MICROBIOLOGY
TEAM 432

LECTURE (1)

VULVOVAGINITIS

OBJECTIVES:

- Not given : /

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REVIEWED BY: Hessah Alshehri.

MIND MAP
VULVOVAGINITIS

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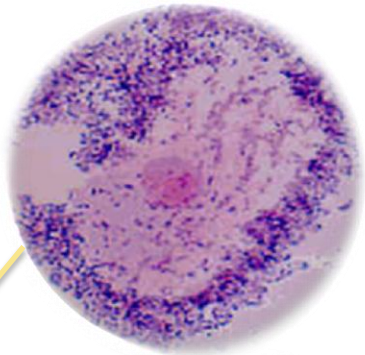
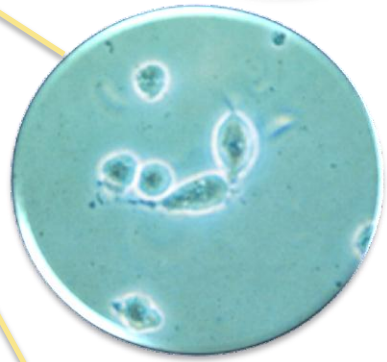
Vulvovaginitis



Bacterial: Bacterial vaginosis (BV)
40% (most common)
Clinical features, complications, diagnosis, treatment.

Fungal: Vulvovaginal candidiasis
25%
Predisposing factors, clinical presentation, diagnosis, treatment.



Parasitic: Trichomonial Vulvovaginitis
25%
Clinical features, complications, diagnosis, treatment.

Others: ↓ estrogen levels, Allergy, irritation, or injury response.

BACTERIAL VAGINOSIS (BV)

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Most common of vaginal syndrome.
A change in the balance of normal vaginal bacteria.
Very high numbers of bacteria such as:
Gardnerella vaginalis, Mycoplasma hominis, Bacteroides species, and Mobiluncus species.
In contrast, Lactobacillus bacteria are in very low numbers or completely absent.

Clinical Features:

-Itching & burning.
-Fishy-smelling (specially after sexual intercourse & menses).
-thin, milky-white or gray vaginal discharge.

Complications:

Very important & serious because it may lead to infertility & affect the pregnancy outcome.

BV Complications		
	OB	-Preterm delivery. -Premature rupture of membranes. -Premature labor. -Low birth weight. -Amniotic fluid infection. -Chorioamnionitis*. -Postpartum endometritis.
	GYN	-Pelvic inflammatory disease (PID). -Post-abortal pelvic inflammatory disease -Post-hysterectomy infections. -Mucopurulent cervicitis. -Endometritis. -Increased risk of HIV/STD.

*inflammation of the fetal membranes (amnion & chorion).

BACTERIAL VAGINOSIS (BV)

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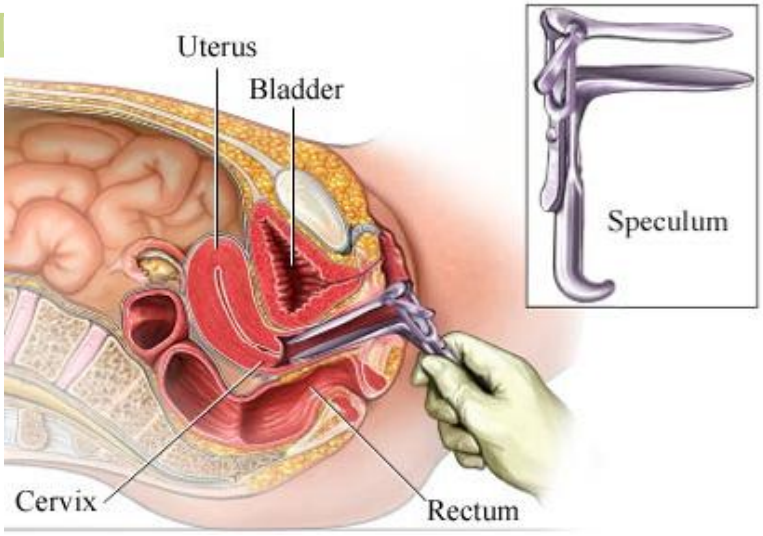
Diagnosis:

- Related symptoms & sexual history.
- Examination of introitus may reveal erythema of the vulva & edema of the labia.
- Speculum examination. (a medical tool for investigating body cavities)
- A sample of the vaginal swab.
-Empiric diagnoses often inaccurate & lead to incorrect treatment & management.
-Need for rapid, simple, accurate & inexpensive diagnostic tests (Office-based tests).

