5 – 5:45 pm

Case Studies in Vaginitis

SPEAKER
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Presenter Disclosure Information

The following relationships exist related to this presentation:

- Martin A. Quan, MD: No financial relationships to disclose.

Off-Label/Investigational Discussion

- In accordance with pmiCME policy, faculty have been asked to disclose discussion of unlabeled or unapproved use(s) of drugs or devices during the course of their presentations.

Vaginitis: Diagnosis and Management

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Vaginitis

- one of the most common gynecologic disorders
- 10 million office visits/ year and 7 % visits to gynecologists
- 1 % antibiotics prescribed in ambulatory setting

Vaginitis: Differential Diagnosis

- Infectious vaginitis- 60 %
  - Bacterial vaginosis
  - Candida vaginitis
  - Trichomonas vaginitis
- Cervicitis- 20%
- Normal discharge- 10%
- Atrophic vaginitis

Differential Diagnosis (con't)

- Psychosomatic vaginitis
- Iatrogenic vaginitis
  - Foreign body vaginitis
  - Allergic / irritant vaginitis
- Miscellaneous
  - Cervical polyps/ neoplasms
  - Vulvar and vaginal neoplasms
  - Macerated condylomata

Useful historical items

- age
- menstrual status
- characteristics:
  - onset
  - color
  - consistency
  - viscosity

Associated symptoms

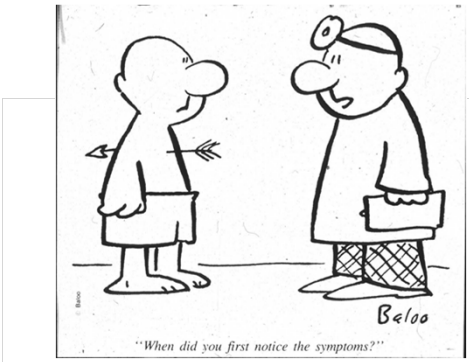
- pruritis
- burning
- malodor
- dysuria
- dyspareunia

Historical items

- Past medical history
  - diabetes
  - recent infection
  - medications
  - method of contraception
- Sexual history
- Hygienic practices

Physical examination

- careful gynecologic exam
- inspection of discharge
- close examination of vulvovaginal area
- careful inspection of cervix



Office Laboratory Methods

- vaginal pool wet mount
  - saline prep (0.9 % saline)
  - KOH prep (10%)
- "whiff" test: (+) in BV
- vaginal pH: normal 3.5 to 4.5
- "Q-tip" test: (+) in cervicitis

Office Laboratory (con't)

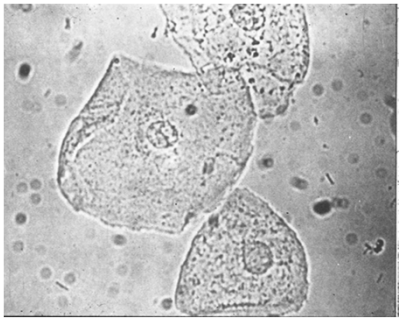
- vaginal cultures- used on selective basis
  - Trichomonas:
    - modified Diamond's, Trichosel, InPouchTV
  - Candida:
    - Sabouraud's, Nickerson's media

Case # 1:

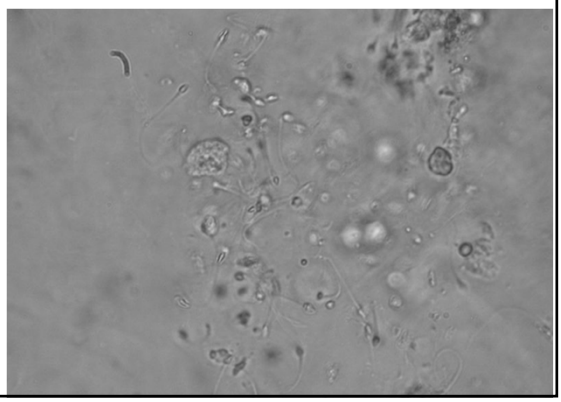
A 17 y/o female HS student presents with a one day history of an increase in vaginal discharge-- slightly sticky & cloudy-- associated with mild soreness. Denies itching, burning, or malodor. Microscopic examination of the saline slide prep shows:

