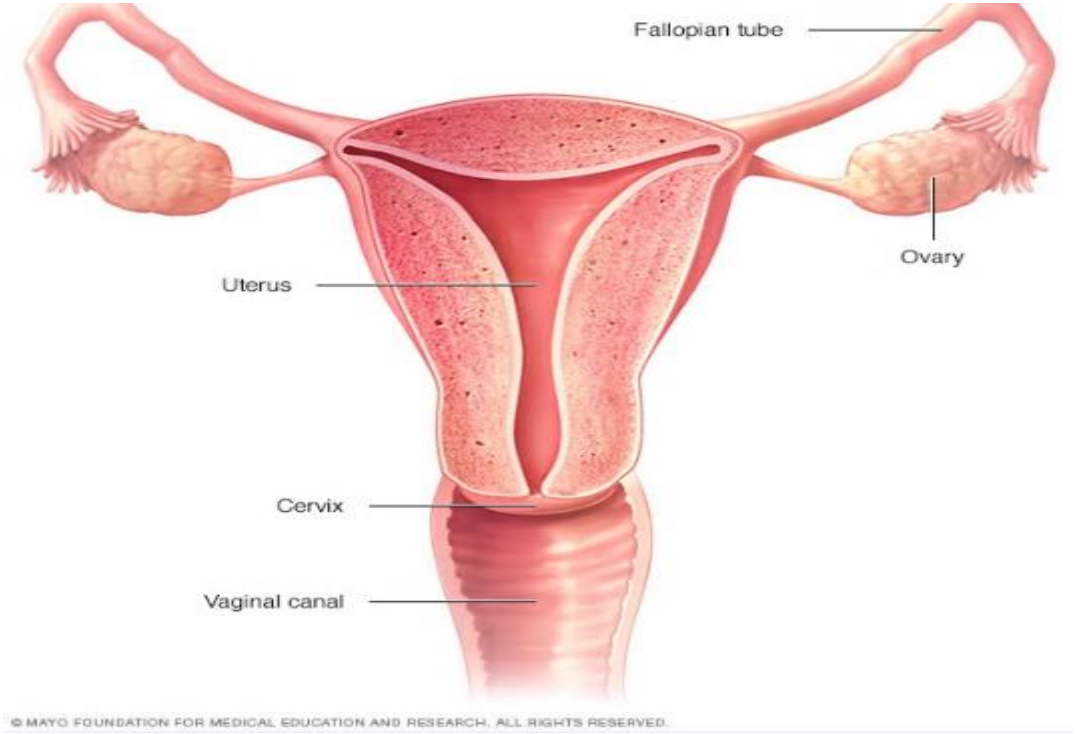
- No Disclosures

Objectives

At the end of this presentation, members will be able to:

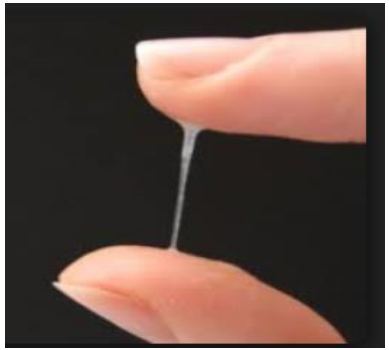
- Summarize patient care recommendations for vaginal health.
- Describe normal vaginal symptoms and anatomy.
- Compare and contrast the various pathologic conditions of the vagina.
- Explain the risks factors, etiology and presenting symptoms of vaginal conditions.
- Summarize physical exam findings, diagnostic evaluation and treatment for vaginal conditions.
- Apply evidence-based medicine to case-based learning scenarios.

Anatomy of the Vagina



Vaginal Symptoms

- *Lactobacillus* predominant
- Normal vaginal pH is 3.5-4.5
- Normal discharge:
  - Physiologic
    - Average woman has 2-3 Tbsp/day
    - Transparent to white, thick, odorless
  - Hormonal
    - Spinnbarkeit near ovulation
      - Increased volume, thicker
      - Stringy, stretchy, whitened
    - Contraception
    - Menopause



Vaginal Symptoms

- Abnormal discharge:
  - Change in color, odor or amount
  - Vulvar/vaginal redness, itching or breakdown
  - Bleeding between periods, after intercourse or menopause
  - Mass or bulge
  - Pain with intercourse