Office-based tests for vaginit

- Microscopy (Gram stain*, Not culture)
- PH measurement
- Whiff amine test

*Gram stain is the gold standard method for diagnosis.



Clinical Diagnosis:

(3 out of 4 of these criteria):

1. PH greater than 4.5
2. Positive Whiff test
3. Any clue cells
4. Homogenous discharge.

BACTERIAL VAGINOSIS (BV)

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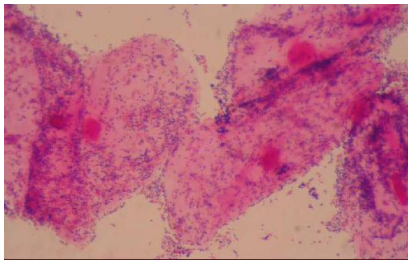
Gram Stain Diagnosis	PH TEST	KOH "WHIFF" TEST	WET MOUNT PREPARATION
Predominance of lactobacilli = normal. Mixed small gram-positive & gram-negative rods ± curved rods = BV.	PH indicator strips: pH 3.5 - 7.0 Place sample of vaginal secretion on test strip (read while still moist).	Sample of vaginal secretions are placed in a test tube with 10% KOH.	Vaginal secretion sample from the anterior fornix and lateral wall.
	PH >4.5 indicates abnormality (i.e. *BV, Trichomonas, or menstrual blood).*	KOH alkalizes amines produced by anaerobic bacteria-results in a sharp "fishy odor"	Place swab in test tube with small amount of normal saline & place sample on glass slide with cover slip
Gram –ve coccobacilli: -Anaerobes cause BV. -No lactobacilli are seen. -Then score by Nugent scoring system.	Be careful not to sample the cervix; cervical secretions & blood have a PH 7.0		Visualize at both low & high power: Clue cells*, yeast, trichomonas, WBC, bacteria. *Clue cells: epithelial cells coated with bacteria.

Treatment: Metronidazole (also called Flagyl), Tinidazole.

CANDIDIASIS

Overgrowth of a normal inhabitant of the vagina.

Predisposing factors:

Pregnancy , DM, Immunocompromised conditions, antibacterial treatment.

Clinical Presentation:

Irritation , pruritus, soreness, painful sexual intercourse, burning on passing urine & a thick, curdy, white (like cottage cheese) vaginal discharge. (little secretion, مع حبيبات).
(Itching is more with CANDIDIASIS than Bacterial Vaginosis)

Diagnosis of Vulvovaginal candidiasis (VVC):

-Wet prep to see clumps of pseudohyphae.
-Budding yeast without pseudohyphae in patients with C. glabrata.
-KOH prep helpful but not always necessary.

Vaginal Yeast Cultures:

-Not routinely indicated (many women are colonized with Candida).
-If obtained must correlate with patient signs & symptoms.
-For recurrent infections culture & susceptibility.
-Testing may be helpful (immunocompromised).

Treatment: Oral azole (Fluconazole, or Itraconazole).

TRICHOMONIASIS

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- Sexually transmitted parasite.
- Trichomonas is the most prevalent non-viral sexually transmitted disease (STD) agent.

Clinical Presentation :

❑ Females:

-Vaginal discharge, pruritus in females, but may be asymptomatic.
-Painful urination.
-Painful sexual intercourse (dyspareunia).
-A yellow-green to gray, sometimes frothy, vaginal discharge.
-The discharge is characteristically malodorous smelling.

❑ Males usually asymptomatic, but can cause Non-gonococcal urethritis.

Trichomonas Complications :

- Premature rupture of membranes.
- Preterm labor & birth.
- Low birth weight.
- Increased transmission of other STDs including HIV.