Wet mount:

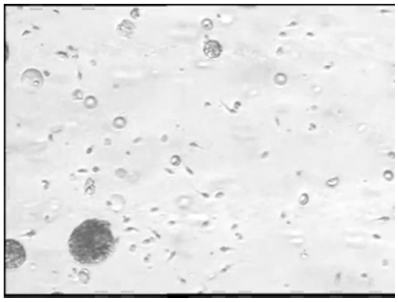
Vaginal epithelial cells



Vaginal pool wet mount



Vaginal pool wet mount



Case # 1

A 17 y/o female HS student presents with a 1 day history of a vaginal discharge-- slightly sticky & cloudy-- associated with mild soreness. Denies itching, burning, or malodor. Microscopic exam .....

"Whiff test"- neg. Vaginal pH- 6.0

Physiologic discharge

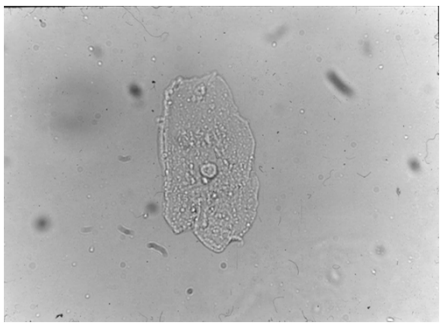
- responsible for 10 percent of cases of vaginal discharge
- composed of vaginal squamous cells suspended in fluid medium
- clinical characteristics:
  - clear to slightly cloudy
  - non-homogeneous
  - highly viscous

Normal vaginal discharge

- not associated with:
  - itching
  - burning
  - malodor
- normal increase in volume
  - ovulation
  - following coitus
  - after menses
  - during pregnancy

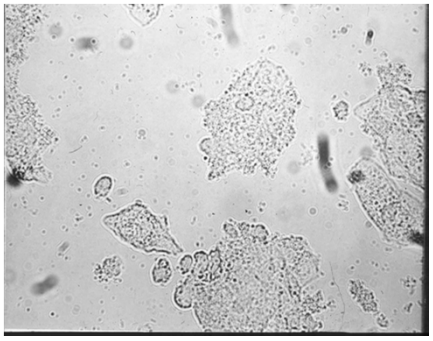
Wet mount:

Normal vaginal epithelial cell



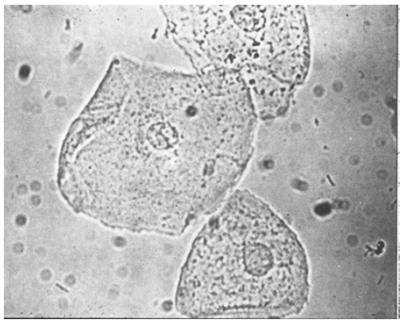
Wet mount:

Clue cells



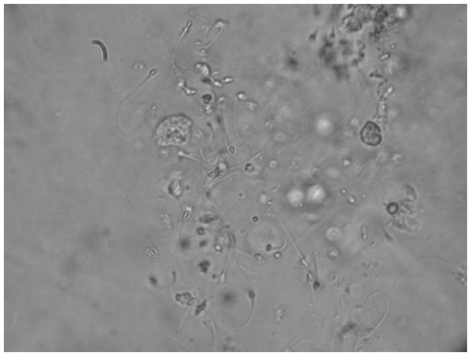
Wet mount:

Normal epithelial cells

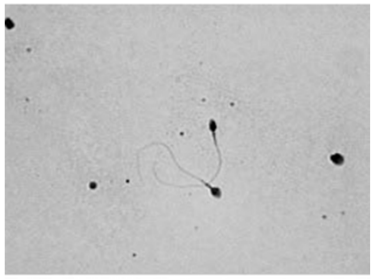


Vaginal pool wet mount:

