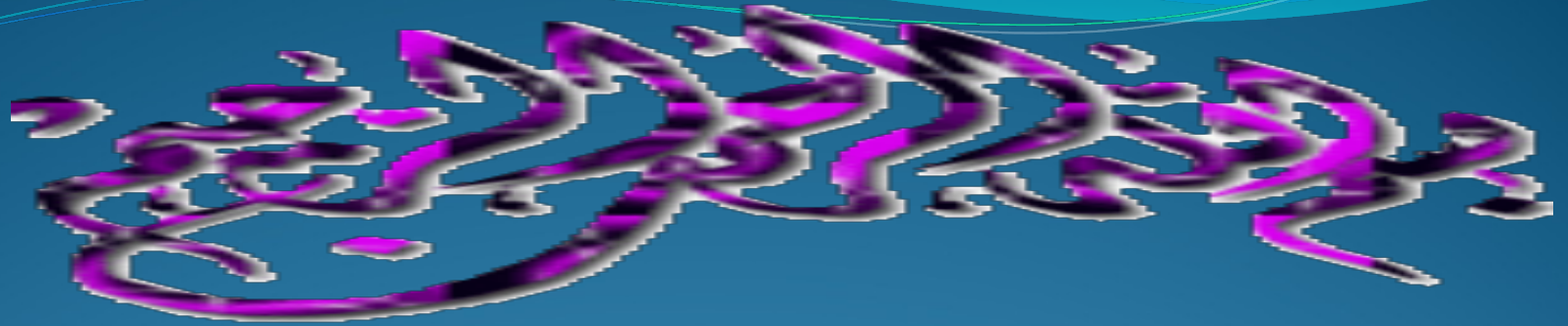




# ***MICROBIOLOGY PRACTICAL***

*Reproductive block*

**2021**



# *Sexually Transmitted Diseases*

## *Practical*

**Dr. Malak El-Hazmi**

*Associate Professor*

*College of Medicine*

# Objectives

- Name various **etiological agents** causing localized STD.

(Genital ulcers, Urethritis and Urethral vaginal discharge)

- Describe the **clinical presentations** of localized STD.
- Discuss the **microbiological methods** used for Dx of localized STD.
- Outline the **management** of localized STD.

# Case 1

- A 23-year-old alcoholic and drugs (cocaine) addict single male arrived from his trip to South East Asia four months ago.
- He gave history of multiple sexual partners.
- Two months ago , he developed ulcer on his penis which disappeared completely.
- A full physical notes a rash on his trunk and extremities including palms and soles.



Seattle STD/HIV Prevention Training Center  
Source: Connie Celum, Walter Stamm



What are the possible causes for his presentation?

## Genital ulcer

- *Treponema Pallidum*
- *Herpes Simplex Virus 2*
- *Haemophilus Ducreyi*

# Genital ulcer



**Chancroid**  
*H Ducreyi*



**Chancre**  
*T Pallidum*



**Ulcerated Vesicles**  
*HSV 2*

How could you differentiate between them based on s/s of the patient?

Ulcer	Etiology	Ulcer	Lymphadeno pathy (Babo)	Systemic
<b>Chancroid</b>				
<b>Chancre</b>				
<b>Ulcerated Vesicles</b>				



How could you differentiate between them based on s/s of the patient?

Ulcer	Etiology	Ulcer	Lymphadenopathy (Bubo)	Systemic
Chancroid	<i>Haemophilus Ducreyi</i>	Wet, painful	Inguinal tender	Present

How could you differentiate between them based on s/s of the patient?

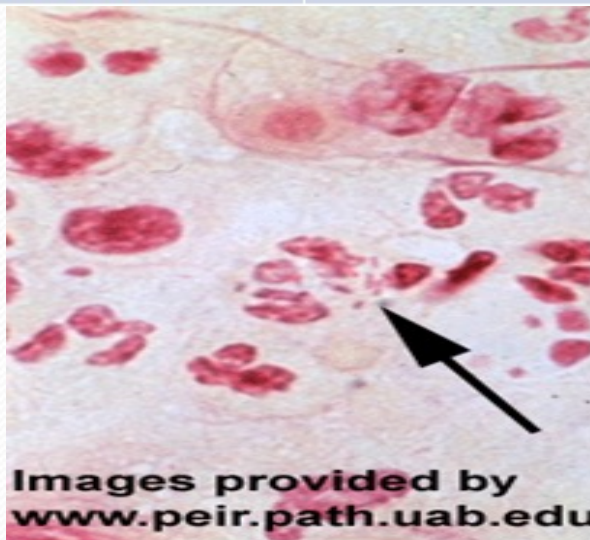
Ulcer	Etiology	Ulcer	Lymphadeno pathy (Babo)	Systemic
Chancroid	<i>Haemophilus Ducreyi</i>	Wet, painful	Inguinal tender	Present
<b>Chancre</b>	<i>Treponema Pallidum</i>	Dry, painless and raised margin	Inguinal	Depends on stage

# How could you differentiate between them based on s/s of the patient?

Ulcer	Etiology	Ulcer	Lymphadeno pathy (Babo)	Systemic
Chancroid	<i>Haemophilus Ducreyi</i>	Wet , painful	Inguinal tender	Present
<b>Chancre</b>	<i>Treponema Pallidum</i>	Dry, painless and raised margin	Inguinal	Depends on stage
Ulcerated Vesicles	<i>Herpes Simplex Virus 2</i>	Multiple shallow painful	Occasionally present	In primary

# What investigations would you like to order for him? Explain how those investigations would help you?

Ulcer	Microscopy	Culture	DFA	Serology
<i>Haemophilus Ducreyi</i>	Gram stain; gm-ve small bacilli & pus cell	Selective media	NA	NA



**What investigations would you like to order for him?  
Explain how those investigations would help you?**

Ulcer	Microscopy	Culture	DFA	Serology
<i>Haemophilus Ducreyi</i>	Gram stain; gm-ve small bacilli & pus cell	Selective media	NA	NA
<i>Treponema Pallidum</i>	Dark Field M; Motile Spirochetes	Not grown	+	RPR TPHA FTA.ABS

## What investigations would you like to order for him? Explain how those investigations would help you?

Ulcer	Microscopy	Culture	DFA	Serology
<i>Haemophilus Ducreyi</i>	Gram stain; gm-ve small bacilli & pus cell	Selective media	NA	NA
<i>Treponema Pallidum</i>	Dark Field M; Motile Spirochetes	Not grown	+	RPR TPHA FTA.ABS
<i>Herpes Simplex Virus 2</i>	EM -NA	Produce cytopathic effect in cell culture	+	IgM IgG