Vaginal Examination

- For most:
  - Good education and counselling
- For others (age, religion, history of trauma):
  - Good education and counselling +
    - Visual aids
    - Gender of the provider
    - Speculum size
    - Proper draping/gown
    - Positioning of patient
- Verbal cues
- Chaperone
- Screen for trauma
- Water-based lubricant
- Medications (estrogen/lidocaine)
- Pelvic floor physical therapy
- Cognitive behavioral therapy
- Aromatherapy
- Music therapy

Vaginal Care

- Wash with warm water ONLY
  - NO SOAP
- Use mineral oil or Vaseline if itching
- Use non irritating lubricants
- Avoid shaving and douching
- Wear wide, white, cotton underwear
  - Wash in very hot water
  - Use ½ laundry soap, double rinse, do NOT hand wash
  - Avoid thong underwear
  - Sleep without underwear, wear loose clothing
- Avoid sex for 1+ week if symptoms of pain/infection

Vaginal Care

- Avoid irritants/allergens:
  - Soaps
  - Pads/tampons
  - Shaving
  - Oral sex
  - Spermicides
  - Lubricants
  - Underwear
  - Sprays
  - Dyes/fragrances
  - Soap in underwear
  - Softeners/bleaches
  - Bubble baths
  - Shampoo
  - Hot tubs/chlorine
  - OTCs, scripts
  - Over cleansing

Vaginal Care

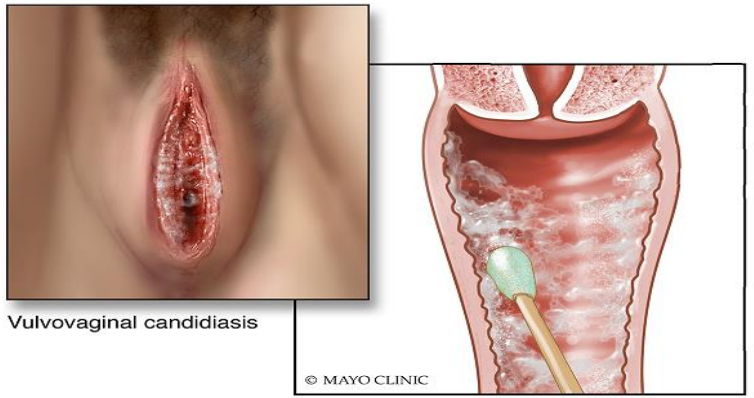
- Be sexually responsible
- Get vaccinated
  - HPV and Hep B
- Do Kegel exercises
- Know you medications
- Limit alcohol and avoid tobacco
  - Decreases sexual function/arousal

Vaginal Conditions

- Candidiasis vaginitis
- Genitourinary syndrome of menopause
- Bacterial Vaginitis
- Desquamative inflammatory vaginitis
- Sexually transmitted infections
  - Trichomoniasis Vaginitis
  - Gonorrhea/Chlamydia
- Contact dermatitis

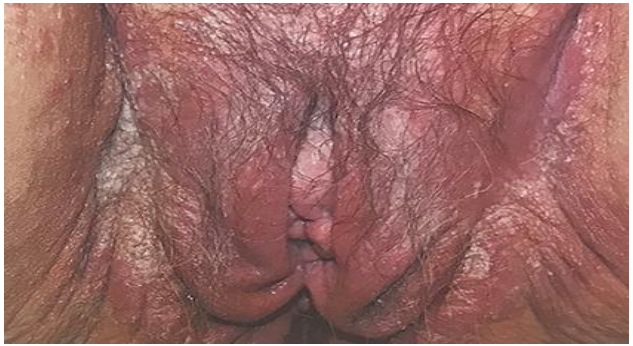
Candidiasis vaginitis

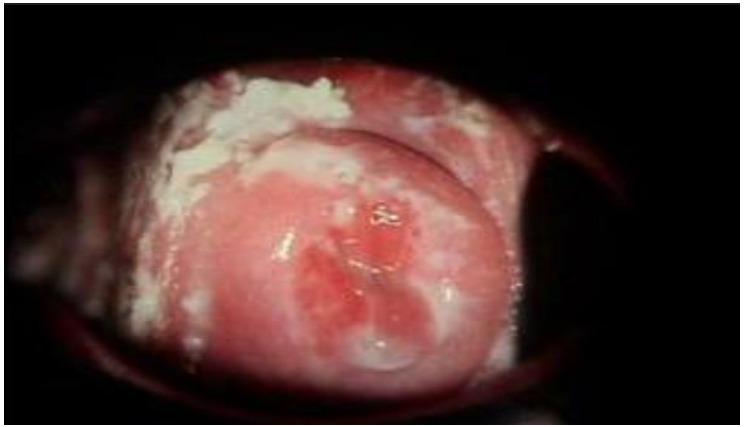
- Caused by a fungus (most common *Candida albicans*)
  - Can affect vulva and vagina
- Risk factors:
  - Change in vaginal pH
  - OCPs
  - Pregnancy
  - DM
  - Antibiotics
- Common during the reproductive years
  - 50% will have 2+ infections