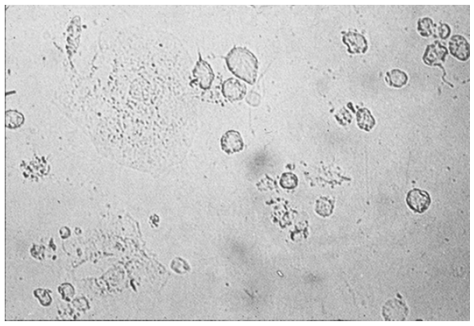
Sperm



Vaginal pool wet mount:
sperm



Wet mount:
Trichomonads



Vaginal pH

- normal: pH of 3.5 to 4.5
- pH over 4.5 is abnormal:
  - 81 to 97 % of bacterial vaginosis
  - 60 % of Trichomonas vaginitis
- invalid if specimen contaminated with semen, blood, douche preps, cervical secretions
- obtain from lateral fornix

Case # 2:

28 y/o female grad student is seen for a 5-day history of a thin greyish-white discharge associated with vaginal burning and a fishy odor.....

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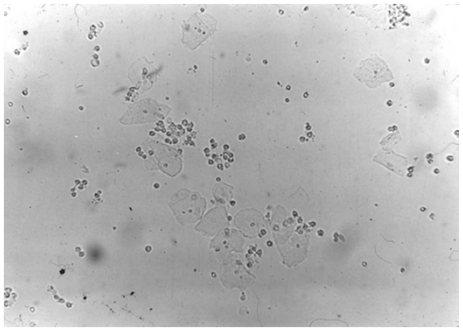
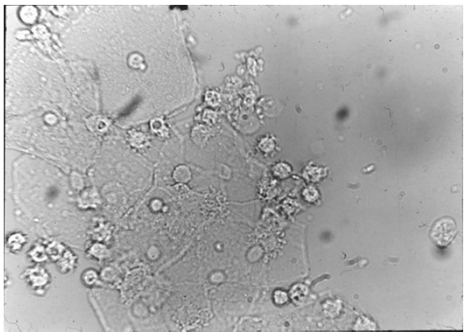
28 y/o female grad student is seen for a 5-day history of a thin greyish-white discharge associated with vaginal burning and a fishy odor. A scan of the saline prep under low power shows:

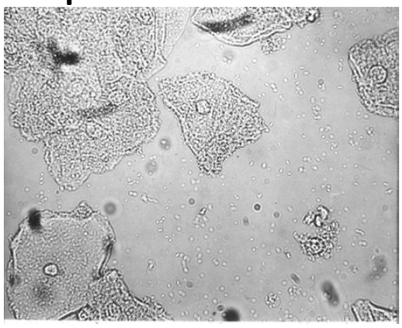
Wet mount (low power):



Wet mount (high power):



Wet mount:
Vaginal epithelial cells



Case # 2:

28 y/o female grad student is seen for a 5-day history of a thin, greyish-white vaginal discharge associated with vaginal burning and a fishy odor. Microscopic exam .....

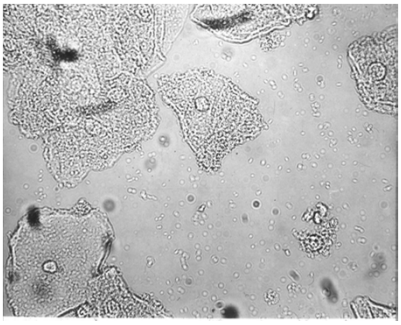
Whiff test: (+) . Vaginal pH: 5.5

Bacterial vaginosis

Diagnostic criteria (requires 3 of the 4):

- 1. thin, homogeneous discharge
- 2. vaginal pH over 4.5
- 3. positive "whiff" test
- 4. clue cells on wet mount

Wet mount:
Clue cells



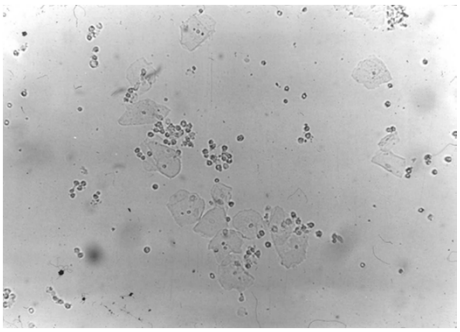
Vaginal pool wet mount

Increased number of white cells:

- > 10 wbc/hpf
- > 1 wbc per epithelial cell
- increase in cervicitis, trichomonas
- variable in candida
- reduced number in B. vaginosis

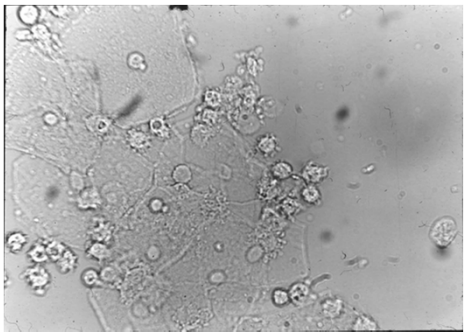
Wet mount:

Increased number of white cells



Wet mount:

Increased number of white cells



Vaginal pool wet mount

Increased number of white cells:

- **> 10 wbc/hpf**
- **> 1 wbc per epithelial cell**
- **increase in cervicitis, trichomonas**
- **variable in candida**
- **reduced number in B. vaginosis**

Mgmt of Bacterial vaginosis

- **Metronidazole- 1st generation nitroimidazole regarded by many as "drug of choice"**
- **500 mg BID x 7 days still "gold standard" (Phieffer, NEJM 1978)**

Mgmt of Bacterial vaginosis

ORAL:

- **clindamycin 300 mg BID x 7 days**

TOPICAL:

- **vaginal metronidazole gel 0.75%: 1 applicatorful qd or bid x 5 d**
- **vaginal clindamycin cream 2%: 5 g q d x 7 d**
- **vaginal clindamycin ovules: 100 mg qhs x 3 days**

Mgmt of Bacterial vaginosis
Worst-case efficacy

DOSE	relapse after 4 wk
Metronidazole 500 mg BID x 7 d	20 %
Metronidazole 2 g x 1 dose	50 %
Metronidazole vaginal gel	34 %
Clindamycin vaginal cream	42 %
Clindamycin vaginal ovules	49 %

Koumens et al, Clin Infect Dis 2002;35 (suppl 2):S152

Mgmt of Bacterial vaginosis

Tinidazole (2nd generation)

- FDA approval in 2007 for treatment of BV
- 2 grams (4 tabs) once daily x 2 d* or 1 gram (2 tabs) once daily x 5 d

* 2010 STD Guidelines rec. 3 days

Mgmt of male in B. vaginosis

- No benefit:
  - Eschenbach, Scand J Inf Dis 1983
  - Swedberg, JAMA 1985
  - Vejtorp, Brit J Ob Gyn 1988
  - Moi, Genitourin Med 1989
  - Vutyavanich, Ob Gyn 1993
  - Colli, Genitourin Med 1997
- Benefit:
  - Mengel, J Fam Pract 1989

Mgmt of Recurrent B.V.
(Sobel et al, Am J Ob Gyn 2006;194:1283)

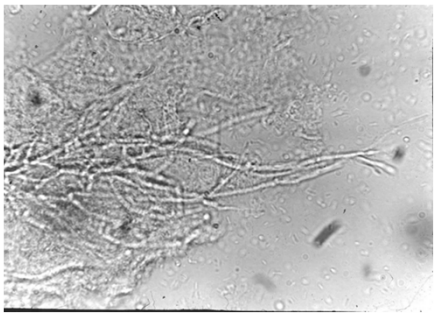
Prospective RCT of 112 women with recurrent BV following 10-day course of metronidazole gel

- 0.75% metronidazole gel BIW vs placebo x 16 weeks with 12-week post-Rx F/U
- RR = 0.43 (CI = 0.25-0.73) during Rx
- RR = 0.70 at end of 28 wk study period
- Adverse side effect: Candida vaginitis

Case # 3

A 34 years old female is seen for a one week history of a itchy, white, curd-like discharge. She notes that one week prior she was treated for a UTI with ciprofloxacin.