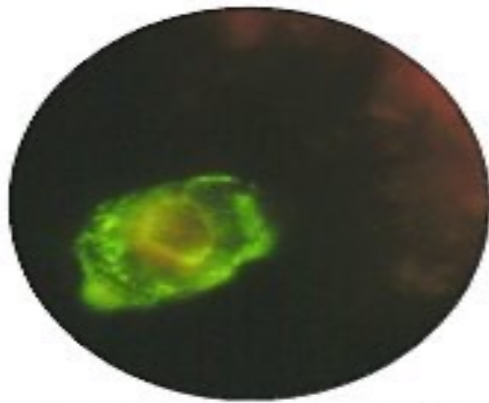
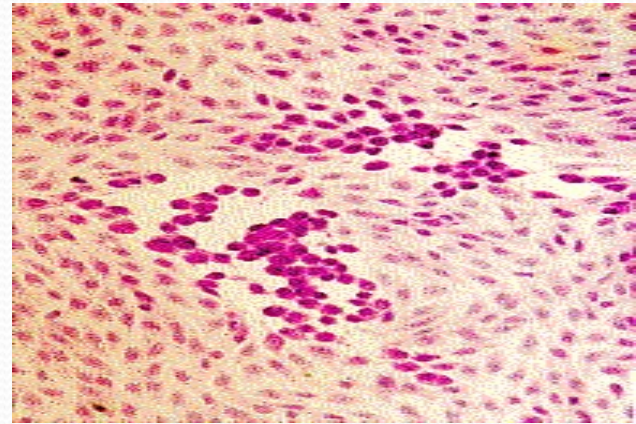
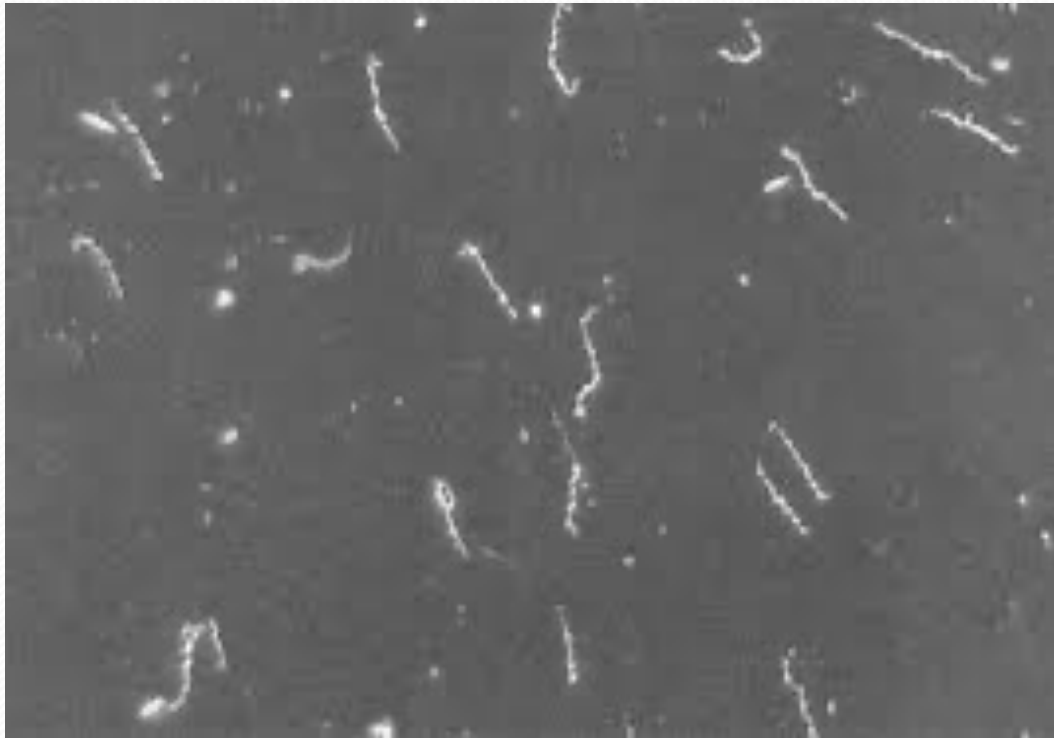


Fig. 3, HSV-infected epithelial cell from skin lesion (DFA)



Cytopathic effect of HSV in cell culture

- The lesion was sampled and examined by dark-field microscopy;





# ***SYPHILIS***

**Infection**



***Primary  
Chancre***

***Secondary  
Dermal rash  
Lymphadenopathy  
Meningovascular***

***Latency (1/3)  
Biologic Cure (1/3)  
Tertiary (1/3)  
Gummatous  
Cardiovascular  
Neurosyphilis***

**Days to  
Weeks**

**Weeks to  
Months**

**Months to  
Years**



# Case 1

- A 23-year-old alcoholic and drugs (cocaine) addict single male arrived from his trip to South East Asia four months ago.
- He gave history of **multiple sexual partners**.
- Two months ago , he developed **ulcer** on his penis which disappeared completely.
- A full physical notes a **rash** on his trunk and extremities including palms and soles.



**What is the likely diagnosis and the stage of the disease in this case?**

## Briefly outline the management of this patient?

Patient Benzathine penicillin IM---allergy-- Doxycycline  
tested for other STD especially HIV  
Counseling and Education

Partner

## Case 2

- A 35-year-old married male presented to the emergency room complaining of dysuria for the last 24-hours and noted some "**pus-like**" drainage in his underwear and the tip of his penis.





What is the most likely diagnosis?

# What is the most likely diagnosis?

## Urethritis



**Gonococcal  
Urethritis**



**Non-gonococcal  
urethritis**

## What are the possible causes for his presentation?

	Organisms	Urethritis
Gonococcal Urethritis	<i>Neisseria gonorrhoeae</i>	Purulent discharge
Non-gonococcal urethritis	<i>Chlamydia trachomatis</i>	Mucopurulent
	<u>Others</u> <ul style="list-style-type: none"><li>• <i>Trichomonas vaginatis</i></li><li>• <i>Mycoplasma</i></li></ul>	

