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Lower Genital Tract Infection

Objectives:

- Formulate a differential diagnosis for vulvovaginitis.
- Interpret a wet mount microscopic examination.
- Describe the variety of dermatologic disorders of the vulva.
- Discuss the steps in the evaluation and management of a patient with vulvovaginalsymptoms.

Reference: team 433, hacker and moore 5th Ed and Kaplan lecture note 2018.

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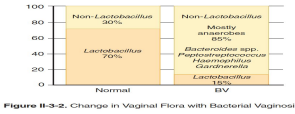
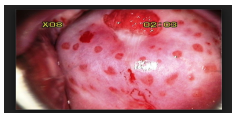
Who has high risk race by reporting the symptoms?

8% Caucasian women Vs 18% African-American women.

Vulva vaginitis: Itching + Burning + irritation + Discharge.

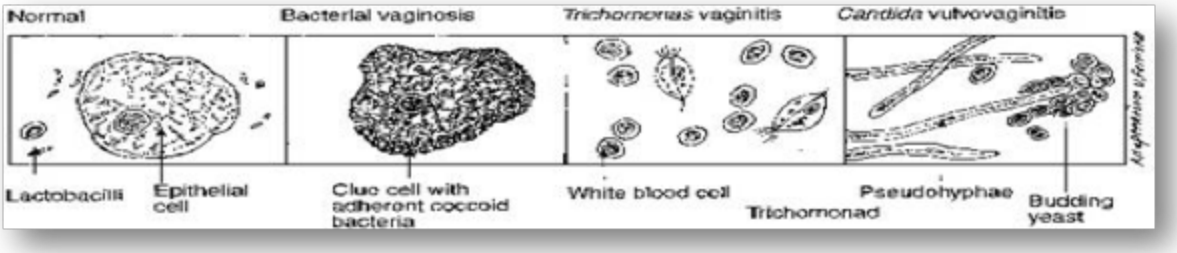
Organism	Bacterial vaginosis "BV"	Vulvovaginal candidiasis	Trichomoniasis
%	22-25% "Most common"	17-35%	4-35%
Definition	Polymicrobial infection; Vaginal imbalance between lactobacilli "Normal aerobic" & anaerobic organisms  Figure II-3-2. Change in Vaginal Flora with Bacterial Vaginosis (BV)	C.albicans "90%" C.glabrata C.tropicals	Trichomonas vaginalis; that can reside asymptomatically in male seminal fluid. Facilitate HIV transmission Test for other STIs "N.gonorrhea, C.trachomatis, HIV, Syphilis"
Risk factors	Postmenopausal "Because of low estrogen" "Not STIs"	-DM, Obesity, Pregnant -Abx, CS, OCT -Anything keeps vagina moist & warm; Tight clothes or habitual use of pantiliner "Not STIs"	Survive in Swimming pool & hot tub STIs Association with PID & Endometritis
Symptoms	Thin white discharge Fishy odor "Especially after intercourse, why? Semen is alkaline" Neither itching nor burning	Thick white discharge Itching Pain with intercourse.	Yellow profuse frothy discharge Malodorous Strawberry cervix 
Wet mount	Clue cells BV with stippled border No culture? NOT specific	Pseudohyphae, candidiasis & yeast	Flagellated motile organism
Diagnosis	Ph; >4.5 Clue cells Whiff test "Add KOH"	Ph; <4.5 +Ve yeast culture	Ph; >4.5 Wet mount "50% sensitive" if suspected do NAAT
Treatment	PO or Vaginal Metronidazole "1st line" Vaginal clindamycin	Azole results in relief of symptoms and negative culture in 80-90% of patients. *Oral antifungal and fluconazole is recommended "Single dose". *Vaginal imidazole (miconazole,clotrimazole,terconazole)	Mtronidazole "1line" Tinidazole TREAT PARTNER "STI" Never vaginal, why? 50% failure rate

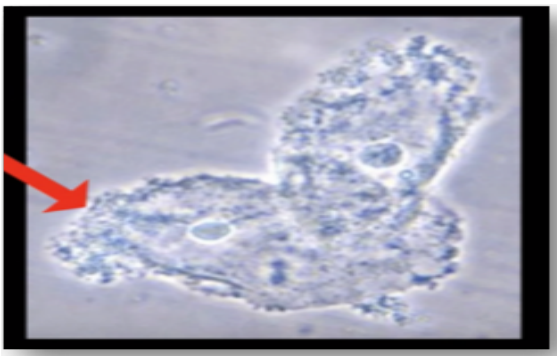
The cornerstone of the diagnosis is the wet mount.

