

A patient with urethral / vaginal discharge

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Case study

- A 29 year old female presented experiencing vaginal itching and burning sensations. Later that week, she developed an abnormal vaginal discharge that had an odd odor and was discolored. By the end of the week, she was suffering from painful urination and her urine was cloudy.

- Visual inspection of the cervix showed the following:

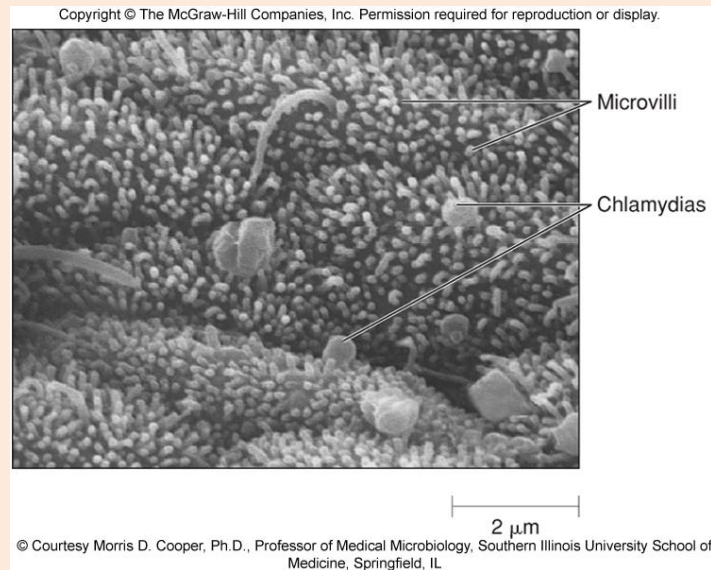


Ix

- The urine culture was negative for UTI
- Negative for *N. gonorrhoeae*.
- The microscopic examination showed no overgrowth of yeast in the vaginal secretions sample.
- The KOH “whiff test” was negative
- Negative for trichomoniasis

Chlamydia.....

- Causes inflammation of the urethra
- Majority are asymptomatic (80% of women)



Chlamydia.....

Symptoms- In men

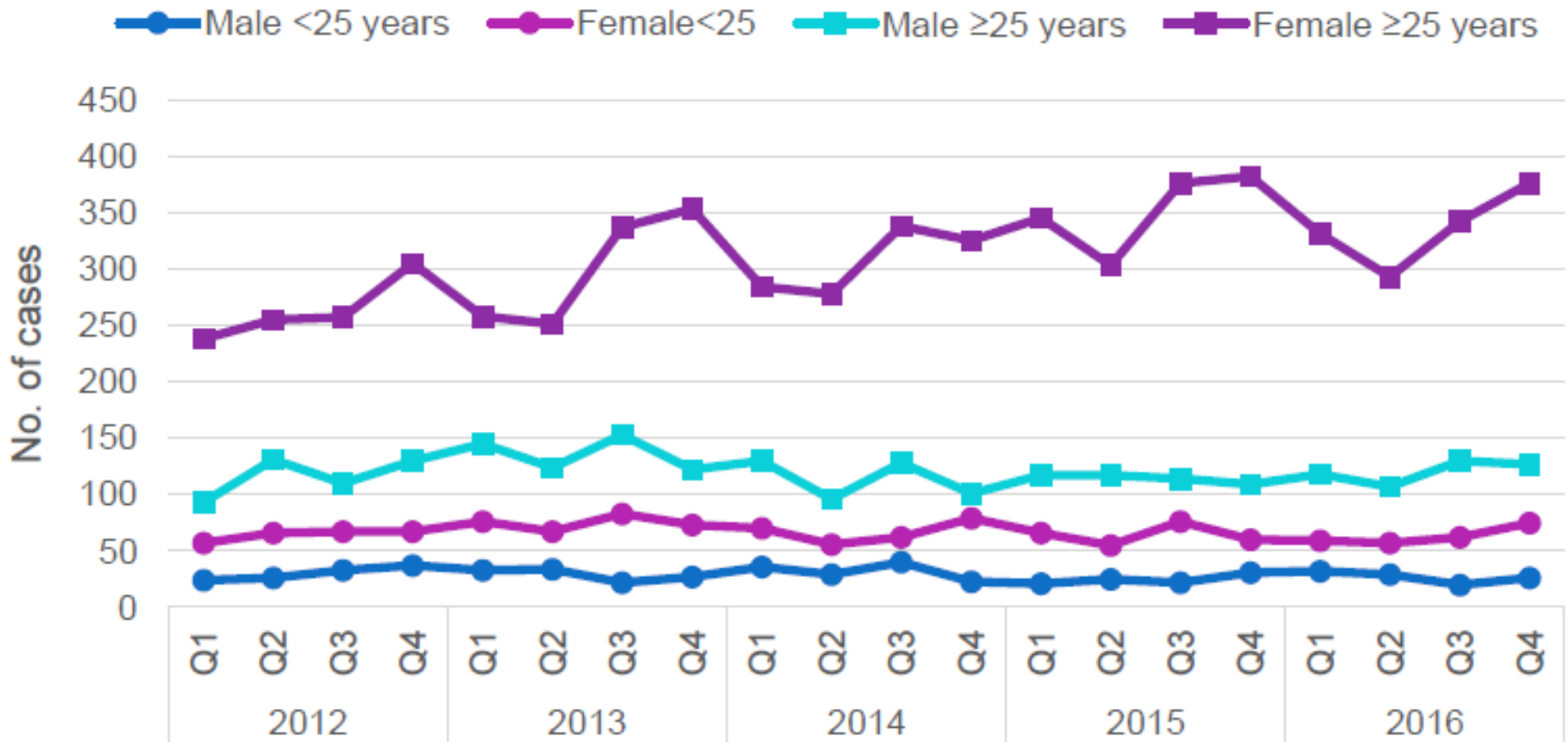
- Thin grayish-white discharge from penis
- Sometimes painful testes

Symptoms - In women

- Increased vaginal discharge
- Often painful urination
- Upper and lower abdominal pain and bleeding



Non-gonococcal infections in all STD clinics, 2012-2016



Chlamydia.....

Diagnosis

- Culture - not widely available
- Non culture tests –

PCR

ELISA

Direct immunofluorescence

Rx

Chlamydia trachomatis

- **Azithromycin** 1 gm single dose

OR

- **Doxycycline** 100 mg twice daily for seven days

(contraindicated in pregnancy)

Chlamydia.....