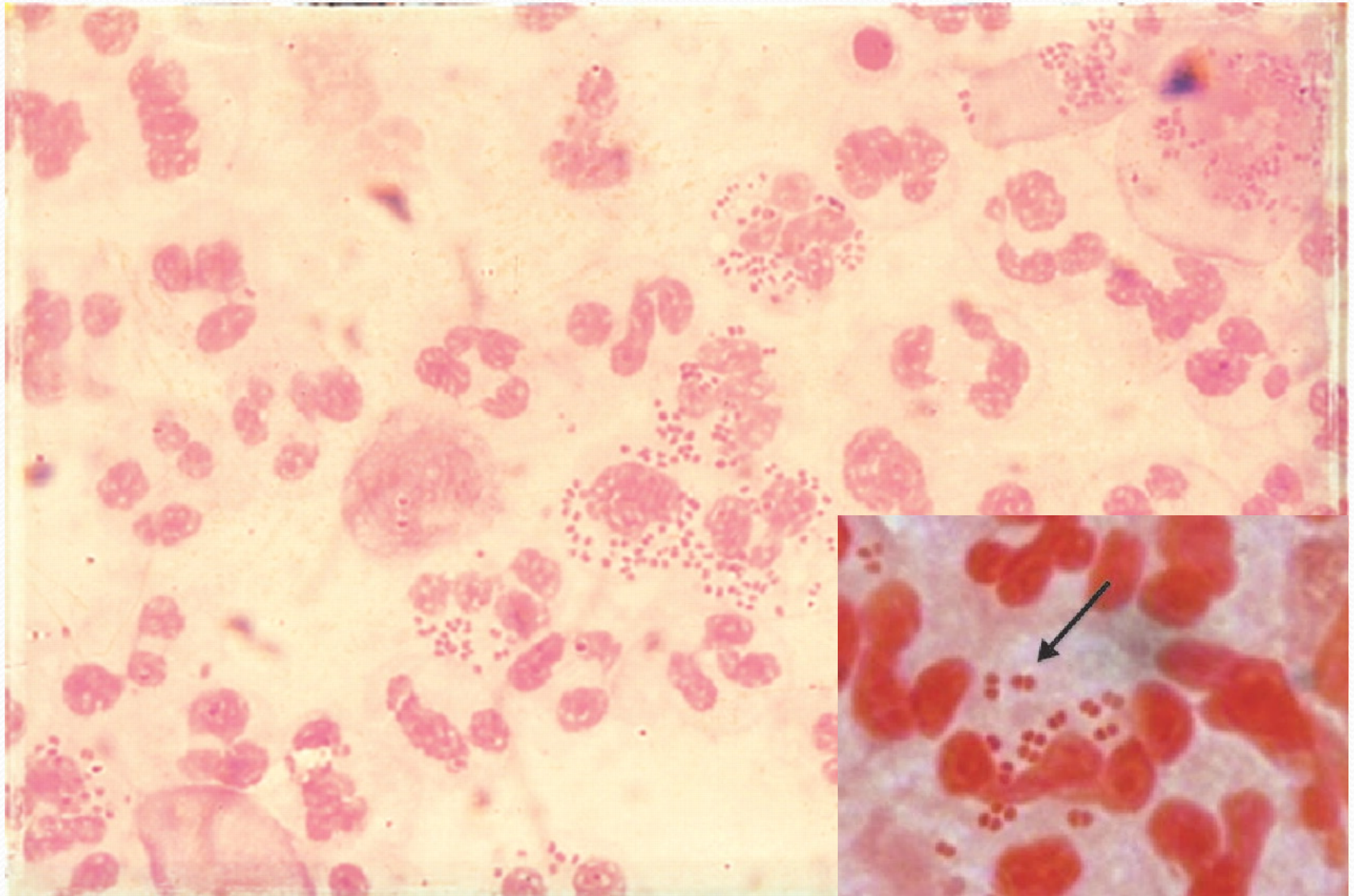


What investigations do you like to order for him?  
Explain how those investigations would help you?

	Organisms	Smear/ <b>Culture</b>	Immunological tests	Molecular testing
GCU	<i>Neisseria gonorrhoeae</i>	Gram-ve diplococci & pus cell / <b>Selective media</b>		+ve (Gold Standard)
NGCU				

# What investigations do you like to order for him? Explain how those investigations would help you?

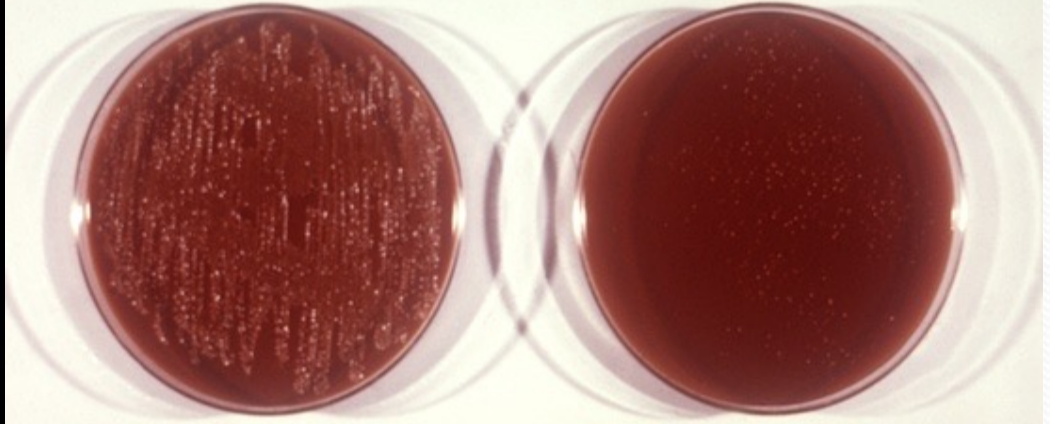
	Organisms	Smear/ <b>Culture</b>	Immunological tests	Molecular testing
GCU	<i>Neisseria gonorrhoeae</i>	Gram-ve diplococci & pus cell / <b>Selective media</b>		+ve (Gold Standard)
NGCU	<i>Chlamydia trachomatis</i>	Pus cell/ <b>McCoy Cell culture</b>	DFA ELISA Rapid test	+ve(Gold Standard)
	<u>Others</u> <i>Trichomonas vaginalis</i> <i>Mycoplasma</i>	➤ Wet mount; pus &TV/ <b>Culture</b> ➤ Pus cell / <b>Special media culture</b>	EIA  EIA	+ve  +ve





**Chocolate Medium  
Overgrowth**

**Rectal Specimen**  
(Testing for *Neisseria gonorrhoeae*)



**Thayer-Martin Medium  
*Neisseria* Only**



**Rectal Specimen**  
(Testing for *Neisseria gonorrhoeae*)



**Chocolate Medium  
Overgrowth**



**Thayer-Martin Medium  
*Neisseria* Only**





**Base on the finding, what is the most likely diagnosis?  
Briefly outline the management of this patient?**

## Case 3

- A 24-year-old female noted vaginal itching and irritation with a discharge. Previously, she developed a yeast infection that was treated with over-the-counter medications and resolved. Thinking that this was recurrence, she again self-treated. This time, however, the symptoms did not resolve.

# What are the possible causes for her presentation?

- *Bacterial vaginosis*
- *Candida vaginitis*
- *Trichomoniasis*
- *Allergic vaginitis*
  
- *Chlamydia trachomatis*
- *Neisseria gonorrhoeae*



*What investigations would you like to order for her?  
Explain how those investigations would help you?*