Candidiasis vaginitis

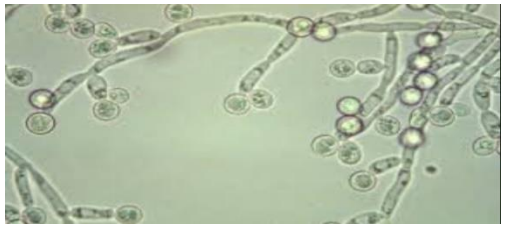
- Symptoms:
  - Thin to thick white discharge
  - Itching
  - Irritation
  - Soreness
  - Burning
  - External dysuria
  - Dyspareunia
- Physical exam:
  - Vulvar redness
  - Swelling of labia
  - Excoriations of vulva
  - Fissures
  - White discharge

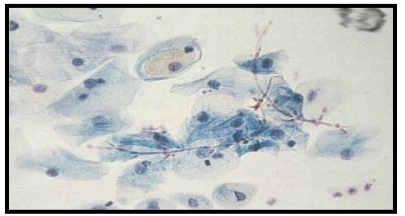




Candidiasis vaginitis

- Diagnosis:
  - Vaginal pH <4.5
  - Positive spores and hyphae on KOH prep (shish-kabob look; spores singly or in clusters)
  - Positive candida culture
    - *Candida albicans, glabrata or parapsilosis*





Candidiasis vaginitis

- OTC treatment:
  - Butoconazole 2% cream 5 g intravaginally for 3 days
  - Clotrimazole 1% cream 5 g intravaginally for 7–14 day OR 2% for 3 days
  - Miconazole 2% cream 5 g intravaginally for 7 days OR 4% for 3 days
  - Miconazole 100 mg vaginal suppository, one suppository for 7 days OR 200 mg for 3 days OR 1,200 mg for 1 day
  - Tioconazole 6.5% ointment 5 g intravaginally in a single application

Candidiasis vaginitis

- Prescription treatment:
  - Butoconazole 2% cream (single dose bioadhesive product) 5 g intravaginally for 1 day
  - Nystatin 100,000-unit vaginal tab, one tab for 14 days
  - Terconazole 0.4% cream 5 g intravaginally for 7 days Or 0.8% for 3 days
  - Terconazole 80 mg vaginal suppository, one suppository for 3 days
  - Fluconazole 150 mg po tablet, one tab in single dose

Candidiasis vaginitis

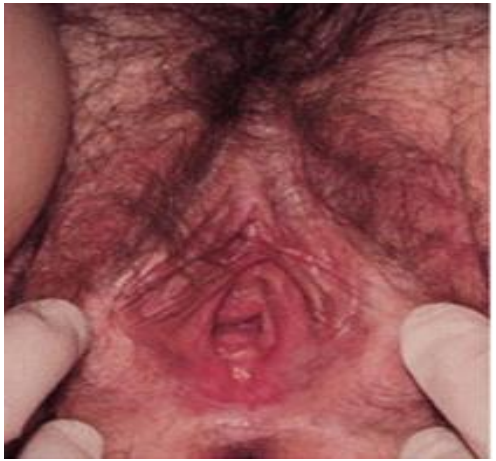
- Treatment considerations:
  - Pregnancy
    - 7 day topical agent
  - Compromised host
    - 7-14 day topical therapy
  - Partner treatment not recommended

Genitourinary syndrome of menopause (atrophic vaginitis/vaginal atrophy)

- Caused by a low estrogen state
  - Vaginal pH rises
- Risk factors:
  - Menopause (affects 50+%; only 25% seek treatment)
  - Primary ovarian insufficiency
  - Chemotherapy
  - Pelvic irradiation
  - Hypothalamic amenorrhea
  - Hyperprolactinemia
  - Lactation
  - Medications (OCP, aromatase inhibitors, tamoxifen, gonadotropin-releasing hormone agonists or antagonists)