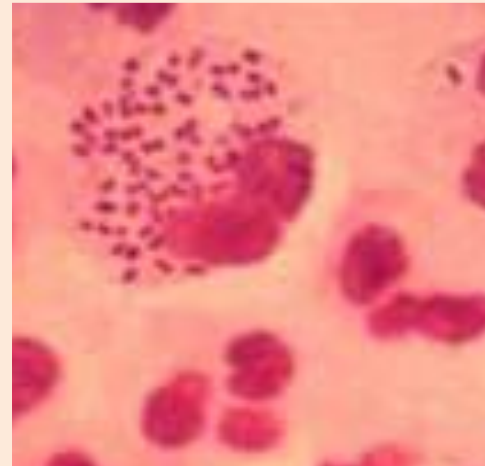
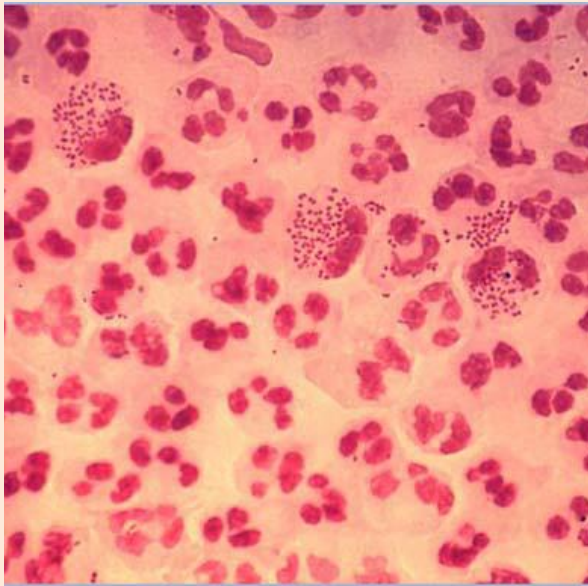
- Cx - 10-40% of untreated chlamydial infections will result in pelvic inflammatory disease

Case study

- **33-year-old** male patient complains of a **purulent acute dysuria** and **urethral discharge** for **three** days.
- Genital examination reveals a **reddened urethral meatus**, with a **purulent discharge**, without lesions or lymphadenopathy.

Results of laboratory tests

- Gram stain -field full PMNs containing intracellular **Gram-negative diplococci**.



Results of laboratory tests

- Urethral culture - growth of **oxidase-positive Gram-negative diplococci**.
- FAT for chlamydia was negative.
- RPR was nonreactive.
- HIV antibody test was negative.

Presumptive diagnosis - gonococcal urethritis

Gonorrhea

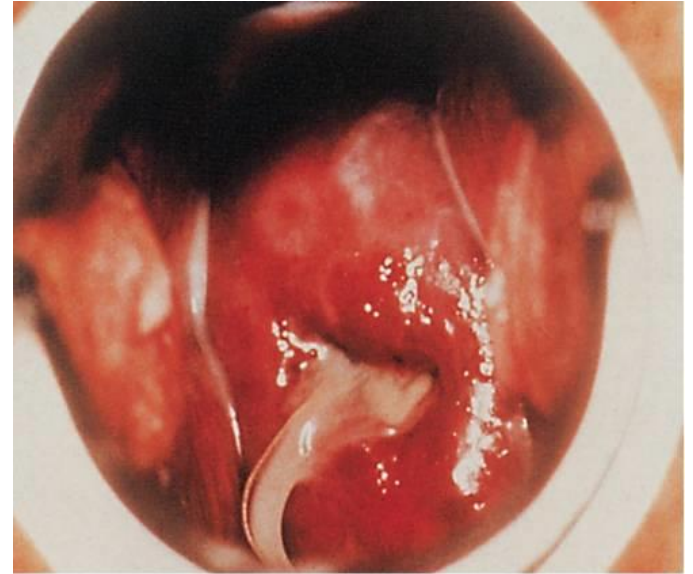
Effects of gonorrhea in men

- Asymptomatic or painful urination
- Purulent urethral discharge
- Scarring can impede urine flow
- Scarring of vas deferens or damage to testes can cause sterility

Neisseria gonorrhoeae

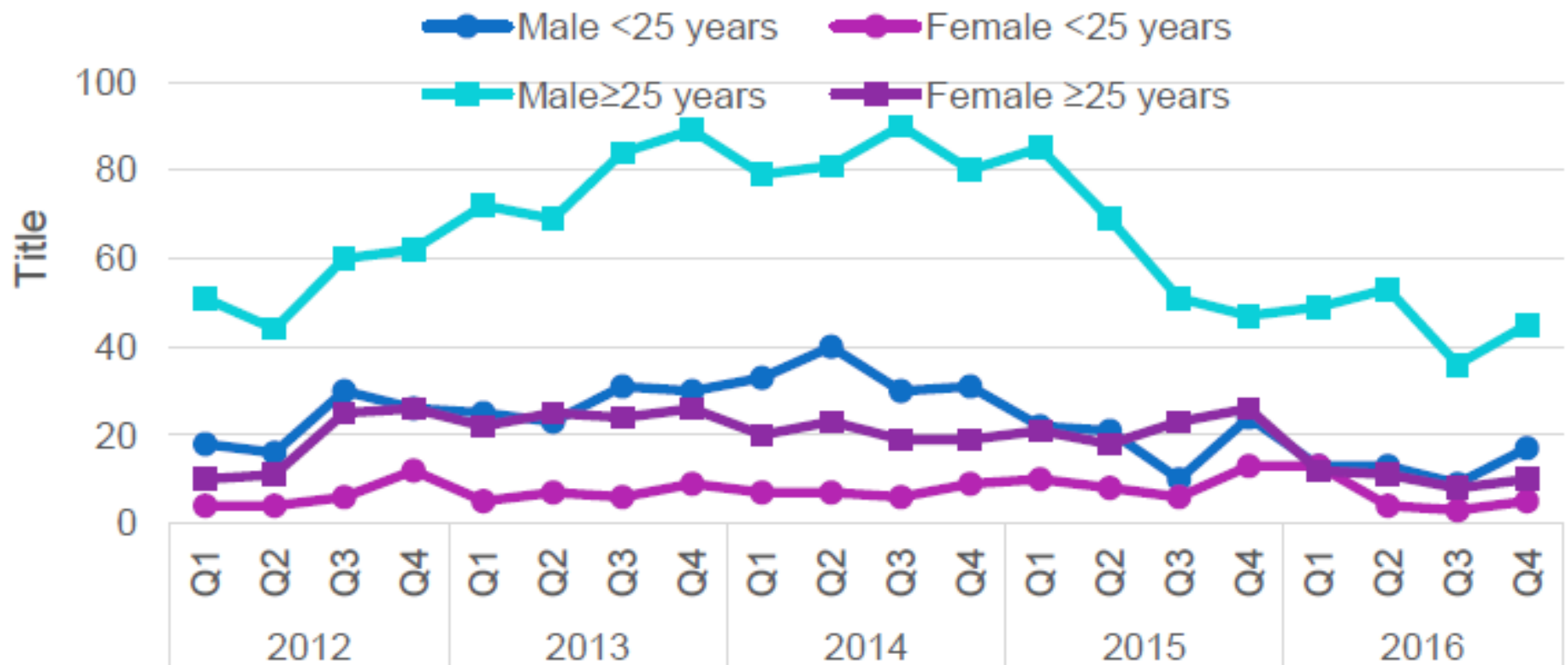
Effects of gonorrhea in women

- Asymptomatic females act as a reservoir
- Present with a purulent vaginal discharge but is asymptomatic in up to 50% of women.
- Gonorrhoea may be complicated by pelvic inflammatory disease.