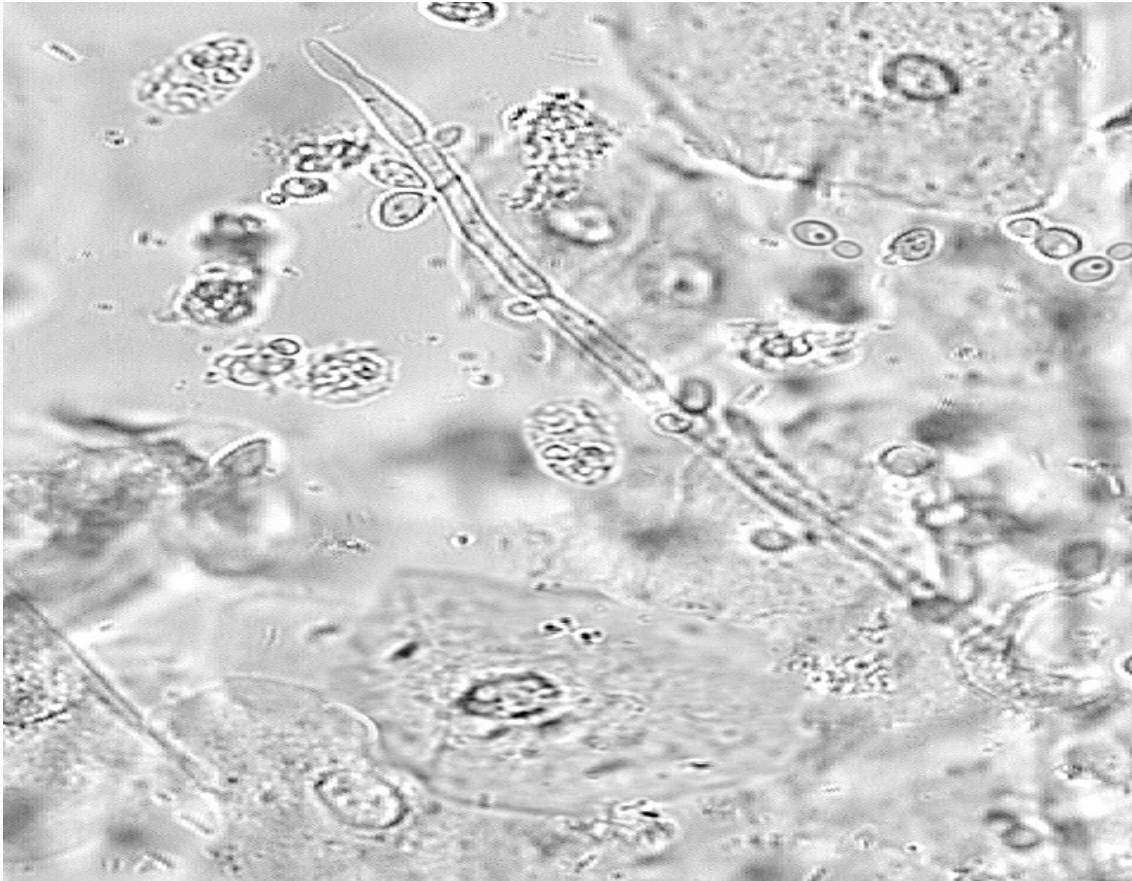
**PH**



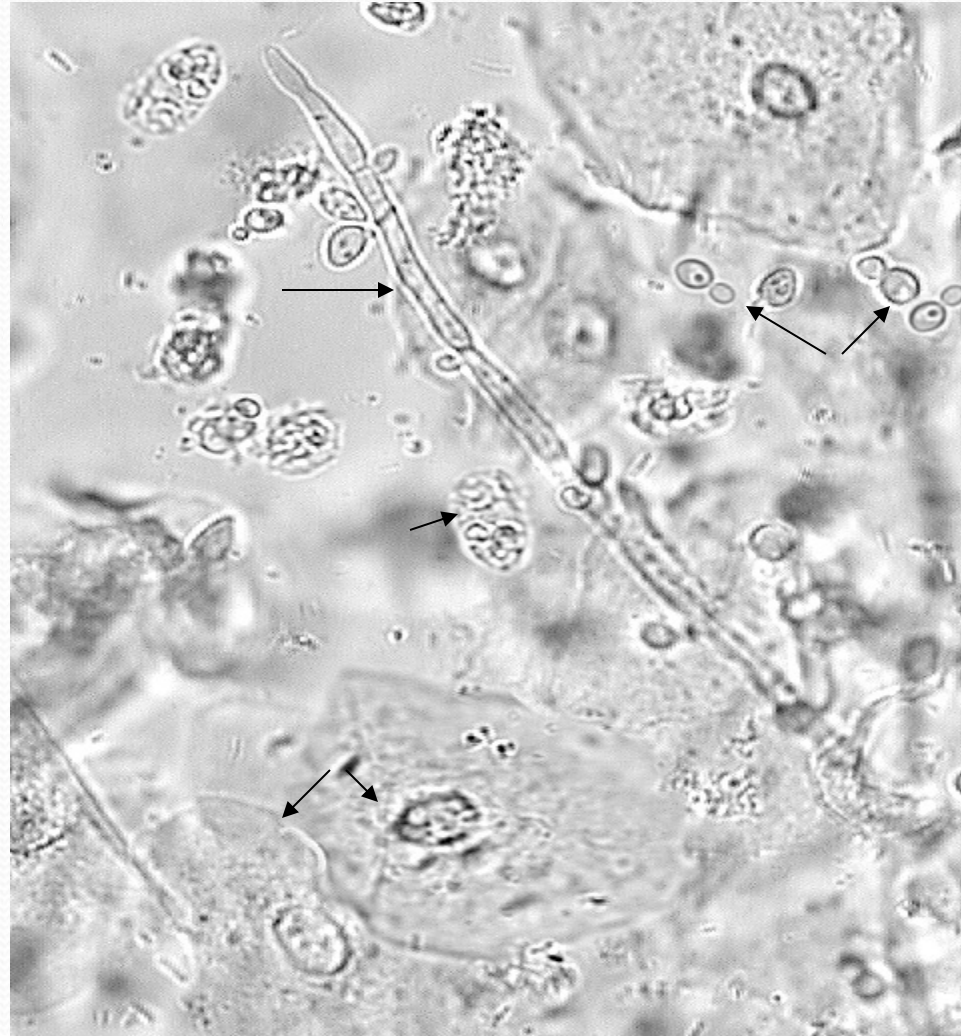
**Whiff  
test**



# Wet Prep:

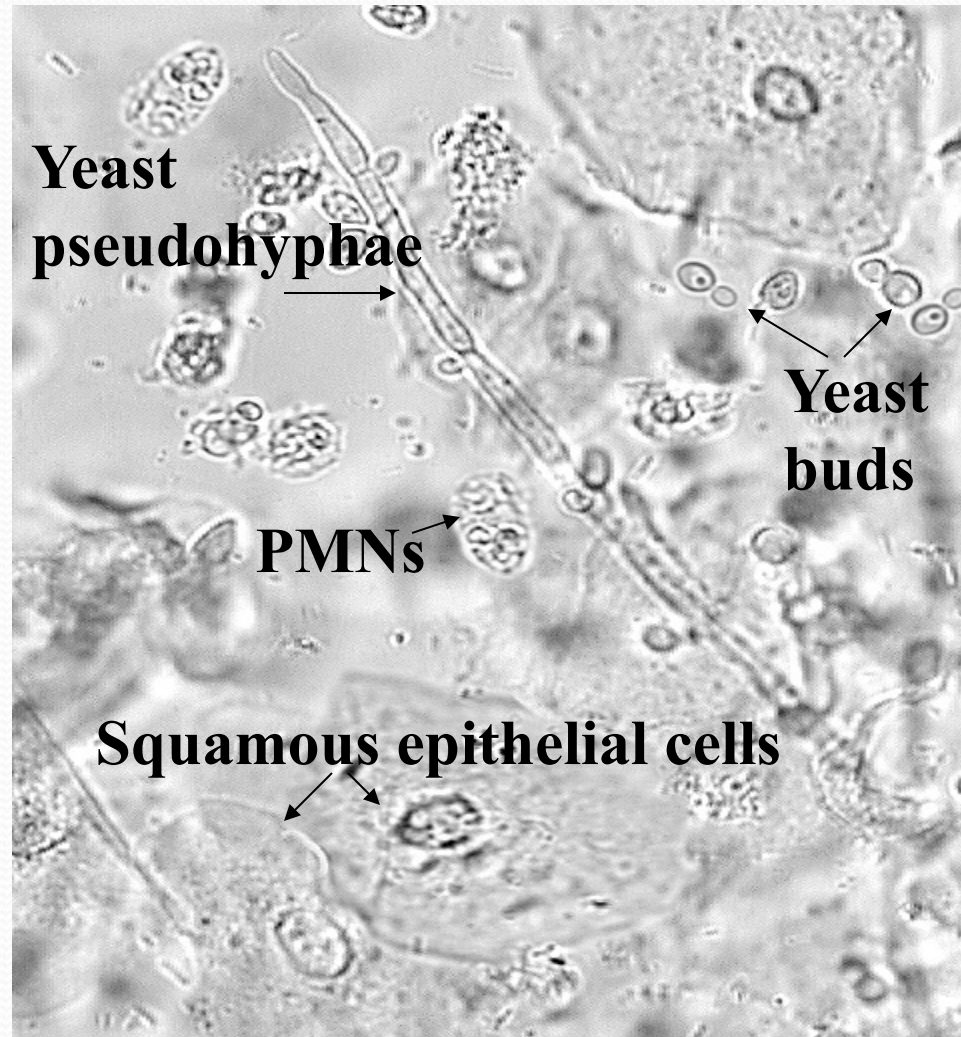


**Saline: 40X objective**

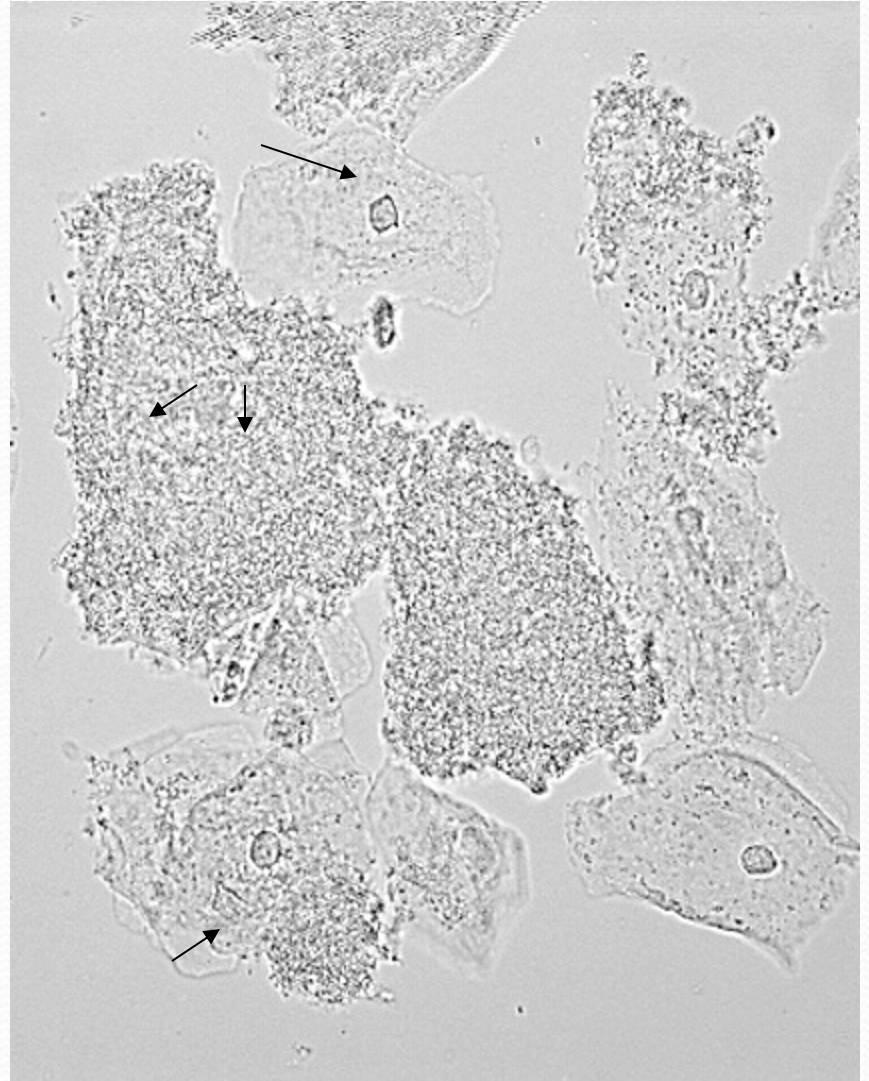
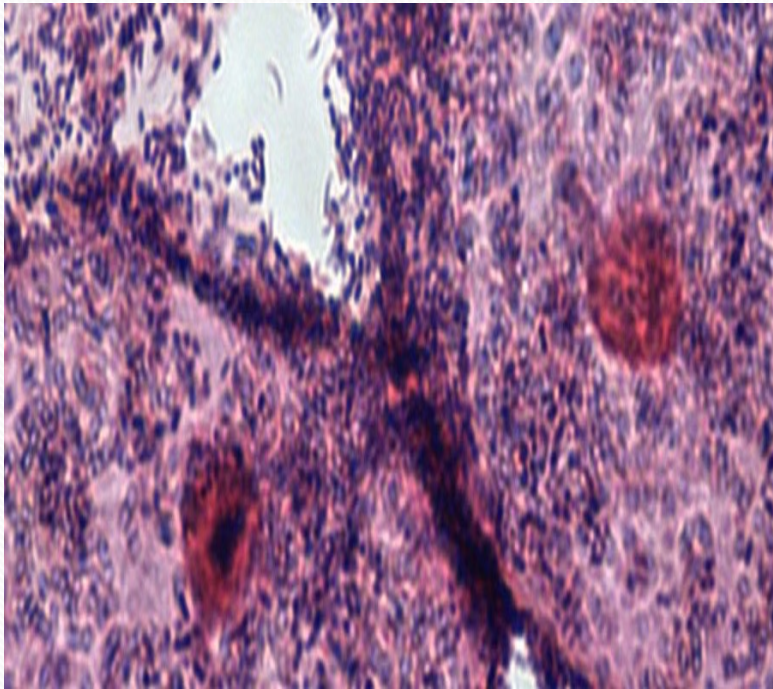