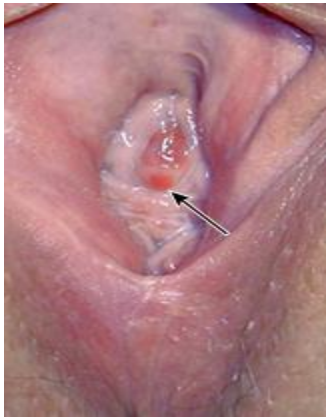
Genitourinary syndrome of menopause

- Symptoms:
  - Dryness
  - Soreness/irritation
  - Itching
  - Thin, watery, yellow or gray discharge
  - Dyspareunia
  - Vulvodynia
  - Vaginal spotting
  - Urinary urgency and frequency
  - Incontinence
  - Recurrent UTI
  - Dysuria



Genitourinary syndrome of menopause

- Physical exam:
  - Labial thinning
  - Phimosis of the clitoral prepuce
  - Pale, dry vulva/vagina
  - Shortened or narrow vagina
  - Diminished vaginal rugae
  - Serosanguineous or watery discharge
  - Vulvovaginal erythema +/- bleeding (small punctate hemorrhages)
  - Atrophy of the cervix
  - Urethral caruncle (soft, smooth, bright red eversion of urethra)



Genitourinary syndrome of menopause

- Diagnosis:
  - Clinical
    - Vaginal pH 4.5 or greater
    - Wet prep (rule out infection)
    - Urinalysis (rule out infection)
    - Vulvar biopsy

Genitourinary syndrome of menopause

- Treatment:
  - Moisturizers
    - Water-based products available as liquids or gels
    - Used qd or every few days for maintenance
    - Oil-based lubricants may degrade condoms
  - Lubricants
    - Water-based or silicone-based products
      - Silicone based lubricants last longer but can impair erections
      - Silicone-based lubricants should not be used with silicone-coated sex aids
      - Used for comfort with sexual activity
  - Topical lidocaine ointment/gel to relieve insertional pain
    - Applied to the introitus 5-10 mins before sexual activity

Genitourinary syndrome of menopause

- Treatment continued:
  - For moisturizers/lubricants:
    - Apply to the intoitus and/or partner at time of sexual activity
    - Repeat during sexual activity as needed
    - If irritation/burning/stinging switch products
    - Avoid products with warming properties (contain capsaicin), flavors and known irritants such as glycerin, parabens and propylene glycol
    - Can be used with hormones

Genitourinary syndrome of menopause

- Treatment continued:
  - Hormones (creams, tablets, rings, patches, orals):
    - Discuss risks/benefits, age, length of treatment, type of hormone
    - Risks:
      - Combined therapy 5+ yrs is associated with increased risk of breast cancer
      - DVT risk
      - Ischemic stroke (not hemorrhagic)
      - Decreased sex drive (possible lower free testosterone)
      - Cognition (data mixed)
    - Benefits: (oral/transdermal)
      - Treatment of hot flashes
      - Reduces mood instability/concentration difficulties, improves quality of life
      - Slows development of atherosclerosis
      - Reduces bone loss/fracture risk
      - Associated with reduced risk of DM2

Genitourinary syndrome of menopause

- Types of estrogen (oral/transdermal):
  - Conjugated equine estrogen
  - Synthetic conjugated estrogen A and B
  - Ethinyl estradiol preparation: norethindrone acetate/ethinyl estradiol
  - 17 beta estradiol: estradiol
  - Bioidentical estrogens

Genitourinary syndrome of menopause

- Types of estrogen (topical):
  - Estradiol 0.01% vaginal cream 2-4 g/day for 1-2 weeks, then 1 g 1-3 times/week
  - Conjugated estrogen (0.625mg/g) cream 0.5g 2 times/week
  - Estradiol (0.010 mg) tab/d x 2 wk, then 2 times/week
  - Estradiol ring (2mg) every 3 months