[From Mehta G, Monahan A, Barnes K, editors: Atlas of sexually transmitted diseases and AIDS. London, 1995, Mosby-Clark.]

Age and sex of gonorrhoea cases from all STD clinics, 2012-2016

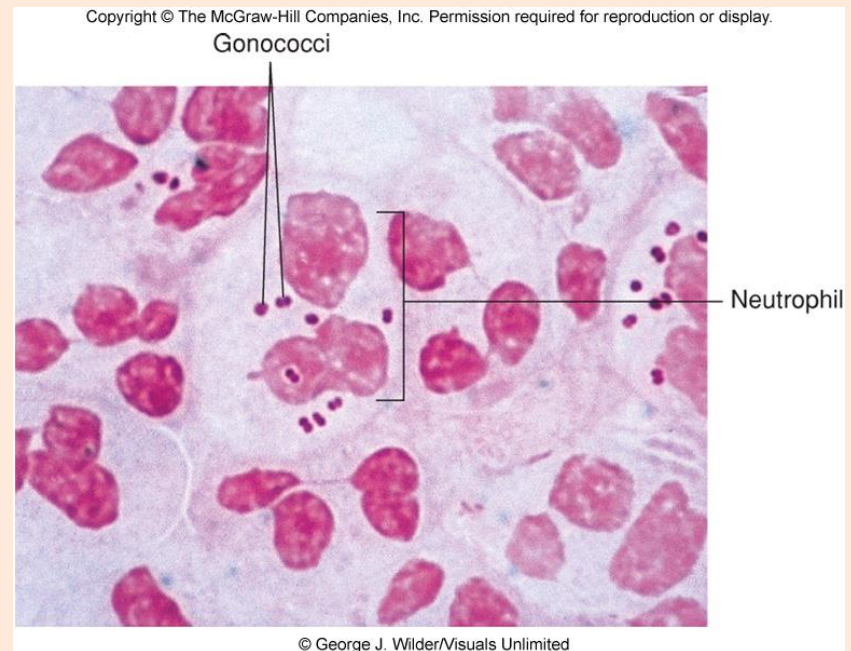


Gonorrhea

Diagnosis

- Urethral discharge

Direct Microscopy



Culture on appropriate media for GC

Rx

Gonorrhoea

- Cefixime 400 mg as a single oral dose

or

ceftriaxone 250 mg intramuscularly as a single dose

for complicated cases (PID, Epididymo-orchitis...)

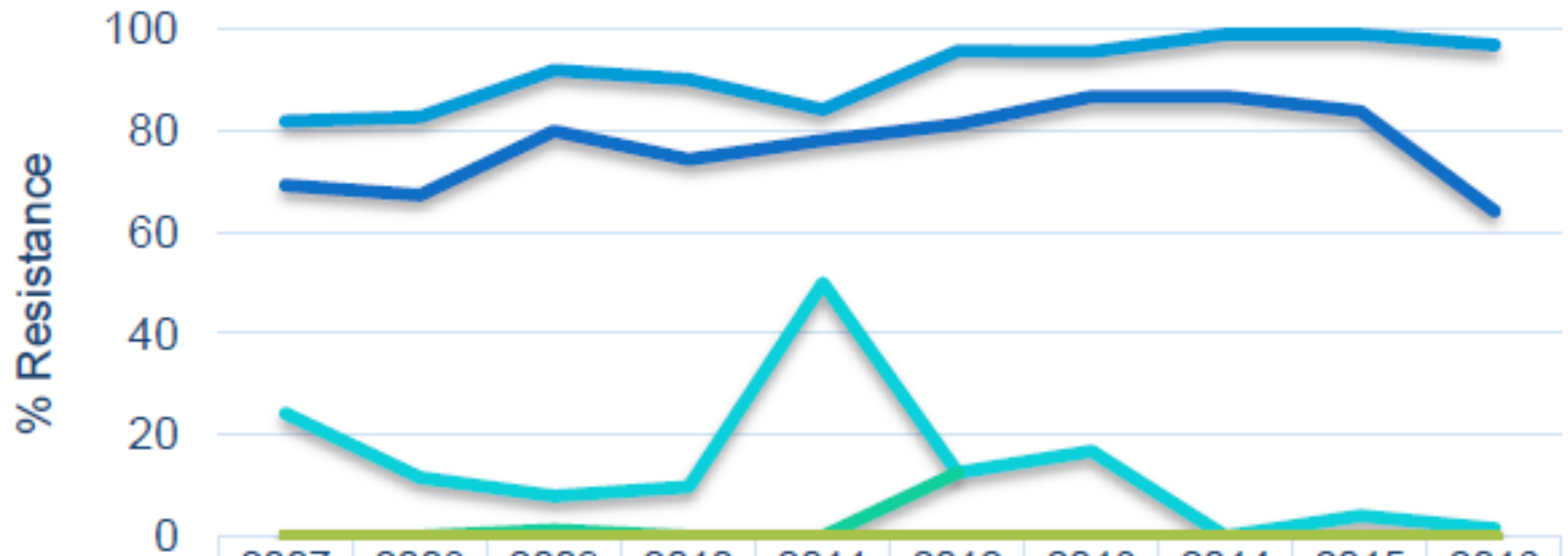
ceftriaxone is the DOC in ophthalmia neonatorum

- Referral to a reference centre is encouraged because of the existence of **resistant strains** of the organism

Percentage of Gonorrhoea Strains Resistant to Antibiotics During 2001 – 2015 in Sri Lanka

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Penicillin	80	67.3	69.3	89.2	89.2	95.1	94.4	86.3	79.2	74.4	78.1	91.6	98.2	86.7	83.8
Ciprofloxacin	6.1	38.9	82.1	92.7	88.7	83	81.9	82.7	92	90.2	86.8	95.8	97.3	99.05	98.9
Cefuroxime	3.4	4.2	0	0	0	0	0	0	1.3	0	0	18.75	-	-	-
Ceftriaxone	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spectinomycin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tetracycline	0	0	0	0	0	0	0	0	0	0	0	12.5			

Gonococcal antibiotic resistance pattern 2007-2016

[illegible]

Gonorrhea-Complications

- Men
 - prostatitis, urethral strictures, and sterility
 - Often seek treatment early so less likely to develop complications

Gonorrhea - Complications


- Women
 - pelvic inflammatory disease (PID), Bartholin's abscess, ectopic pregnancy, and infertility
 - Usually asymptomatic, so seldom seek treatment until complications are present

Partner investigation

What tests should the partner /s have?