# PMNs and Yeast Pseudohyphae

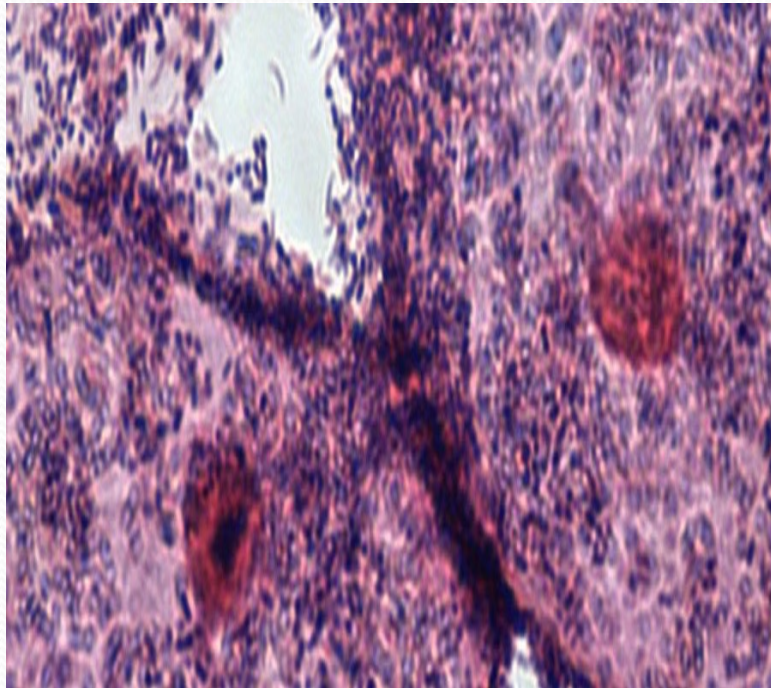
**Saline: 40X objective**



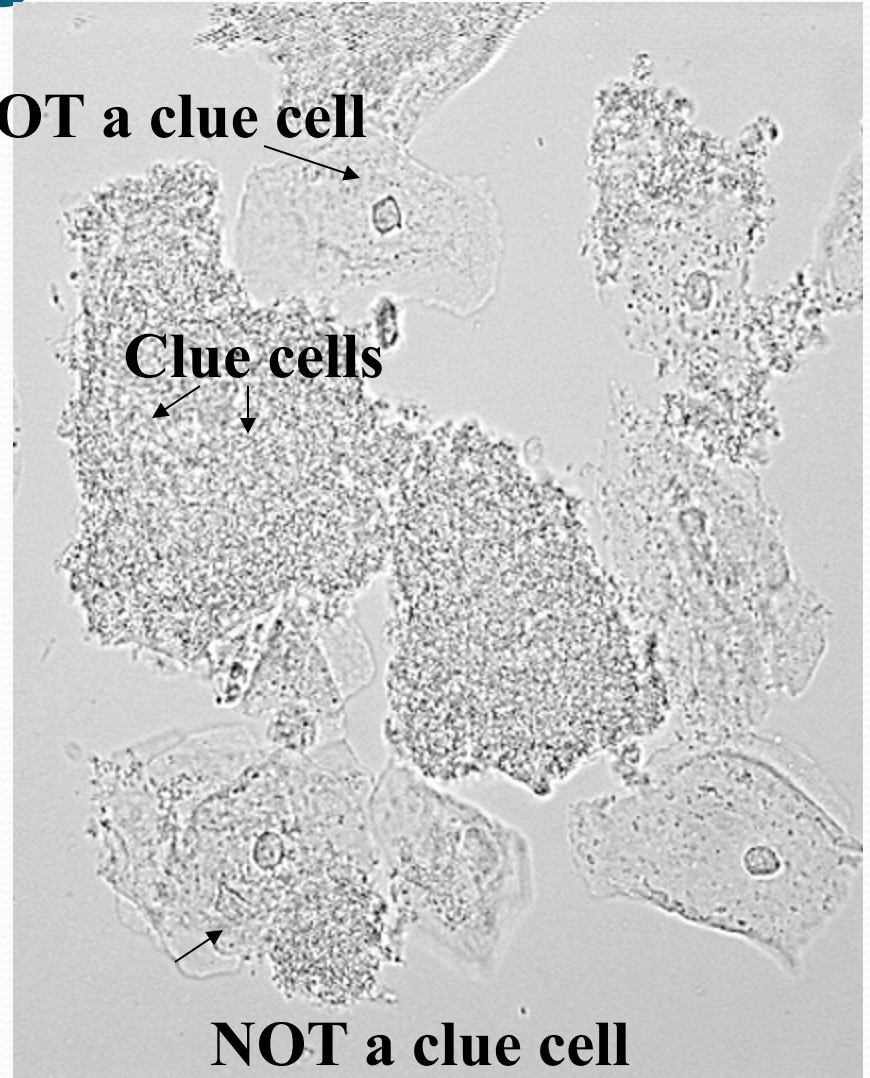
*Source:* Seattle STD/HIV Prevention Training Center at the University of Washington



# Bacterial Vaginosis



**NOT a clue cell**



**Clue cells**

**NOT a clue cell**

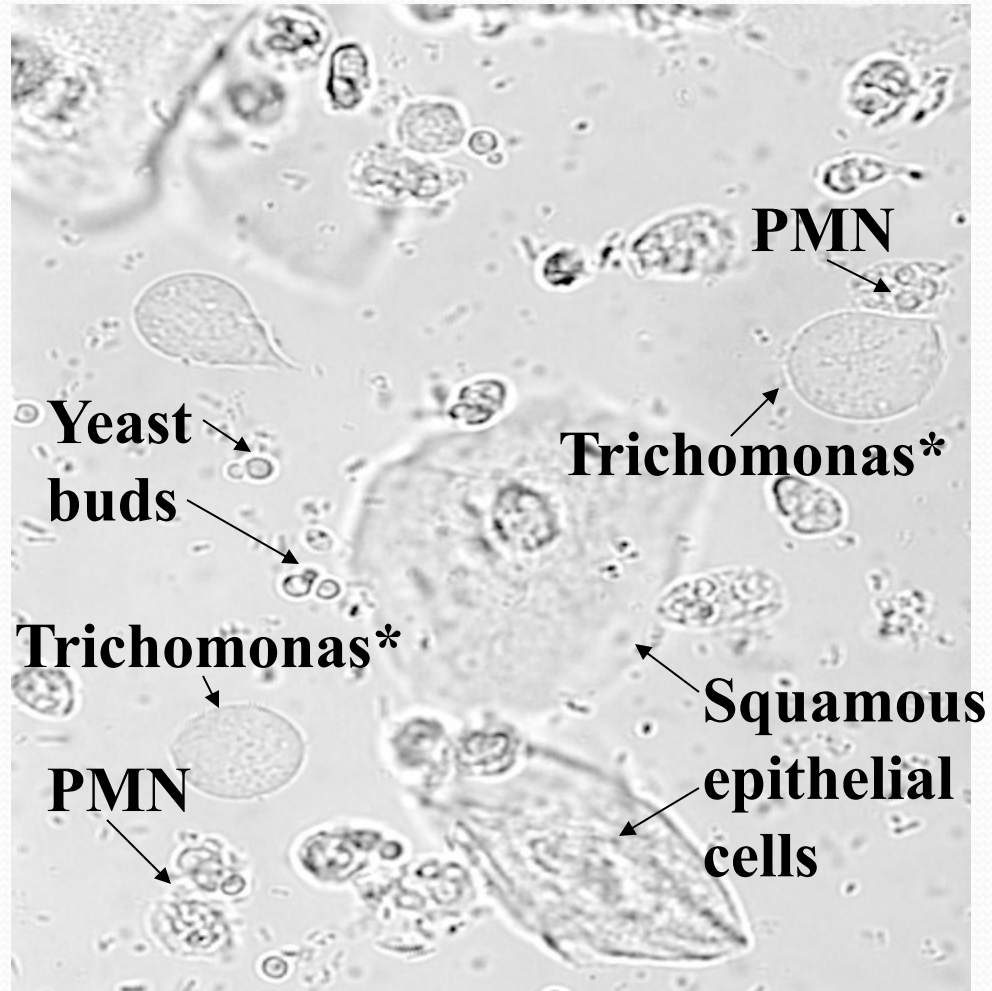
**Saline: 40X objective**



*Source:* Seattle STD/HIV Prevention Training Center at the University of Washington