KOH prep: Pseudohyphae



Mgmt: Topical imidazole agents

- single-day regimens:
  - clotrimazole 500 mg vaginal tab
  - tioconazole 3%- 300 mg/d x 1 d
- 3-day regimens:
  - butoconazole 2%: 120 mg/d x 3 d
  - clotrimazole 1%: 200 mg/d x 3 d
- 7-day regimens:
  - miconazole 2%- 100 mg/d x 7 d
  - clotrimazole 1%- 100 mg/d x 7 d

Mgmt of Candida vaginitis

- Polyene antifungal agent:
  - nystatin 100,000 units/d x 7 to 14 d
- Triazole antifungal agents
  - vaginal terconazole (Terazol®)
    cream 0.4%- 20 mg/d x 7 d
    cream 0.8%- 40 mg/d x 3 d
    suppository- 80 mg/d x 3 d
  - oral fluconazole (Diflucan®)
    single dose 150 mg. MR in 72 hrs

Mgmt of Recurrent Candida

- identify predisposing factors
  - diabetes, antibiotics, medications, candida in partner, HIV infection
- fungal cultures

Mgmt of Recurrent C. albicans

Options from 2010 CDC Guidelines

Extended course of therapy

- Topical therapy for 7 to 14 days
- Fluconazole 100-200 mg PO on days 1, 4, and 7

Maintenance 6 mo regimens:

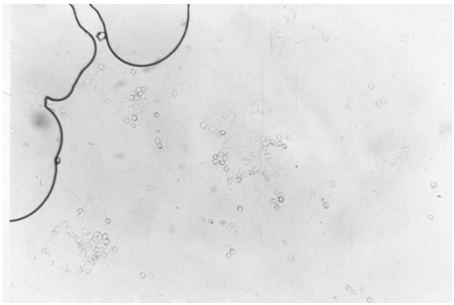
- Fluconazole 100-150 mg PO q week*
- Clotrimazole 500 mg vaginal suppository q week
- Topical clotrimazole 200 mg BIW

* preferred

Case #4

A 44 years old nurse is seen for a 2 mo hx of recurrent "yeast" infections. She reports that despite treatment with several OTC as well as prescription yeast meds, her infection continues to recur. Her 10% KOH prep shows only:

KOH prep:



Vaginal pool wet mount

KOH prep: "budding spores and the absence of pseudohyphae"

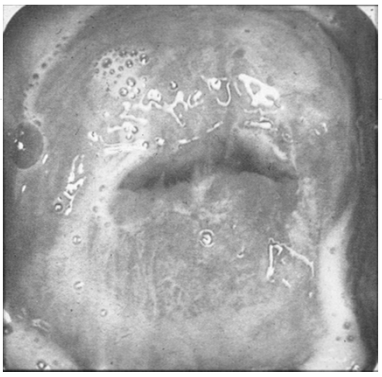
- Candida glabrata
- Saccharomyces cerevisiae

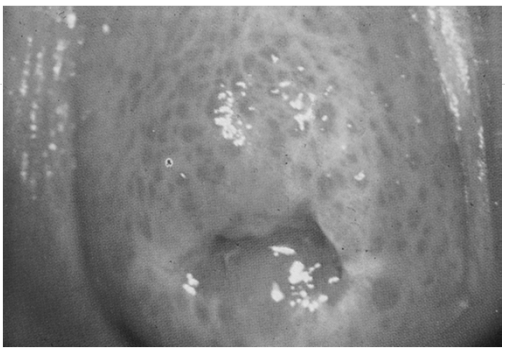
Mgmt of Candida glabrata

- Topical imidazole agent x 7-14 days
- Topical nystatin x 7-14 days
- Boric acid vaginal capsules 600 mg vaginal q d x 7-14 d