Test on cervical secretions.

Genital “discharge” diseases

 CHECKPOINT 23.6 Genital “Discharge” Diseases		
	Gonorrhea	Chlamydia
Causative Organism(s)	<i>Neisseria gonorrhoeae</i>	<i>Chlamydia trachomatis</i>
Most Common Modes of Transmission	Direct contact (STD), also vertical	Direct contact (STD), vertical
Virulence Factors	Fimbrial adhesions, antigenic variation, IgA protease, membrane blebs/endotoxin	Intracellular growth resulting in avoiding immune system and cytokine release, unusual cell wall preventing phagolysosome fusion
Culture/Diagnosis	Gram stain in males, rapid tests (PCR, ELISA) for females, culture on Thayer-Martin agar	PCR or ELISA, can be followed by cell culture
Prevention	Avoid contact; condom use	Avoid contact; condom use
Treatment	Many strains resistant to various antibiotics; local and current guidelines must be consulted	Azithromycin, doxycycline and follow-up to check for reinfection
Distinctive Features	Rare complications include arthritis, meningitis, endocarditis	More commonly asymptomatic than gonorrhea

Case Study

Hx

- 24-year-old female presents with complaints of a smelly, yellow vaginal discharge and mild dysuria for one week. Denies vulvar itching, pelvic pain, or fever. No history of sexually transmitted diseases

Ex

- Speculum exam reveals a moderate amount of frothy, yellowish, malodorous discharge, without visible cervical mucopus or easily induced cervical bleeding . Bimanual examination was normal without uterine or adnexal tenderness

Laboratory Results

- Vaginal pH - 6.0
- Saline wet mount of vaginal secretions -- numerous motile trichomonads and no clue cells
- KOH wet mount -- negative for budding yeast and pseudohyphae

Vaginitis

Usually characterized by

- Vaginal discharge
- Vulvar itching
- Irritation
- Odor

Vaginal discharge

- Many cases of vaginal discharge are not caused by sexually transmitted infections and do not need to be treated
- Common curable sexually transmitted infections can present with symptoms

Causes of vaginal discharge

Non-infective

- Physiological
- Cervical ectopy
- Foreign bodies, such as retained tampon
- Vulval dermatitis

Infective causes for vaginal discharge

Non-sexually transmitted infection

- Bacterial vaginosis
- Candida infections

Sexually transmitted infection

- Chlamydia trachomatis
- Neisseria gonorrhoeae
- Trichomonas vaginalis

Bacterial Vaginosis

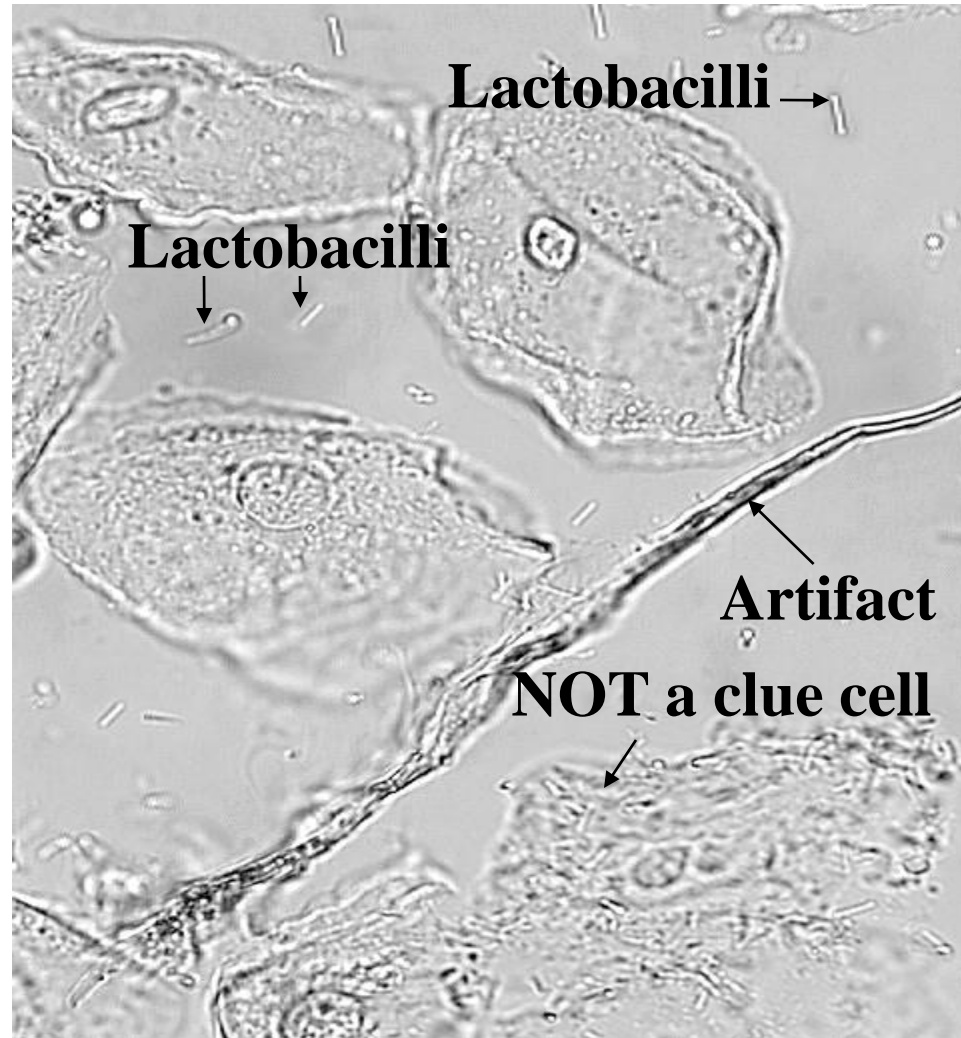
- Pathogenesis
 - Key changes include
 - Decrease in vaginal acidity
 - Change of normal vaginal flora
 - Increased number of sloughed vaginal cells
 - Called “clue cells”
 - Strong odor due to metabolic products produced by vaginal anaerobes