# Wet Prep: Trichomoniasis

**Saline: 40X objective**



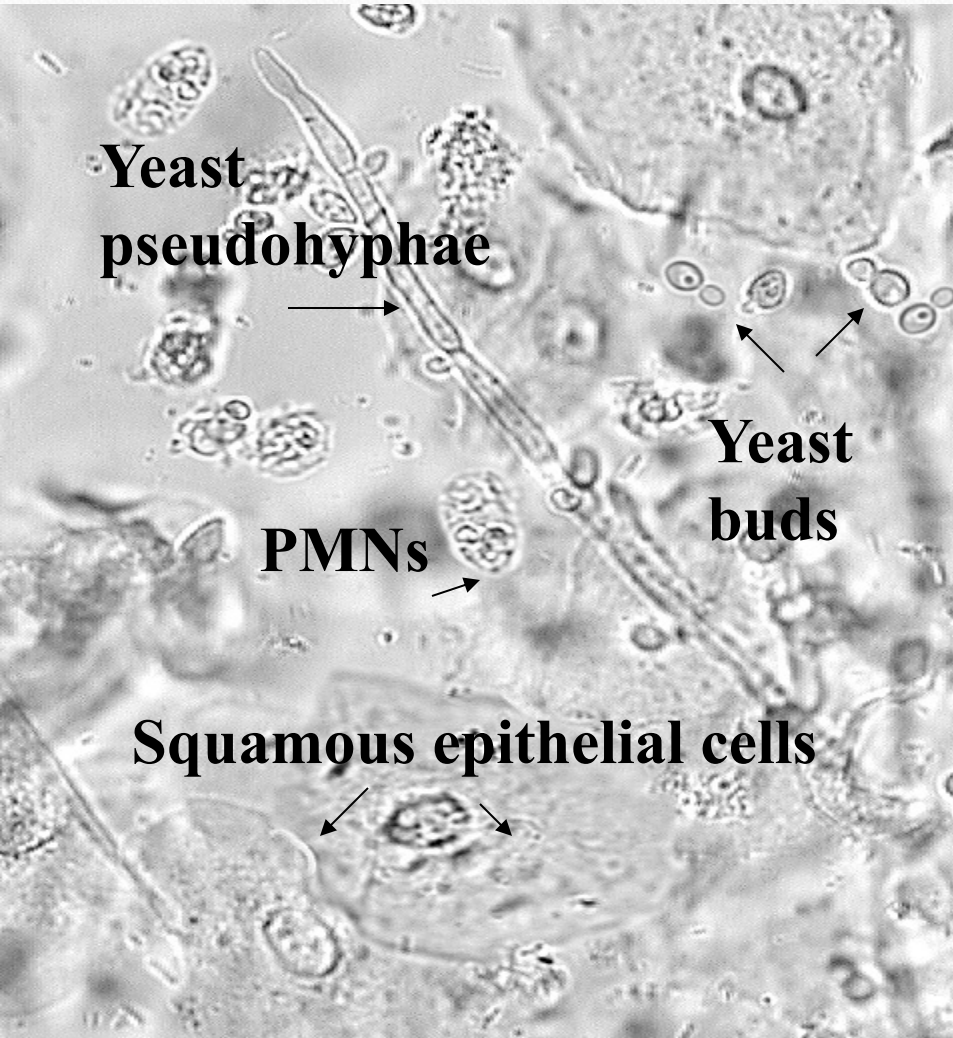
\*Trichomonas shown for size reference only: must be motile for identification

Source: Seattle STD/HIV Prevention Training Center at the University of Washington

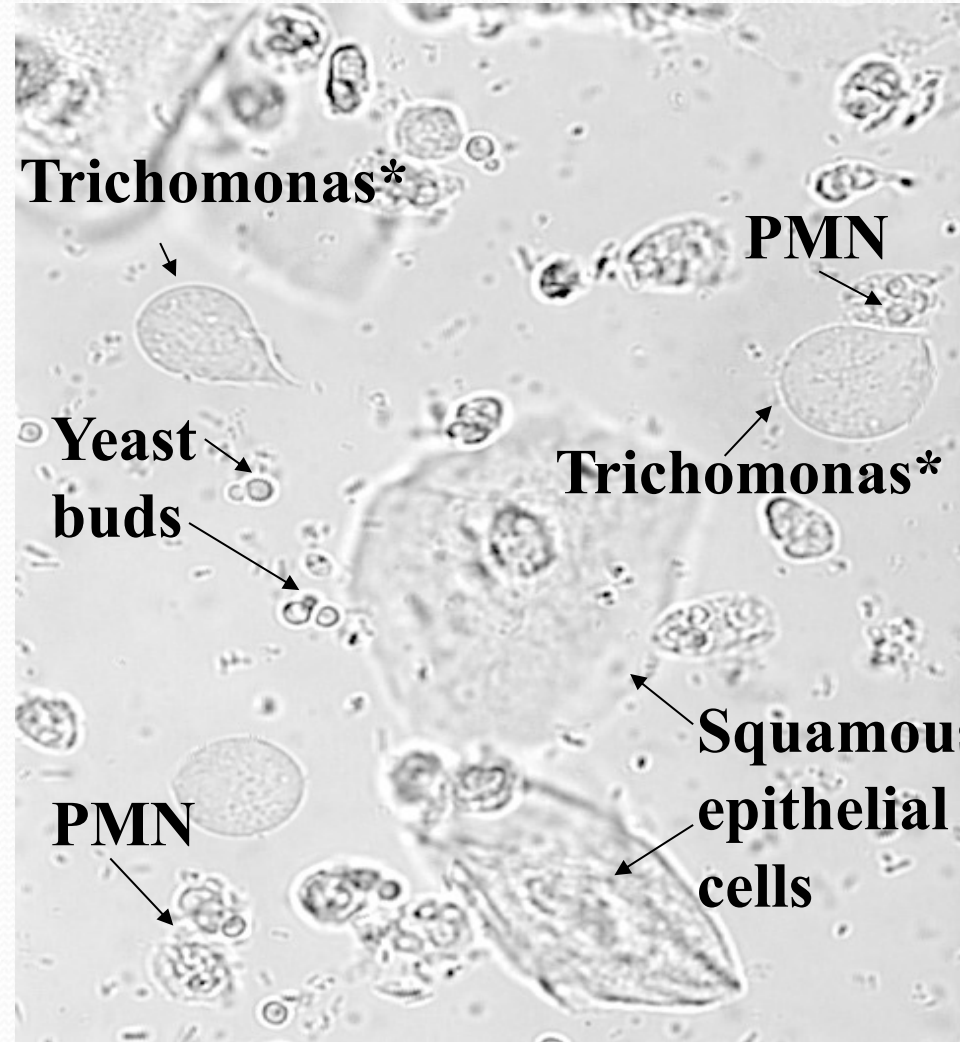


# Wet Prep:

## Yeast Pseudohyphae



## Trichomoniasis



*What investigations would you like to order for her?  
Explain how those investigations would help you?*

	PH	Whiff test	Gram stain / Wet prep	Culture	Immunologic/ molecular test
Bacterial vaginosis	>4.5	+++	Clue cells	Not helpful	DNA Probe (gardnerella vaginalis)
Candida vaginitis					
Trichomonas vaginitis					

*What investigations would you like to order for her?  
Explain how those investigations would help you?*

	PH	Whiff test	Gram stain / Wet prep	Culture	Immunologic/ molecular test
Bacterial vaginosis	>4.5	+++	Clue cells	Not helpful	DNA Probe (gardnerella vaginalis)
Candida vaginitis	<4.5	-	Yeast and pseudohyphae	Candida	DNA Probe
Trichomonas vaginitis					