Genitourinary syndrome of menopause

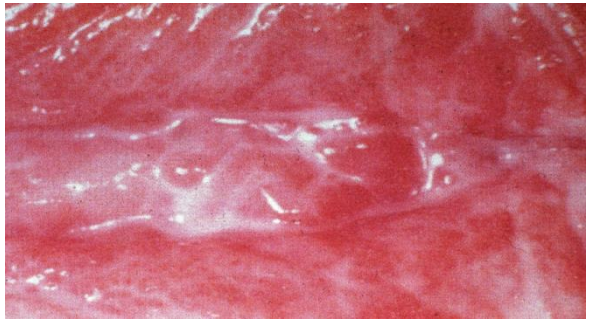
- Types of progesterone (oral):
  - Micronized progesterone
  - Synthetic progestin
    - Medroxyprogesterone acetate [MPA]
    - Norethindrone
- Avoid transdermal - unpredictable absorption
- Levonorgestrel IUC (off-label)

Genitourinary syndrome of menopause

- How long?:
  - Shortest interval
  - Lowest dose for symptom management
  - Normal menopause
    - Limit to 3-5 years
  - Surgical menopause
    - Until age of menopause

Bacterial Vaginitis (BV)
(Gardnerella or Hemophilis vaginalis)

- Caused by a change of vaginal flora; reduction of lactobacilli and increase of coccobacilli and other organisms
  - Rise of pH > 4.5
- Most common cause of abnormal discharge
- Incidence (age 14-49):
  - 29% of women
  - 50% African American



Bacterial Vaginitis

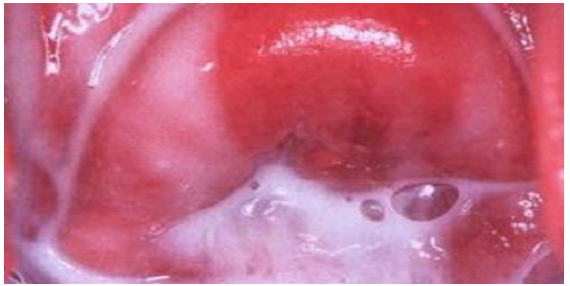
- Common organisms:
  - Gardnerella vaginalis
  - Prevotella species
  - Porphyromonas species
  - Bacteroides species
  - Peptostreptococcus species
  - Mycoplasma hominis
  - Ureaplasma urealyticum
  - Mobiluncus species

Bacterial Vaginitis

- Risk factors:
  - Multiple or new sex partners
  - Douching
  - Cigarette smoking
  - Poverty

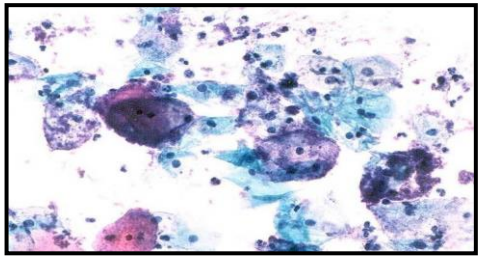
Bacterial Vaginitis

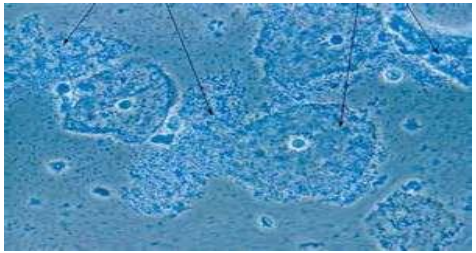
- Symptoms and physical exam:
  - Fishy odor, especially after intercourse
  - Thin, off-white discharge
  - Rare: dysuria, dyspareunia, pruritus, erythema, vaginal inflammation



Bacterial Vaginitis

- Diagnosis:
  - Gram Stain (Nugent score)—gold standard
  - Amsel Criteria: must have 3 out of 4
    - Thin, off-white discharge
    - pH greater than 4.5
    - Positive whiff test (10% KOH added to discharge)
    - Clue cells (coccobacilli on the surface of epithelial cells) on saline wet mount
- Tests NOT to be used: vaginal culture, Pap smear





Bacterial Vaginitis

- Infection consequences:
  - Higher risks of:
    - STIs (HSV-2, HPV, HIV, gonorrhea, chlamydia, trichomonas)
    - PID and infertility
    - Cervicitis and endometritis
    - Cystitis
    - Post-gyn surgery and postpartum infections
    - Preterm delivery
    - CIN

Bacterial Vaginitis

- Treatment:
  - Metronidazole (oral or vaginal)
    - 500 mg po bid x 7 days OR 0.75% gel 5 gm qd x 5 days
  - Clindamycin cream 2%
    - 1 applicator (5g) vaginally hs x 7 days (oil based = avoid condoms up to 5 days after use)
  - Avoid alcohol on metronidzole
- Treatment in pregnancy:
  - Metronidazole 500 mg po bid x 7 days OR 250 mg po tid x 7 days
  - Clindamycin 300 mg po bid x 7 days