Bacterial vaginosis

- Causes profuse and fishy smelling discharge without itch or soreness
- Characterised by an overgrowth of anaerobic bacteria and occurs and remits spontaneously

Wet Prep: Lactobacilli and Epithelial Cells

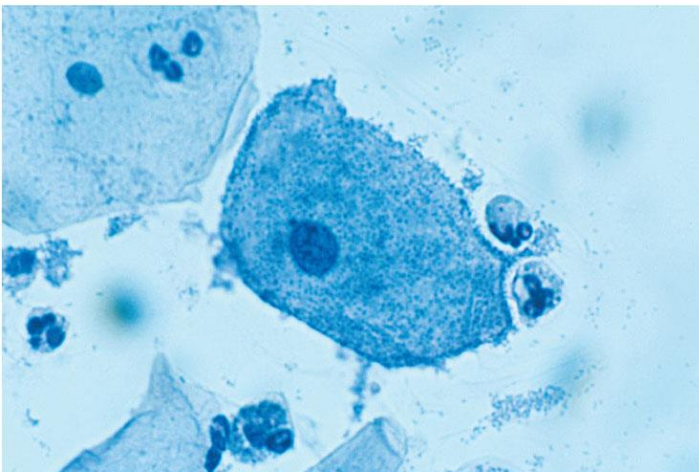
Saline: 40X objective



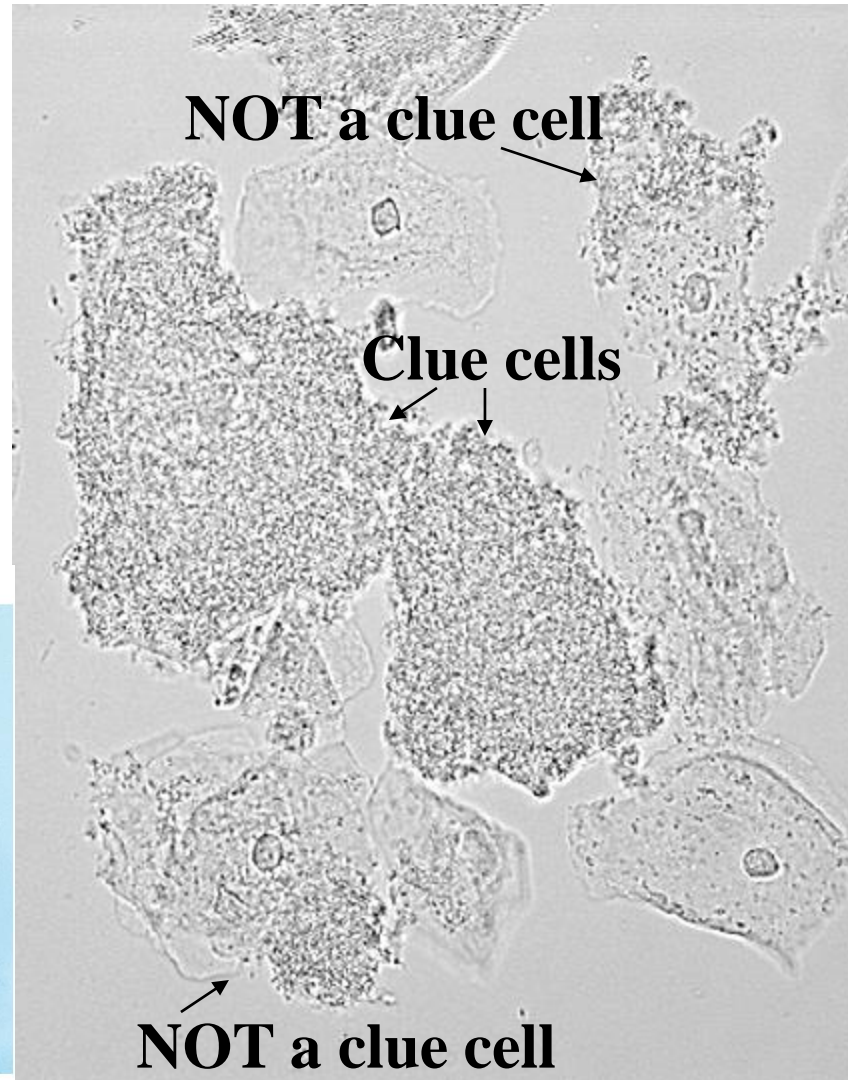
Wet Prep: Bacterial Vaginosis

Saline: 40X objective

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BV Diagnosis: Amsel Criteria

Amsel Criteria:
Must have at least
three of the
following findings:

- Vaginal pH >4.5
- Presence of >20% per HPF of "clue cells" on wet mount examination
- Positive amine or "whiff" test
- Homogeneous, non-viscous, milky-white discharge adherent to the vaginal walls

Management of vaginal infections

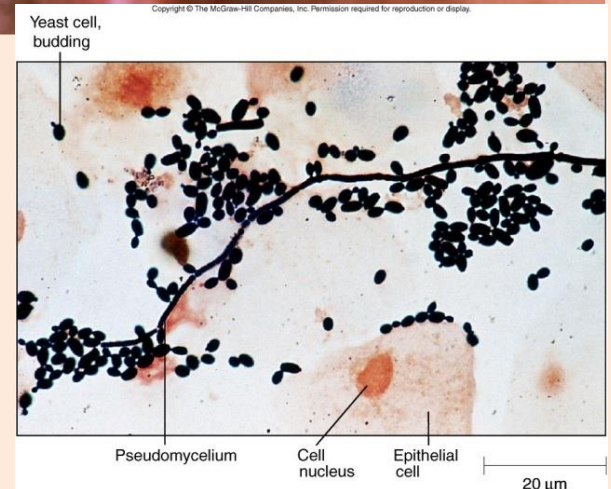
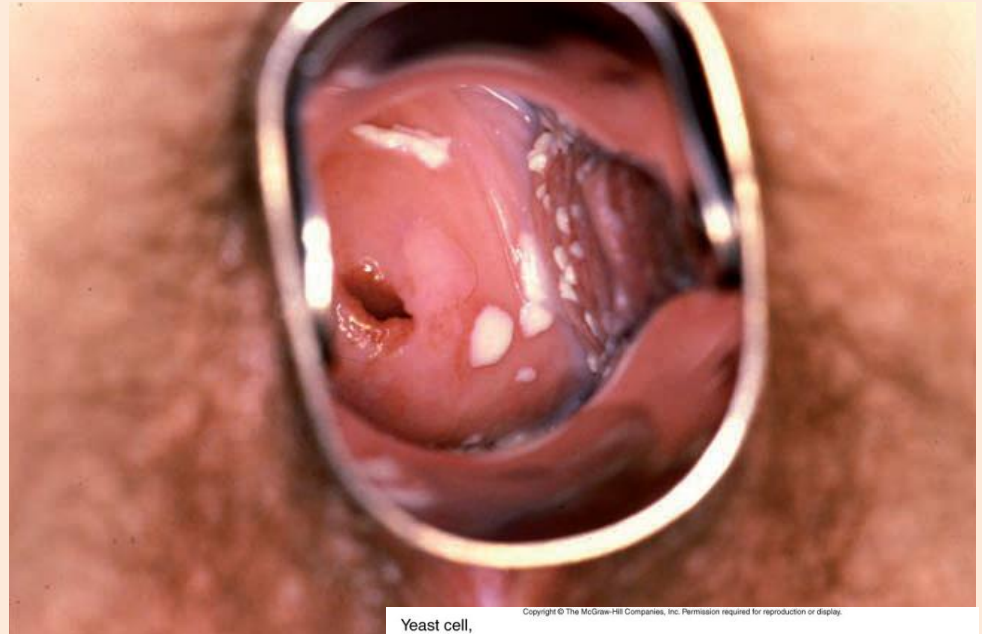
Bacterial vaginosis