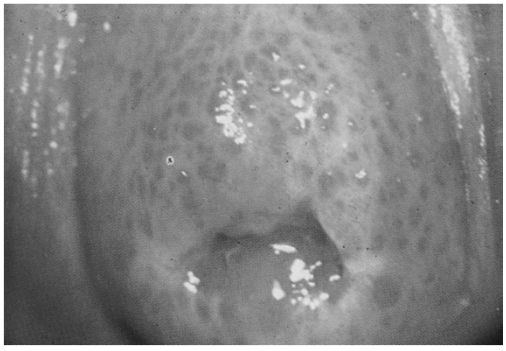
Case # 5

28 year old housewife is seen by you for a one week history of a frothy, greenish, malodorous vaginal discharge. She also complains of dyspareunia and vaginal irritation. Vaginal pH is 6.5 and the "whiff" test is positive. Examination of cervix:





"Strawberry" cervix

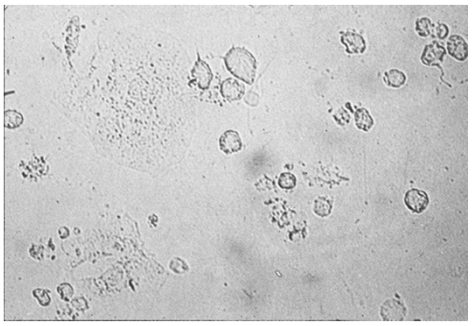


Vaginal pool wet mount

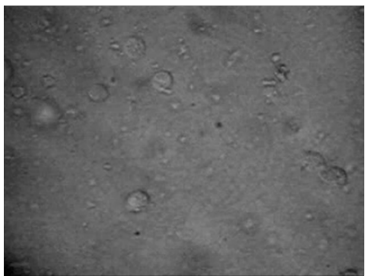
Trichomonas vaginalis:

- motile trichomonads: 49 to 70 %
- pear-shaped, larger than WBC
- examine immediately, use fresh saline
- round up when inactive or die

Wet mount:
Trichomonads



Wet mount:
Trichomonads



Diagnosis of Trichomonas

- Definitive diagnosis:
  - trichomonads on wet mount
  - OSOM Trichomonas Rapid Test
  - culture: Diamond's, InPouch TV, Trichosel
  - nucleic acid tests
    - Affirm III
    - PCR: APTIMA®

Mgmt of Trichomoniasis

- Metronidazole- 1st generation nitroimidazole long regarded as "treatment of choice"
- Two regimens prescribed:
  - 2 grams as single dose
  - 500 mg BID x 7 days
- Single dose regimen preferred

Mgmt of Trichomoniasis
Alternative to Metronidazole

- Tinidazole ("Tindamax®")
- FDA approval 5/04
- antiprotozoal agent (nitroimidazole)
- dose: 2 grams as single dose with food
- longer half-life
- less GI side effects

Mgmt of Trichomonas vaginitis

- adverse reactions: side effects including antabuse reaction (24 hr for metronidazole, 72 hr for tinidazole)
- use during pregnancy
- use in patient who is breastfeeding
- Trichomonas is a STD requiring STD measures

Mgmt of Trichomonas

STD measures:

- partner(s) require Rx
- evaluation for other STDs
- counseling re HIV testing and need for safer sexual practices

Case # 6

42 years old married female attorney is seen by you for her annual physical examination. Pap smear reveals evidence for trichomonas. Her husband (of 10 years) is also a patient of yours and both he and the patient adamantly deny any instance of infidelity.

Trichomonas on Pap smear

- sensitivity: 60 percent
- specificity: 92 percent (standard Pap); 96 percent (liquid-based)
- Bayes theorem

PREVALENCE

20 %-	1 in 2 is false (+)
1 % -	19 in 20 is false (+)
	(9 in 10 if liquid-based*)

Trichomonas on Pap smear

- sexual transmission
  - recent acquisition
  - remote acquisition (dormant)
- non-venereal transmission ?
  - ? rare
  - isolation from fomites (i.e. toilet seat)

Vaginitis: Meeting the Clinical Challenge

- common gynecologic problem
- key to management is accurate diagnosis
  - history and examination
  - office lab: wet mount, pH, "whiff test", Q-tip test
- specific dx allows for effective Rx