VAGINITIS

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Introductory Case
A 28-year-old G2P2 presents to the office with concerns of vaginal irritation and discharge for the past two days. She reports clear vaginal discharge associated with itching and burning. She has no other significant past medical history.

Milestone Based Focused Questions

LEVEL 1: DEMONSTRATES BASIC KNOWLEDGE ABOUT COMMON AMBULATORY GYNECOLOGIC PROBLEMS

WHAT ARE THE MOST COMMON ETIOLOGIES OF VAGINITIS?

Vaginitis is defined as inflammation of the vagina

The most common causes of vaginitis are:
- Bacterial Vaginosis (BV) – a change in the normal microbiome of the vagina with an overgrowth of facultative anaerobic organisms such as Gardnerella vaginalis, Bacteroides and Peptostreptococcus
- Vaginal Candidiasis – vaginal overgrowth of Candida species
- Trichomoniasis – presence of a pathologic organism, the protozoan Trichomonas vaginalis

Less common causes of vaginitis include:
- Atrophic Vaginitis
- Vulvar Dermatoses
- Desquamative Inflammatory Vaginitis

WHAT ARE SOME RISK FACTORS FOR VAGINITIS?

Risk factors for vaginitis include anything that alters the microbial balance of the vagina.

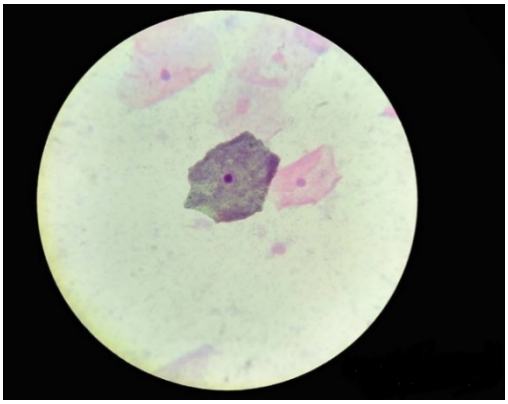
These includes:
- Diabetes/insulin resistance
- Antibiotic use
- Douching
- Changes in hormonal balance in vagina (menstrual changes, menopause)

LEVEL 2: PERFORMS THE INITIAL ASSESSMENT, FORMULATES A DIFFERENTIAL DIAGNOSIS, AND INITIATES TREATMENT FOR COMMON AMBULATORY GYNECOLOGIC PROBLEMS

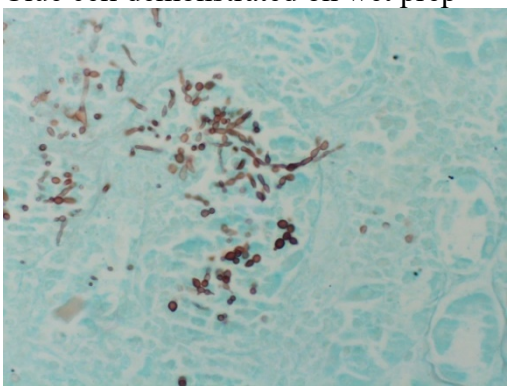
HOW DO YOU EVALUATE A PATIENT WITH VAGINAL IRRITATION AND DISCHARGE?

Evaluation of vaginitis in women should include:
- **Focused history** of vaginal symptoms including nature of vaginal discharge, odor, associated symptoms (itching, burning, irritation, dyspareunia, dysuria)
    - Associated factors: onset and duration of discharge, relationship of symptoms to menses, use of over-the-counter treatment options and other medication use, douching, sexual history

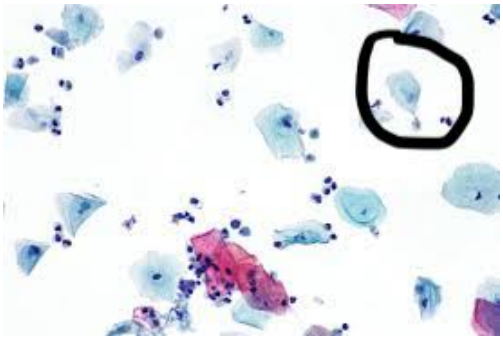
- **Focused examination** including: external genital exam, speculum exam assessing for discharge, location of discharge, lesions, or rashes
- **Wet mount**: pH, amine "whiff" test (see below)
- **Diagnostic Testing**:
    - **BV** – Amsel criteria (see below) can be used and BV diagnosed if 3 of the 4 criteria are present. Diagnostic tests using polymerase chain reaction (PCR) test for *Gardnerella vaginalis* and other organisms associated with BV are currently being evaluated.
    - **Candidiasis** – When microscopy is negative, culture is recommended for symptomatic patients and patient with persistent symptoms despite treatment.
    - **Trichomoniasis** – Nucleic acid amplification testing (NAAT) is the preferred diagnostic test.
    - Consider testing for gonorrhea, chlamydia and other sexually transmitted infections when evaluating symptoms of vaginitis.
    - There are some commercial tests that have been approved by the US Food and Drug Administration for the diagnosis of vaginitis.