Metronidazole 400 mg bd 7 days

Partner notification not needed

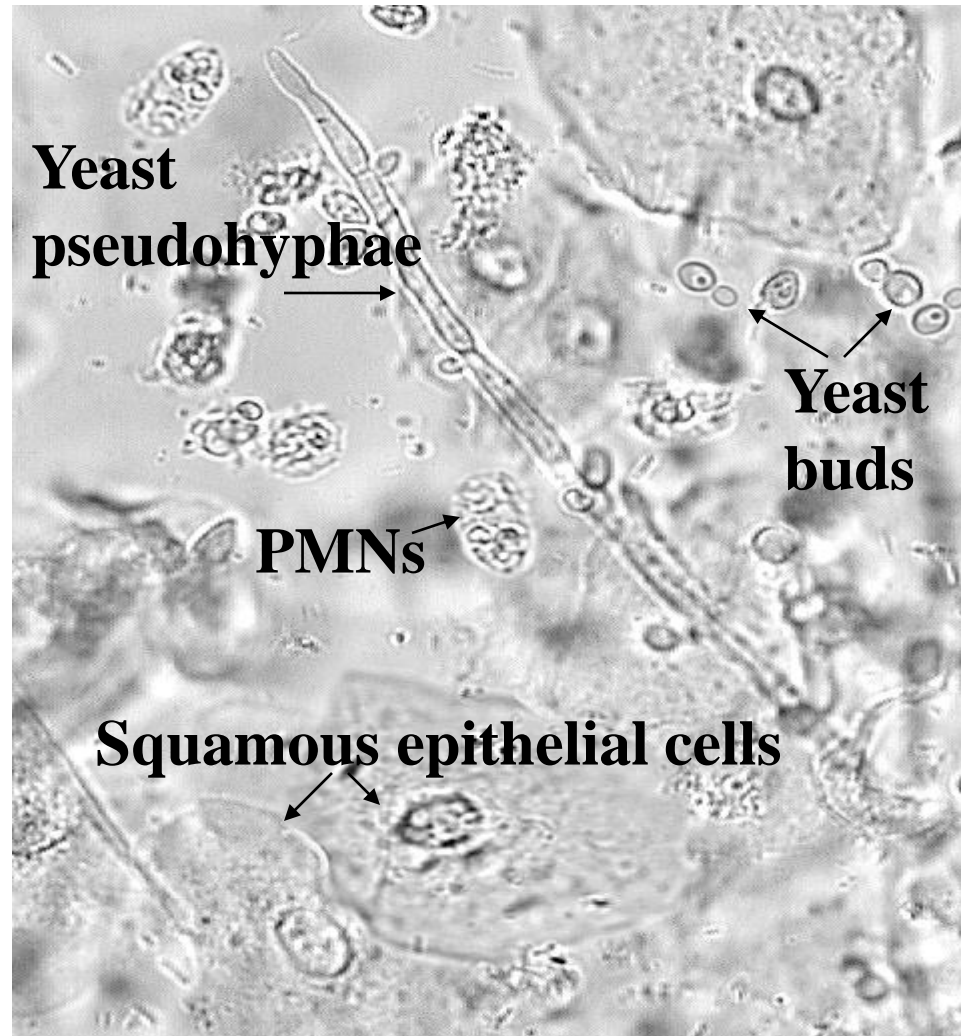
Vulvovaginal candidiasis

- The prevalence of asymptomatic carriage of *Candida* in women is 10%.
- Vulval itch and soreness and thick white non-offensive discharge
- Asymptomatic vulvovaginal candidiasis does not need treatment