Desquamative Inflammatory Vaginitis (DIV)

- Cause unknown (possible bacterial overgrowth, vaginal atrophy, lichen planus variant)
  - Occurs in 8% with persistent vaginitis
- Risk factors:
  - Hypoestrogenic state (postpartum, breastfeeding, peri/postmenopause, OCPs)

Desquamative Inflammatory Vaginitis

- Symptoms and physical exam:
  - Copious discharge (yellow or brown)
  - Burning of vagina
  - Severe dyspareunia/postcoital bleeding
  - Severe introital/vaginal erythema
- Diagnosis:
  - White blood cells on saline microscopy
  - Vaginal cultures
  - Increased vaginal pH > 4.5

Desquamative Inflammatory Vaginitis

- Treatment:
  - Clindamycin cream 2% vaginal cream 5 gm/d x 4 weeks OR
  - Hydrocortisone 10% vaginal cream, 3 gm/d x 4 weeks
    - Other hydrocortisone creams, rectal and vaginal suppositories can be used as alternatives
  - Estrogen to prevent reoccurrence

Sexually Transmitted Infections

- STIs
  - Chlamydia
  - Gonorrhea
  - Trichomoniasis Vaginitis

Chlamydia

- Caused by the *Chlamydia trachomatis* bacteria
- Most common STI of bacterial origin
- Infection increases risk of:
  - PID and infertility
  - Perinatal premature rupture of membranes, early delivery/low birth weight and stillbirth
  - Conjunctivitis and pneumonia in newborns
  - Trachoma (leading cause of blindness)
  - Lymphogranuloma venereum (rectal stenosis/genital lymphedema)
- Risk factors:
  - Sexual activity

Chlamydia

- Symptoms and physical examination:
  - Asymptomatic
  - Vaginal discharge
  - Cervicitis/acute salpingitis
- Diagnosis:
  - Urine or endocervical swab for nucleic acid amplification testing
  - Rectal or pharyngeal swabs cultures as needed

Chlamydia

- Treatment:
  - Azithromycin 1 g PO once or
  - Doxycycline 100 mg PO bid for 7 days
  - Alternative regimens:
    - Erythromycin 800 mg PO qid for 7 days
    - Levofloxacin 500 mg PO once daily for 7 days
  - Abstain from intercourse for 7 days after single-dose therapy or until completion of a 7-day regimen
    - And until partner has been treated
  - Test of cure with PCR 3 months after treatment ONLY if adherence to treatment is in question

Gonorrhea

- Caused by a Gram-negative bacteria *Neisseria gonorrhoeae*
- 2nd most common STI of bacterial origin
- Increased risk of PID, ectopic pregnancy, infertility and gonococcemia
- Risk factors:
  - Sexual activity

Gonorrhea

- Symptoms and physical examination:
  - Asymptomatic
  - Vaginal discharge
  - Cervicitis/urethritis
  - Conjunctivitis
  - Endometritis, adnexitis, PID
- Diagnosis:
  - Urine or endocervical swab for nucleic acid amplification testing
  - Rectal or pharyngeal swabs cultures as needed

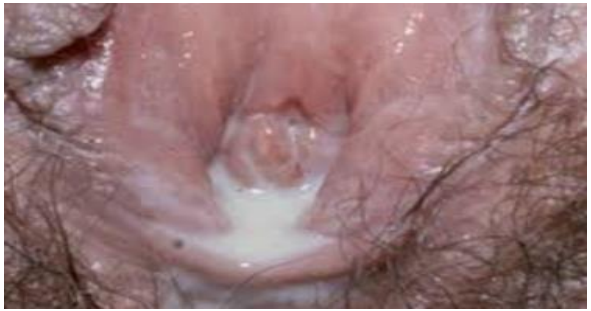
Gonorrhea

- Treatment:
  - Ceftriaxone 250 mg IM once AND azithromycin 1 g PO once
    - Or
  - Cefixime 400 mg PO once AND azithromycin 1 g PO once
  - Note fluoroquinolone-resistance: Ciprofloxacin/levofloxacin are no longer considered effective 1st-line therapies
  - Consult infectious disease for more serious infections

  - Test of cure with PCR recommended 1 week after treatment if ceftriaxone was NOT used