Clue cell demonstrated on wet prep



Budding yeast with pseudohyphae on wet prep



Trichomonad demonstrated on wet prep

Assessment of Vaginal Discharge

	Normal	BV	Candida	Trichomonas
Vaginal pH	3.8-4.2	>4.5	<4.5	>4.5
"Whiff" test	Negative	Positive	Negative	Positive
Microscopic findings	Lactobacilli, epithelial cells	Clue cells	Pseudohyphae/hyphae/ spores	Motile flagellated protozoans (trichomonads)

Amsels Criteria (3 of 4 present to diagnose BV)

1. Homogenous, thin, grey-white discharge on the vaginal walls
2. More than 20% clue cells on wet prep with saline
3. pH of vaginal fluid > 4.5
4. Positive KOH whiff test (detection of a fishy odor before or after sample of vaginal discharge is missed with 10% KOH)

Initial Treatment of Vaginitis

Condition	Recommended Treatment Regimens	Alternative Treatment Regimens
Bacterial vaginosis	Metronidazole, 500 mg orally twice daily for 7 days* or Metronidazole gel 0.75%, one full applicator (5 g) intravaginally, once a day for 5 days* or Clindamycin cream 2%, one full applicator (5 g) intravaginally at bedtime for 7 days	Secnidazole, 2 g orally in a single dose or Tinidazole, 2 g orally once daily for 2 days* or Tinidazole 1 g orally once daily for 5 days* or Clindamycin, 300 mg orally twice daily for 7 days or Clindamycin ovules, 100 mg intravaginally once at bedtime for 3 days†
Trichomoniasis	Metronidazole, 500 mg orally twice a day for 7 days*	Tinidazole, 2 g orally in a single dose*
Uncomplicated vulvovaginal candidiasis	**Over-the-counter intravaginal agents:** Clotrimazole 1% cream, 5 g intravaginally daily for 7–14 days or Clotrimazole 2% cream, 5 g intravaginally daily for 3 days or Miconazole 2% cream, 5 g intravaginally daily for 7 days or Miconazole 4% cream, 5 g intravaginally daily for 3 days or Miconazole, 100-mg vaginal suppository, one suppository daily for 7 days or Miconazole, 200-mg vaginal suppository, one suppository for 3 days or Miconazole, 1,200-mg vaginal suppository, one suppository for 1 day or Tioconazole 6.5% ointment, 5 g intravaginally in a single application **Prescription intravaginal agents:** Butoconazole 2% cream (single-dose bioadhesive product), 5 g intravaginally in a single application or Terconazole 0.4% cream, 5 g intravaginally daily for 7 days or Terconazole 0.8% cream, 5 g intravaginally daily for 3 days or Terconazole, 80-mg vaginal suppository, one suppository daily for 3 days **Oral agent:** Fluconazole, 150 mg orally in a single dose	N/A

Abbreviations: OTC, over-the-counter; N/A, not applicable.

*Abstaining from alcohol during treatment with nitroimidazoles and for 24 hours after completion of oral metronidazole treatment or 72 hours after treatment with oral tinidazole is currently recommended by the drug manufacturers because of a theoretical concern about a disulfiram-like reaction that may occur with the use of nitroimidazoles (Pfizer Inc. 2018. Flagyl [metronidazole] tablets. New York, NY: Available at: http://labeling.pfizer.com/showlabeling.aspx?id=570, *and* Mission Pharmacal Company. 2004. Tindamax (tinidazole) tablets. San Antonio, TX. Available at: https://www.accessdata.fda.gov/drugsatfda_docs/label/2007/021618s003lbl.pdf).

†Clindamycin ovules use an oleaginous base that might weaken latex or rubber products (eg, condoms and vaginal contraceptive diaphragms). Use of such products within 72 hours after treatment with clindamycin ovules is not recommended.

Data from Workowski KA, Bolan GA. Sexually transmitted diseases treatment guidelines, 2015. Centers for Disease Control and Prevention [published erratum appears in MMWR Recomm Rep 2015;64:924]. MMWR Recomm Rep 2015;64(RR-03):1–137; Kissinger P, Muzny CA, Mena LA, Lillis RA, Schwebke JR, Beauchamps L, et al. Single-dose versus 7-day-dose metronidazole for the treatment of trichomoniasis in women: an open-label, randomised controlled trial. Lancet Infect Dis. 2018 Nov;18(11):1251–1259; *and* Elghazaly SM, Hamam KM, Badawy MM, Yakoub Agha NA, Samy A, Abbas AM. Efficacy and safety of single dose of oral secnidazole 2 g in treatment of bacterial vaginosis: a systematic review and meta-analysis. Eur J Obstet Gynecol Reprod Biol 2019;238:125–31.