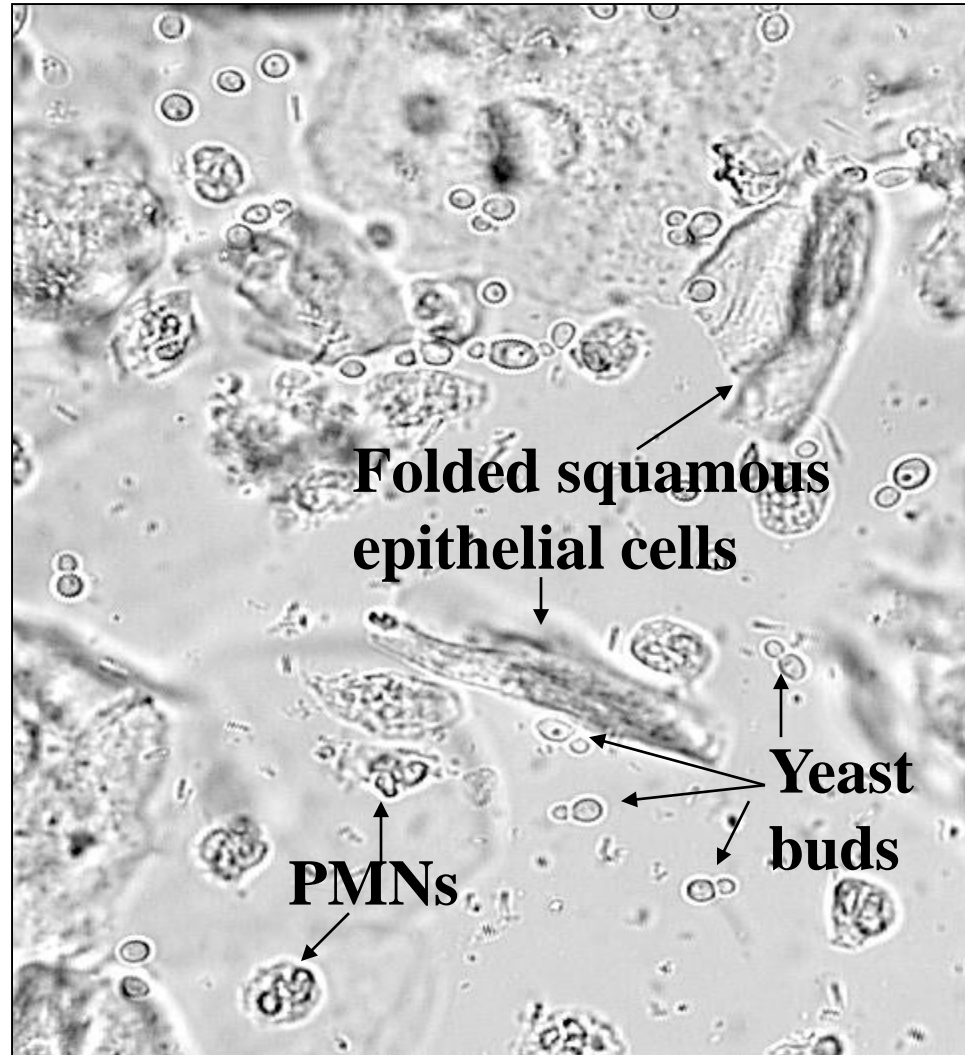
PMNs and Yeast Pseudohyphae

Saline: 40X objective



PMNs and Yeast Buds

Saline: 40X objective

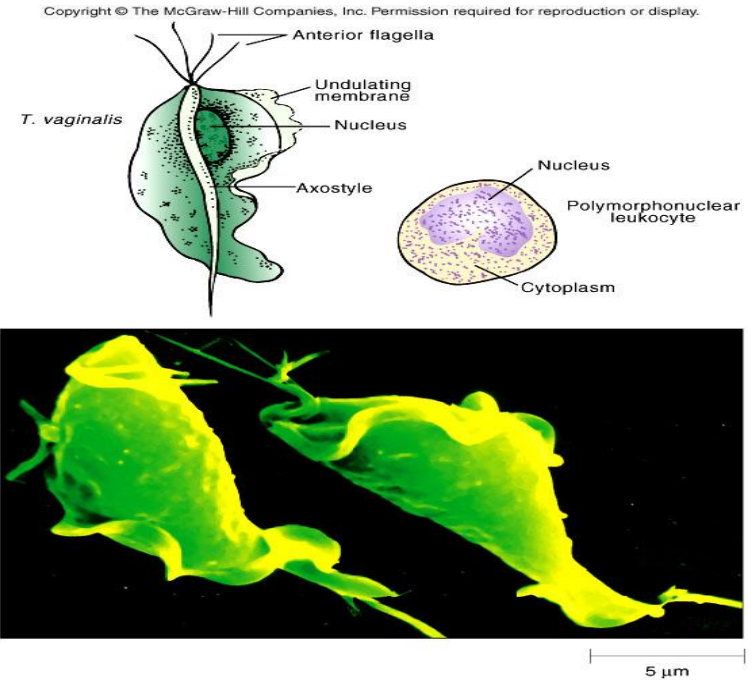


Vulvovaginal candidiasis

- Fluconazole 150mg stat oral
- or
- Vaginal imidazole preparations (eg: clotrimazole)
- or
- Nystatin vaginal

Trichomoniasis

- Causative agent
 - *Trichomonas vaginalis*
 - Flagellated protozoan
 - Diagnosed via jerky motility on microscopic examination