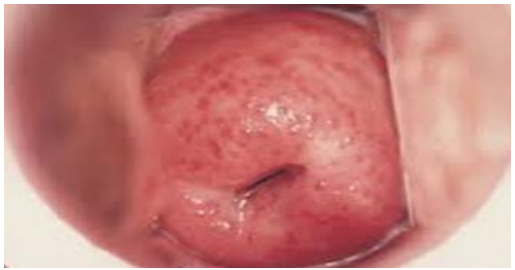
Trichomoniasis Vaginitis

- Caused by a protozoan infection (Trichomoniasis vaginalis)
  - Vaginal pH >5.0
- Can cause preterm delivery
- Risk factors:
  - Sexual activity



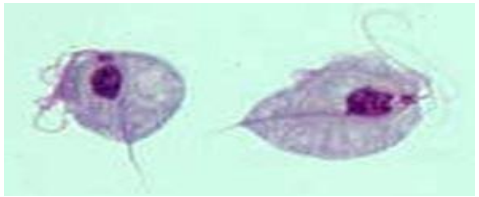
Trichomoniasis Vaginitis

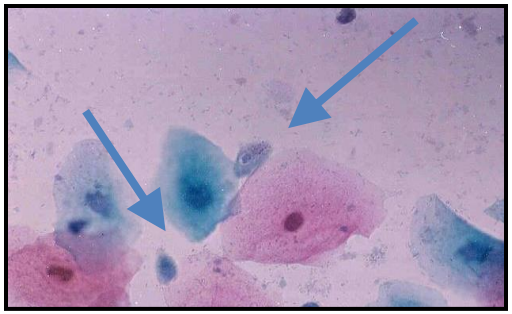
- Symptoms and physical exam:
  - 70-85% asymptomatic
  - Discharge (odorous, frothy, clear-yellow-green)
  - Dyspareunia or lower abdominal pain
    - Bleeding after intercourse
  - Soreness (vulva/vagina)
  - Itching
  - Burning
  - External dysuria and frequency
  - Vaginal erythema
  - Vulvar dermatitis
  - Cervicovaginitis (strawberry cervix)



Trichomoniasis Vaginitis

- Diagnosis:
  - Saline microscopy
    - Pear-shaped with red granules and slit-like nucleus
    - Lack of chromatin structure of stripped nuclei
  - Vaginal pH >5.0
  - Rapid antigen and nucleic acid amplification test (NAAT)





Trichomoniasis Vaginitis

- Treatment:
  - Metronidazole 2 g po in a single dose
  - Tinidazole 2 g po in a single dose
- Avoid alcohol
- Abstinence of alcohol should continue for 24 hrs after metronidazole or 72 hrs after tinidazole

Contact Dermatitis

- Caused by direct physical or chemical injury to the epidermis
- Can be irritant or allergic
- Risk factors:
  - Irritants/allergens
  - History of atopic dermatitis

Contact Dermatitis

- Symptoms and physical examination:
  - Burning/stinging sensation
  - Pruritus
  - Erythema
  - Edema
  - Scaling/abrasions
  - Discharge
- Diagnosis:
  - Clinical/diagnosis of exclusion

Contact Dermatitis

- Treatment:
  - Remove irritant/allergen
  - Petroleum jelly applied frequently
  - Topical steroid
    - Clobetasol every 12 hours for a short duration

Other Vaginal Conditions

- Foreign body/retained tampon
- Cervicitis/endometritis
- PID

Case 1

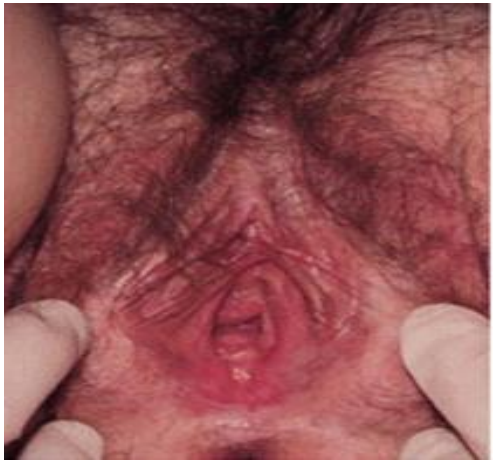
- A 36 y/o G1P1 sexually active female postpartum week 8, breastfeeding on OCPs presents with 2 weeks of “vaginal discharge.” She describes intermittent itching/irritation and dyspareunia.
- PMH: Celiac disease
- Medications: prenatal vitamin, norgestimate/ethinyl estradiol
- Vital signs: WNL