Source: ACOG Practice Bulletin 215 Vaginitis in Nonpregnant Patients

SHOULD PATIENTS BE OFFERED EMIRIC TREATMENT FOR VAGINITIS WITHOUT AN EXAMINATION?

The benefits of empiric treatment (without examination) for vaginitis include: convenience to the patient, ability to quickly start treatment, and the potential reduction in health care costs. However, reliability of self-diagnosis or provider phone diagnosis of vaginitis is poor. As such, **ACOG recommends considering empiric treatment (without examination) only for patients who are compliant and have documented prior episodes of similar symptoms.** However, if symptoms fail to resolve with short course treatment, the patient should be evaluated in the office for further examination.

LEVEL 3: FOR COMPLEX GYN CONDITIONS, FORMULATES MANAGEMENT PLANS

IS PARTNER TREATMENT RECOMMENDED FOR PATIENTS WITH VAGINITIS? WHAT ADDITIONAL TESTING IS RECOMMENDED FOR PATIENTS WITH VAGINITIS?

You diagnose your patient with trichomoniasis based on the results of your wet mount. You prescribe the patient metronidazole. You counsel her about expedited partner treatment and other testing.

Because trichomoniasis is a sexual transmitted infection, patterner treatment is recommended. The options for partner treatment include:

- Partner referral to health care provider
- Expedited partner treatment (EPT) (see chapter on sexually transmitted infections for further information regarding EPT)

What is the requirement for reporting for trichomoniasis?

Despite being a readily diagnosed and treatable sexually transmitted infection (STD), trichomoniasis is not a reportable infection.

Trichomoniasis is a STI, and as a result, the patient should be offered testing for other STIs including gonorrhea, chlamydia, syphilis, HIV, hepatitis B and hepatitis C.

LEVEL 4: CARES FOR PATIENTS WITH COMPLEX PRESENTATIONS INCLUDING REFRACTORY TO INITIAL MANAGEMENT, WITH COMPLICATIONS, OR UNUSUAL PRESENTATIONS

HOW IS RECURRENT VAGINITIS TREATED?

After you treat your patient and her partner with metronidazole, she calls with concerns of severe vaginal itching and thick white discharge. You treat her empirically for candidiasis with one dose of fluconazole. She returns to the office reporting that the fluconazole initially helped, but the symptoms returned 2 weeks after the initial treatment.

For patients with symptoms refractory to treatment:

- Confirm diagnosis is correct and patient has completed treatment appropriately
- Patients with refractory or recurrent trichomonas infection should be aware of risk of reinfection and should be counseled to abstain from intercourse until completion of her and her partner's treatment.

- Specialized testing can be considered: consider evaluating with a vaginal culture for resistant strains of yeast as well as co-infection with organisms (gonorrhea or chlamydia in addition to vaginal candidiasis)
- Avoidance of other risk factors (douching, antibiotic use)

Treatment for Recurrent Vaginal Infections

Recurrent Vulvovaginal Candidiasis
Induction with fluconazole 150 mg every 72 hours for 3 doses, followed by maintenance fluconazole 150mg once per week for six months
Recurrent Bacterial Vaginosis
Attempt treatment with a different antibiotic than what was originally used, or Twice weekly suppressive metronidazole gel for 16 weeks after treatment of the acute episode

Probiotics- Probiotic lactobacilli is ***not*** recommended, as there is a lack of evidence that women with recurrent vulvovaginal candidiasis have vaginal flora deficient in lactobacilli. The quality of research in this area is lacking, and the approach of ingestion of probiotics or vaginal administration should be considered unproven. Furthermore, there is no standardization of the quality of probiotics in the US.

HOW SHOULD BV OR TRICHOMONAS ON CYTOLOGY (PAP SMEAR) BE MANAGED?

Bacterial Vaginosis: The pap test is poor for diagnosis BV (49% sensitivity and 93% specificity). In patients with incidental finding of BV on cytology, **asymptomatic** patients do not require further evaluation or treatment.

Trichomonas: The pap test is not ideal for diagnosis of trichomonas and can lead to inaccurate diagnosis of a STI in these patients. Patients who have a positive finding for trichomonas on pap screening should be further evaluated with wet mount and/or diagnosis via NAAT.

Supplemental guidance:

- Performing a Wet mount
    - After obtaining the specimen from a speculum exam:
    - Place the specimen on the slide and apply 1 drop of saline
    - Place a cover slip over the specimen on the slide
    - Prepare a second slide but instead of saline add KOH
    - Review slides under the microscope

- For Health Department notification of STIs
    - Confirm that the patient is notified and appropriately treated
    - Most states have standard forms to document STI notification.

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