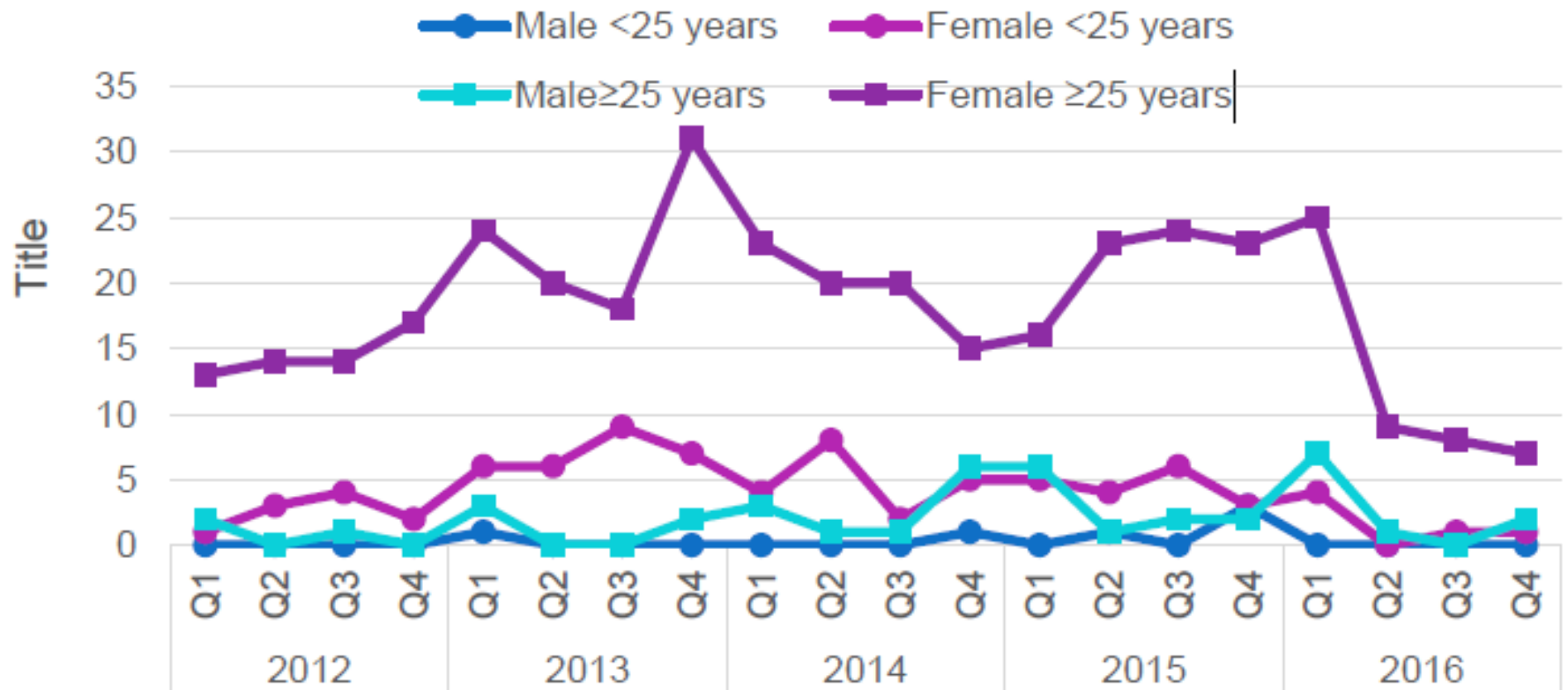


Trichomonas vaginalis

- Symptoms
 - Women most symptomatic
 - Characterized by
 - itching of vulva and inner thighs
 - Itching and burning of the vagina
 - Frothy, malodorous yellowish-green vaginal discharge
 - Most infected men are asymptomatic
 - Some may have penile discharge, pain on urination, painful testes or tender prostate

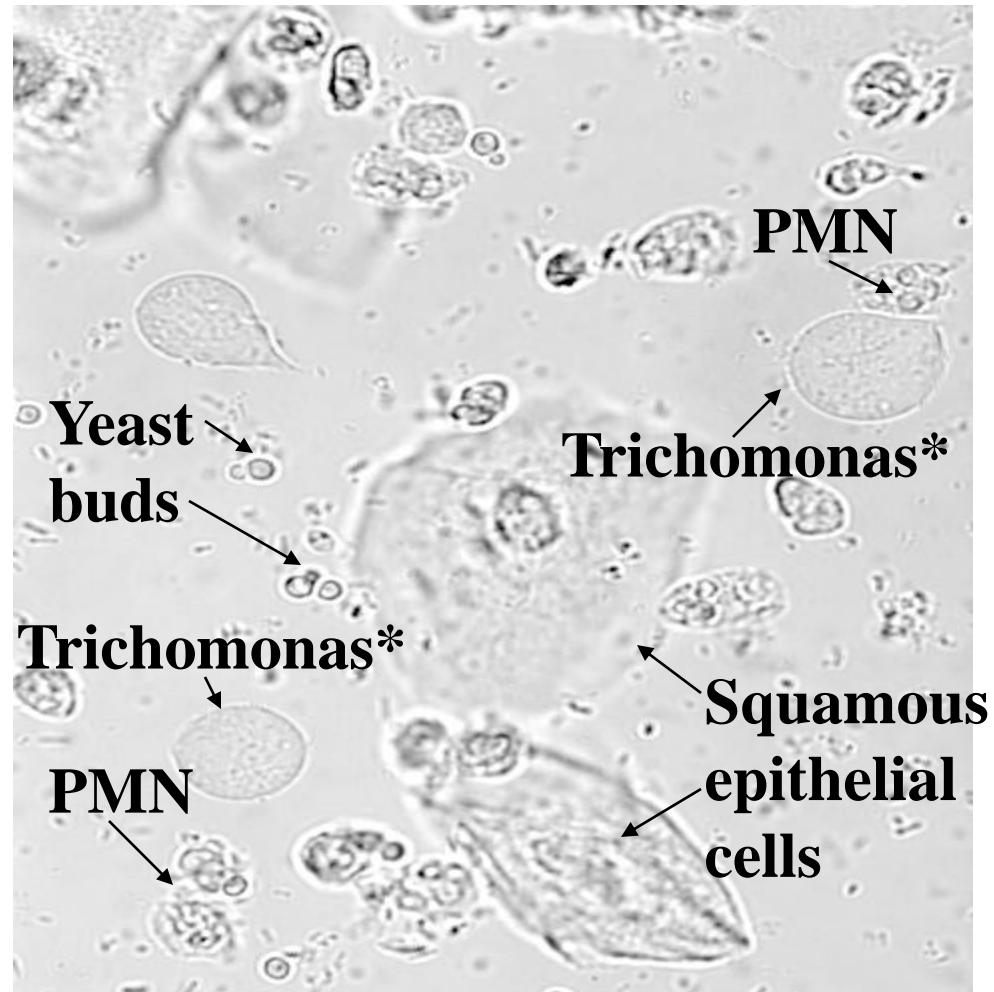


Trichomoniasis cases from all STD clinics, 2012-2016



Wet Prep: Trichomoniasis

Saline: 40X objective



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

Trichomonas vaginalis

- Metronidazole 400 bd for 7 days

Differentiation

	Normal	Bacterial Vaginosis	Candidiasis	Trichomoniasis
Symptom presentation		Odor, discharge, itch	Itch, discomfort, dysuria, thick discharge	Itch, discharge, ~70% asymptomatic
Vaginal discharge	Clear to white	Homogenous, adherent, thin, milky white; malodorous "foul fishy"	Thick, clumpy, white "cottage cheese"	Frothy, gray or yellow-green; malodorous
Clinical findings			Inflammation and erythema	Cervical petechiae "strawberry cervix"
Vaginal pH	3.8 - 4.2	> 4.5	Usually ≤ 4.5	> 4.5
KOH "whiff" test	Negative	Positive	Negative	Often positive
NaCl wet mount	Lacto-bacilli	Clue cells ($\geq 20\%$), no/few WBCs	Few to many WBCs	Motile flagellated protozoa, many WBCs
KOH wet mount			Pseudohyphae or spores if non- <i>albicans</i> species	

Triple swabs – diagnosis of genital discharges

- High vaginal swab to identify bacterial vaginosis, Candida infections, and Trichomonas vaginalis
- Endocervical swab in transport medium (charcoal or non-charcoal) to diagnose gonorrhoea
- Endocervical swab to diagnose Chlamydia trachomatis

Diagnoses from all STD clinics in Sri Lanka, 2015	Male	Female	Total	% of Total
Infectious syphilis	125	55	180	0.95
Late syphilis	613	342	955	5.03
Congenital syphilis	7	7	14	0.07
Gonorrhoea	329	125	454	2.39
Ophthalmia neonatorum	2	1	3	0.01
Non specific cervicitis/urethritis	556	1663	2219	11.69
Chlamydial Infection	35	31	66	0.36
Genital Herpes	1218	1727	2945	15.51
Genital warts	1147	858	2005	10.56
Chancroid	2	1	3	0.01
Trichomoniasis	15	104	119	0.63
Candidiasis	971	1618	2589	13.64
Bacterial vaginosis	-	1426	1426	7.52
Other sexually transmitted diseases	466	192	658	3.47
Non-Venereal	3380	1963	5343	28.16