TRICHOMONIASIS

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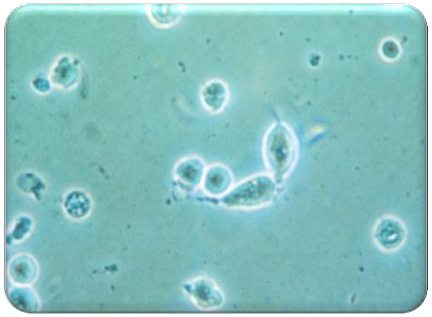
DIAGNOSIS :

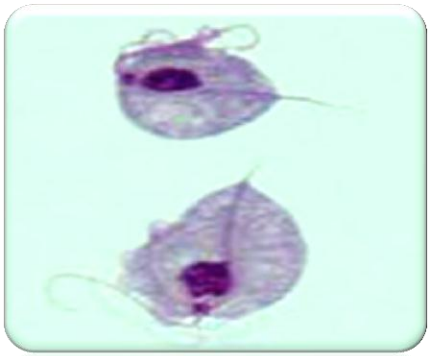
-**Culture** is considered the gold standard for the diagnosis of trichomoniasis.
Its disadvantages include cost & prolonged time before diagnosis.
-**Pap Smear** (you will see Trichomonas).
-**Wet Prep** (you will see Trichomonas)
In this case wet mount is helpful (Trichomonas are motile).
(However, this method is not used in our lab because when the sample arrives, the flagella is already dead).



Wet Prep

OTHER METHODS OF DIAGNOSIS:

- EIA (ELISA): Sensitivity 91.6% , Specificity 97.7%
- DNA Probe: expensive, poor predictive value alone.



Culture

Treatment: Metronidazole, Tinidazole.

SUMMARY

Very Very Very Important

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Organism	Bacterial vaginosis	Candidiasis	Trichomoniasis
Etiology	Gardnerella vaginalis (most common) Other: Mycoplasma hominis, Bacteroides species, Mobiluncus species	Candida albicans 80-90% Other: C.Glabrata, C. tropicalis	Parasite Trichomonas vaginalis Sexually transmitted The most prevalent non-viral STD
Vaginal discharge	Malodorous Fishy - smelling Milky - white to Gray pH >4.5	Pruritus Thick cheesy Irritation Painful sexual intercourse Burning on passing urine pH <4.5	Copious (large amount) Frothy (foamy) Yellow - green to gray Malodorous smelling pH >4.5
Diagnosis	▪Gram staining of the vaginal smear ▪pH measurement >4.5 ▪Whiff amine test Wet Mount to see clue cells but not usually done for BV	Gram staining of the vaginal smear Wet prep to see clumps of pseudohyphae	Gram staining of the vaginal smear Trichomonas Pap Smear Trichomonas Wet Prep (mount) (flagellated motile)
Treatment	Metronidazole	Fluconazole orally. Ketoconazole	Metronidazole Tinidazole

Questions

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1) A woman is complaining about a grey to white frothy malodorous vaginal discharge. On examining the vaginal discharge under the microscope, a motile organism was seen. Which of the following is the causative agent?

a. Candida b. Trichomonas vaginalis c. Neisseria gonorrhoeae d. gardenella vaginalis

2) Patient present with milky - white or gray vaginal discharge, what is the sample you should send?

a. Blood b. Urine c. Smear – swab d. Biopsy

3) A patient came with frothy green vaginal discharge, & flagellated protozoan was found, what it the treatment?

a. Ceftriaxone b. Metronidazole c. Flucanozole d. Vancomycin

4) A 35 - year - old woman complains of vaginal discomfort for 2 weeks. Physical examination reveals a scanty vaginal discharge. The fluid develops a "fishy" odor after treatment with 10% potassium hydroxide. A Pap smear taken during the pelvic examination shows squamous cells covered by coccobacilli ("clue" cells). Which of the following is the most likely etiology of vaginal discomfort in this patient?

a. Chlamydia trachomatis. b. Gardnerella vaginalis. c. Herpes simplex virus. d. Trichomonas vaginali.

Qs	1	2	3	4
answer	B	C	B	B

For any suggestions or problems please contact
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Thank you