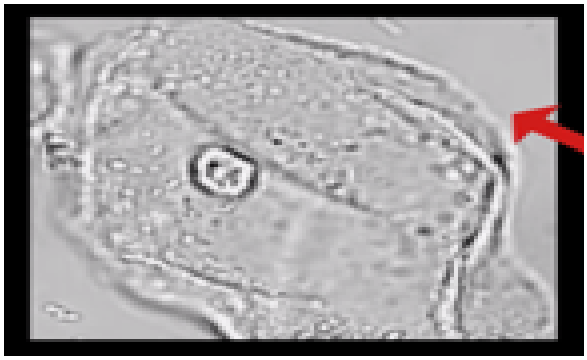
wet mount: A dry speculum will be placed in the vagina and specimen of vaginal discharge will swapped, Then two drops will spread into two slides one suspended with saline & second with KOH.

Be careful not to get cervical mucus which is all to the Ph of the specimen.

Normal vaginal ph is 3.8 - 4.5. How to measure? Nitrazine paper



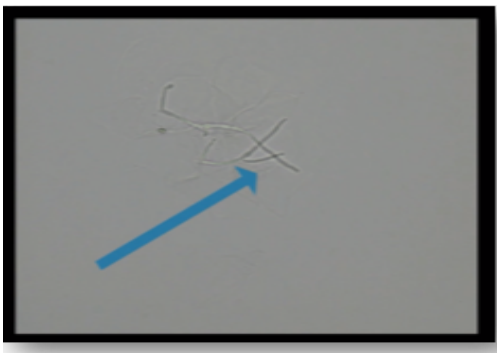


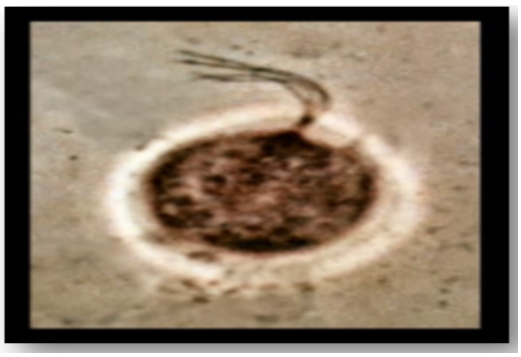


BV

Left; classic clue cells bacterial vaginosis, note the stippled borders of the cell.

Right; Normal smooth border





Vulvovaginal candidiasis	Trichomonal vulvovaginitis
Left: Wet mount slide shows a characteristic body hyphae of vulvovaginal candidiasis or yeast, it is often helpful to add some potassium hydroxide to the slide to better visualized the yeast.	characteristic wet mount finding of the trichomonas organism with characteristics flagella. Flagellated pear-shaped protozoan

Anatomy Review:

Vulva = labia majora, labia minora, vestibule and perineum are outside and vagina is inside.

Itching:

Many patients presenting with vaginitis symptoms will also have associated vulvar itching complaining.

Many patients assume that itching = yeast but this is definitely not the case.

Report of 200 new patients to a vulvar specialty clinic, the etiology of itching vulva was:-

-Contact dermatitis 20%

-Recurrent yeast 20%

-Lichen sclerosis/ Lichen simplex 11%

-Bacterial vaginosis 7%

-Vulvar vestibulitis 13%

-Atrophic vaginitis 13%

Common vulvar irritants:

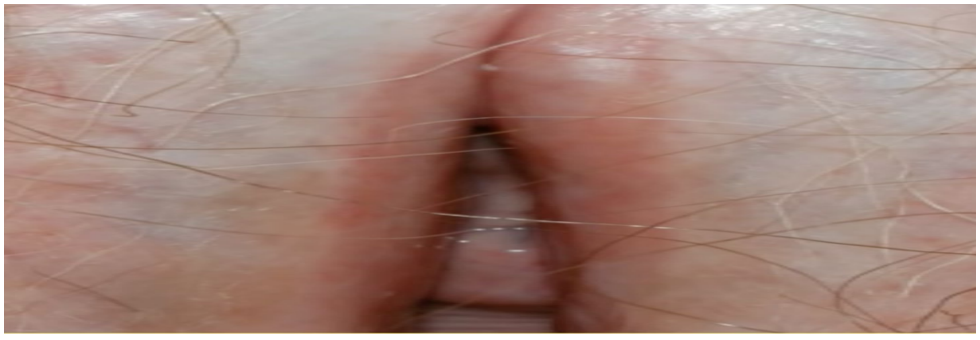
- Shampoo and body washes
- Creative underwear; 100% cotton is the best
- Maxi pads and pantiliners.

Itch/scratch cycle: if the itching not getting better with topical steroid or not seems to make sense then a biopsy should be performed.

Biopsy: Evaluate for dysplasia and cancer and can also diagnose benign vulvar conditions.