Case 1

- What is your diagnosis?
  A. Genitourinary syndrome of menopause
  B. Bacterial vaginitis
  C. Candidiasis vaginitis
  D. Trichomoniasis vaginitis
  E. Desquamative inflammatory vaginitis
  F. Gonorrhea
  G. Chlamydia
  H. Contact Dermatitis

Case 1

- Patient clues:
  - Postpartum week 8 and breastfeeding
  - On OCP
  - PE with a pale, dry vulva, thinning of the vulvar skin and diminished vaginal rugae
- Vaginal pH is 5.5; wet prep is normal
- Diagnostic biopsy shows...



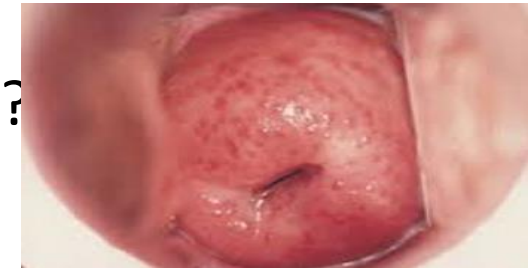
Genitourinary syndrome of menopause

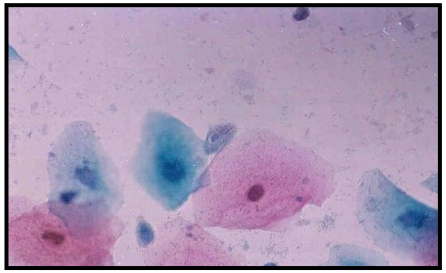
Case 2

- A 19 y/o G0P0 sexually active female presents with 1 week of “vaginal discharge.” She describes intermittent itching/irritation and dyspareunia. She describes discharge as odorous and yellow-green.
- PMH: ADD
- Medications: levonorgestrel IUC
- Vital signs: WNL

Case 2

- On exam you see, what is your diagnosis?
  A. Genitourinary syndrome of menopause
  B. Bacterial vaginitis
  C. Candidiasis vaginitis
  D. Trichomoniasis Vaginitis
  E. Desquamative inflammatory vaginitis
  F. Gonorrhea
  G. Chlamydia
  H. Contact Dermatitis





Trichomoniasis Vaginitis

Case 3

- A 45 y/o G3P2 sexually active female presents to your office for 2 weeks of vaginal discharge and pruritus. She is in a monogamous relationship with her husband. She denies any new hygiene products.
- PMH: Diabetes mellitus type 2 (uncontrolled), recurrent urinary tract infections
- Medications: Metformin, Dulaglutide, levonorgestrel IUC, albuterol
- Vital signs: WNL

Case 3

- On exam you see a thick white discharge but otherwise exam is unremarkable
- What diagnosis do you suspect?
  A. Genitourinary syndrome of menopause
  B. Bacterial vaginitis
  C. Candidiasis vaginitis
  D. Trichomoniasis Vaginitis
  E. Desquamative inflammatory vaginitis
  F. Gonorrhea
  G. Chlamydia
  H. Contact Dermatitis

Candidiasis vaginitis

Case 4

- A 27 y/o G0P0 sexually active female presents with 1 week of vaginal discharge and vulvar/vaginal pruritus. History if unremarkable except that she recently started using a menstrual cup and admits to cleaning this with a homemade organic soap that contains coconut oil, shea butter and lavender.
- PMH: Atopic Dermatitis, asthma
- Medications: Triamcinolone cream, albuterol, fluticasone, over-the-counter antihistamine, subdermal contraceptive implant
- Vital signs: WNL

Case 4

- On exam you see a thin white discharge but otherwise exam is unremarkable
- What diagnosis do you suspect?
  A. Genitourinary syndrome of menopause
  B. Bacterial vaginitis
  C. Candidiasis vaginitis
  D. Trichomoniasis Vaginitis
  E. Desquamative inflammatory vaginitis
  F. Gonorrhea
  G. Chlamydia
  H. Contact Dermatitis

Contact Dermatitis

Summary

- Not all discharge is abnormal
- Obtain a thorough history
  - Ask about vulvovaginal symptoms; ask about irritants/allergens
- Do the physical exam
- 1+ condition may be causing symptoms
- Recurrence is common, treatment and patient education is needed
- Discuss prevention and vulvar/vaginal care recommendations

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