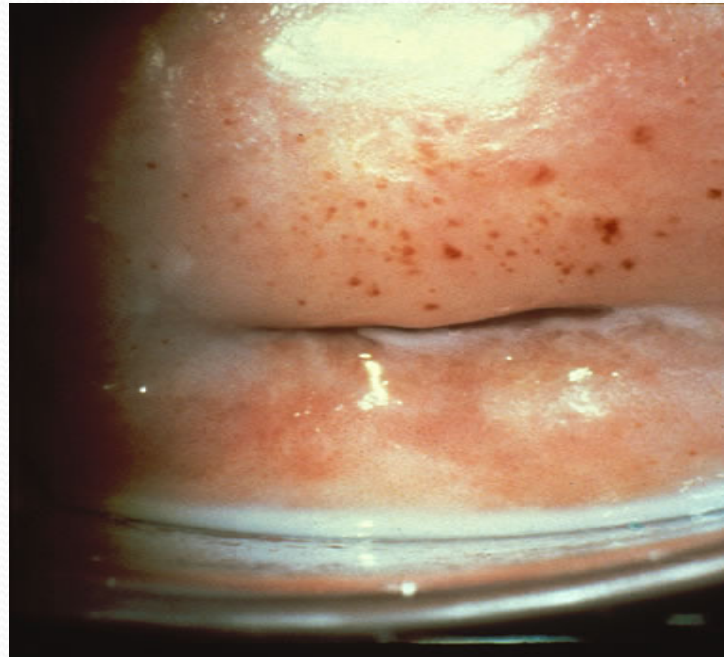
*What investigations would you like to order for her?  
Explain how those investigations would help you?*

	PH	Whiff test	Gram stain / Wet prep	Culture	Immunologic /molecular test
Bacterial vaginosis	>4.5	+++	Clue cells	Not helpful	DNA Probe (gardnerella vaginalis)
Candida vaginitis	<4.5	-	Yeast and pseudohyphae	Candida	DNA Probe
Trichomonas vaginalis	>4.5	+-	Trichomonas	Motile Trophozoites	EIA DNA Probe

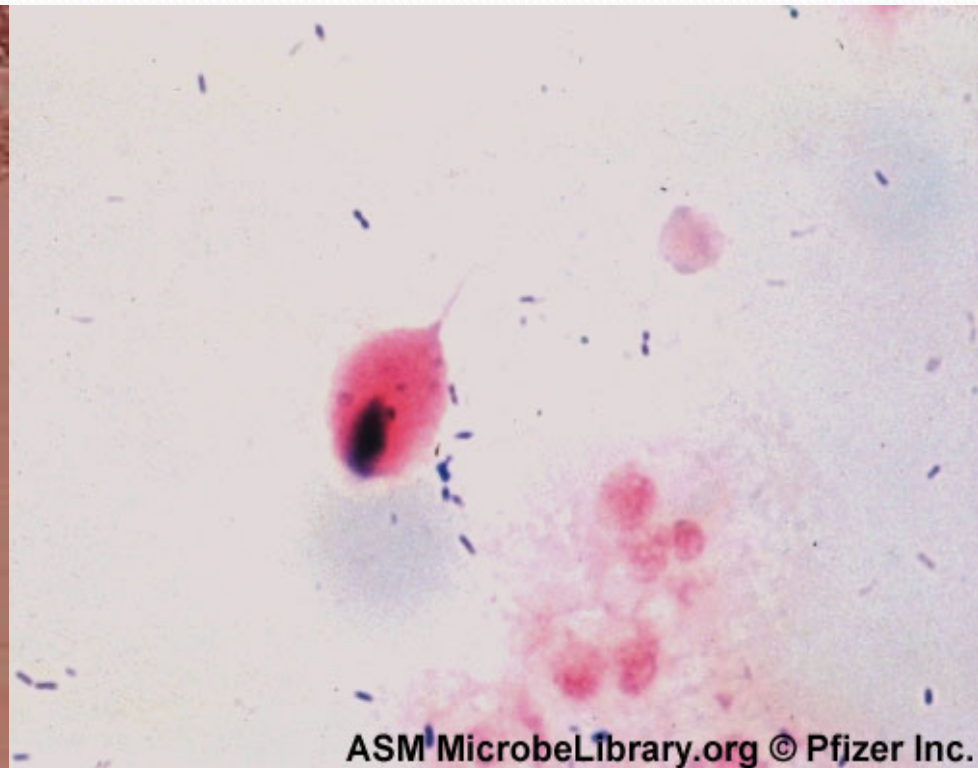
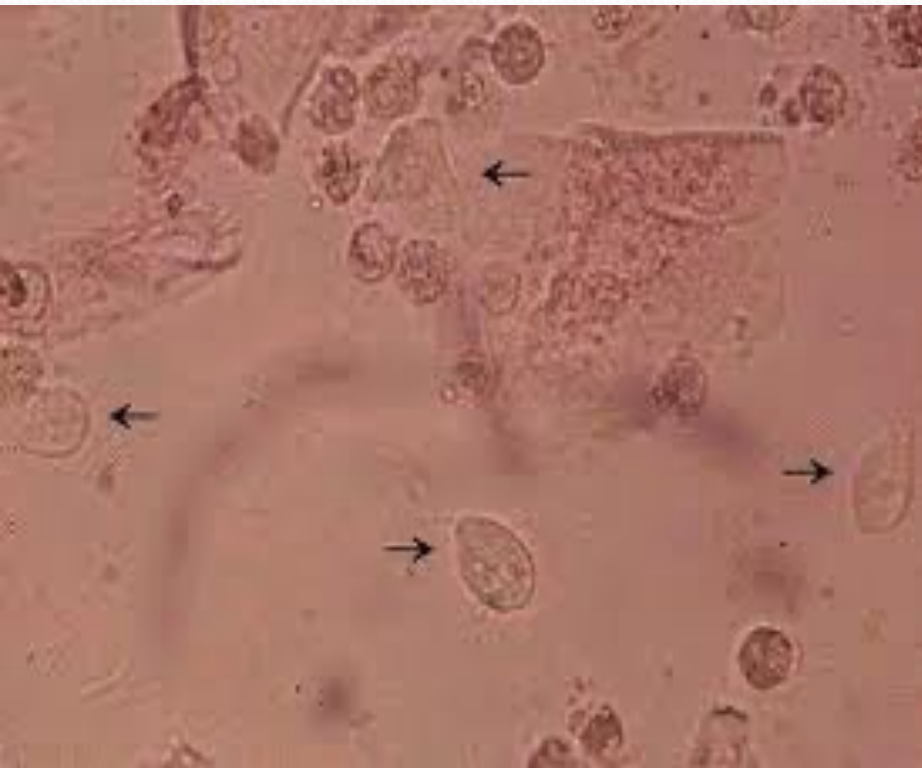
She presented to her family physician for management. On examination there is a bad odor along with a frothy discharge and strawberry cervix.

Swab of the secretions was taken in order to perform tests.

“Strawberry cervix”




# Wet prep/ Gram stain



A wet mount of the swab demonstrates "swimming" Motile Trophozoites .

# *Trichomonas vaginalis*





Base on the finding, what is the most likely diagnosis?  
Briefly outline the management this case?





**What organisms would you screen for in any patient presented with any STD?**

سيأتي اليوم الذي سألبس فيه نقابي  
لن أفنظ من رحمة ربي  
لأنه أرحم بي من حولي  
سأنتظر نعمة ربي بكل شوق و يقين

نقابي نعمة من ربي