Benign vulvar conditions			
	Lichen sclerosus	**Lichen planus**	**Lichen simplex chronicus**
Definition	Benign chronic dermatological condition characterized by: -marked inflammation. -epithelial thinning. -distinct dermal changes.	Rare inflammatory skin condition that can affect the skin, oral cavity, vulva and vagina.	Skin changes that occur with itch/scratch cycle
Signs	Crinkled skin, L.minora atrophy, constriction of V.orifice, adhesions, ecchymoses & fissures.		Contact dermatitis, erythema of labia majora.
Symptoms	Patient will experience vulvar itching and burning.	Women can experience chronic vulvar burning and itching, insertional dyspareunia, profuse vaginal discharge	
Treatment	Topical corticosteroids		Topical corticosteroids, counseling on how to avoid skin irritants, breaking the itch/scratch cycle.
Notes	Patient with lichen sclerosus at increased risk of squamous cell carcinoma of the vulva.	Note that lichen planus can affect both vulva and vagina whereas lichen sclerosus can affect only vulva.	itch/scratch cycle: -scratching -mechanical irritation -epidermal thickening and inflammatory. -cell infiltrate.

LICHEN SCLEROSUS Dr SAID : we might bring a picture about it in the OSCE “discussion station”.



Case

A **20** year-old female college student comes to see you because of a **persistent vaginal discharge.** She is also interested in discussing contraceptive options. She and her boyfriend have been **sexually active** for 6 months. They use condoms "most of the time," but she is interested in using something with a lower failure rate for birth control. She has regular menses and no significant past medical or gynecologic history. She describes her vaginal discharge as yellowish and also notes mild vulvar irritation. On physical exam, she has normal external female genitalia without lesions or erythema, a **gray/yellow discharge on the vaginal walls and pooled in the posterior fornix**. Her cervix is grossly normal but bleeds easily with manipulation. The bimanual exam is unremarkable.

Questions

1. What is your differential diagnosis?

- Bacterial Vaginosis.
- Trichomoniasis (Trichomonasvaginalis).
- Candidiasis.
- Gonorrhea.
- Chlamydia.

2. What tests are currently available to help in the diagnosis of these disorders?

- Saline Wet mount.
- 10% Potassium Hydroxide Microscopy (KOH test).
- Vaginal pH (important that sample come from mid portion of vaginal sidewall to prevent collection of cervical mucous, blood, or semen which may alter results) Can be a direct measurement or colorimetric testing.
- Amine or "Whiff" Test.
- Vaginal Culture.
- Polymerase Chain Reaction Tests are available for gonorrhea, chlamydia, candida, and trichomoniasis.
- Rapid tests for enzyme activity for bacterial vaginosis, trichomoniasis and candida are available.
- DNA or antigens testing is available for trichomoniasis, gonorrhea and chlamydia.
- Vaginal Gram Stain for Nugent Scoring of the bacterial flora can be helpful in identifying bacterial vaginosis(this scoring system assigns a value to different bacterial morphotypes seen on Gram stain of vaginal secretions).

3. What test findings would suggest trichomoniasis?

- Vaginal pH greater than 4.5
- Flagellated motile trichomonas on saline microscopy
- Positive vaginal culture
- OSOM Trichomonas Rapid Test (tests for trichomonasantigens)

4. What two findings can be used to diagnose vulvovaginalcandidiasis?

- Blastopores and pseudohyphaeon saline or KOH wet mount
- Positive vaginal culture

5. What are Amsel's Criteria for the diagnosis of Bacterial Vaginosis?

- Abnormal gray vaginal discharge
- Vaginal pH greater than 4.5
- Positive amine test = Fishy odor
- More than 20% of epithelial cells are clue cells

6. The patient is diagnosed with trichomoniasis. What is your treatment plan for this patient?

- Treatment with a 2 gram single oral dose of metronidazole or 500 mg oral metronidazole twice daily for 7 days; an alternate treatment can be Tinidazole 2g single oral dose.
- Sexual partner must be treated simultaneously and treatment of both partners should be completed before resumption of sexual activity
- Side effects of metronidazole treatment including a disulfiram-like reaction (drowsiness, headache, and a metallic or garlic taste in the mouth) should be discussed with the patient and patient should be encouraged to abstain from alcohol during and for 24 hours after treatment with metronidazole.

7. What are the additional reproductive health issues you would want to discuss with this patient?

- STI protection
- Contraception. Although this patient desires a contraceptive method that has a higher efficacy rate than condoms, you should discuss the need for condom use for protection from STIs.

8. Would you recommend screening for additional sexually transmitted infections in this patient and if so, how?

- Yes, with serologic testing for hepatitis B, syphilis, HIV and cervical cultures for gonorrhea and chlamydia.

The End !