Vulvovaginal Infections, Cervicitis and Bartholin's Cyst

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Objective

Approach the etiology of vulvovaginal infections vaginitis and cervicitis in age dependent fashion to help accurate diagnosis and treatment.

Vulvovaginal Anatomy

Insert image of vulvovaginal anatomy here

Age Groups

- Premenarche
- Childbearing age
- Postmenopausal

Vulvovaginitis in Premenarche

Vulvovaginitis in Premenarche

- Site:
  - Usually vulvar with extension to lower vagina.
- Frequency:
  - The most common gynecologic problem affecting prepubertal girls.

Predisposing factors:

- Lack of the protective effects of estrogen.
- Relative lack of lactobacilli.
- Immature antibody response.
- Lack of an acidic pH (typical pH being 6-7.5.
- Variations in the configuration and location of the hymen.
- Often poor perineal hygiene.

Etiology

- Mostly nonspecific with negative cultures or mixed flora.
- Gonorrhea/Chlamydia – **Sexual Abuse.**
- Foreign Body.
- Chemical irritation.
- Pin worm infestation.
- Group A Beta Hemolytic Strep.

History

- Asymptomatic vaginal discharge months prior to menarche – physiologic.
- Bloody and foul-smelling discharge – possible vaginal foreign body.
- Using of vaginal irritants such as bubble baths – chemical vaginitis.
- History of skin conditions (i.e., eczema, psoriasis, seborrhea).
- Vaginal pruritus, esp. at night – pinworms.
- Recent upper respiratory infection - GABHS

Workup

- Usually history and physical exam are sufficient for diagnosis.
- Culture – as indicated by H&P.

Treatment

- Nonspecific/No defined etiologic agent - improve perineal hygiene.
- Chemical irritants - withdrawal of the irritant.
- Vaginal foreign bodies - removal.
- Pinworm infection - Mebendazole.
- GABHS infection – Penicillin/Amoxicillin.

Vulvovaginitis in Childbearing Age

Vulvovaginitis in Childbearing Age

Factors preventing vulvovaginitis:

- Endocervix and/or endometrial mucus acting as a barrier.
- An intact immune system.
- Normal vaginal flora, especially lactobacillus.
- Acidic pH (typically 3.8-4.2).

Etiology

- Bacterial Vaginosis (BV) (22-50%),
- Vulvovaginal Candidiasis (17-39%), and
- Trichomoniasis (4-35%);
- Undiagnosed - 7-72%
  - Accurate diagnosis may be elusive and must be distinguished from other infectious and noninfectious causes.

History

- Chief Complain : Abnormal vaginal discharge.
- Ascertain the following attributes of the discharge
  - Quantity
  - Duration
  - Color
  - Consistency
  - Odor

History (cont.)

- Prior similar episodes.
- Sexually transmitted infection.
- Sexual activities.
- Birth control method.
- Last menstrual period.
- Douching practice.
- Antibiotic use.
- General medical history.
- Systemic symptoms such as lower abdominal pain, fever, chills, nausea, and vomiting.

Bacterial Vaginosis

- Characterized by thin, homogenous, malodorous frothy white-to-grey vaginal discharge, adherent to the vaginal mucosa.

- Caused by an overgrowth of organisms like *Gardnerella vaginalis*, *Mobiluncus* species, *Mycoplasma hominis*, and *Peptostreptococcus* species.

Bacterial Vaginosis

- For diagnosis of BV, 3 out of the following 4 criteria must be present:
  - Homogenous, white, adherent discharge
  - Vaginal pH higher than 4.5
  - Release of fishy odor from vaginal discharge with potassium hydroxide (KOH)
  - Clue cells on wet mount

Bacterial Vaginosis

- **Treatment**
  - **Metronidazole** 500 mg p.o. bid for 7 days, **or** 2 g po single dose
  - **Metronidazole gel** 0.75%, one full applicator (5g) intravaginally, q day for 5 days,
  - **Clindamycin cream 2%,** one full applicator (5 g) intravaginally q hs for 7 days, **or** 300 mg orally bid for 7 days **or** 100 g intravaginally once q hs for 3 days.

http://www.cdc.gov/std/treatment/2

Vaginal Candidiasis

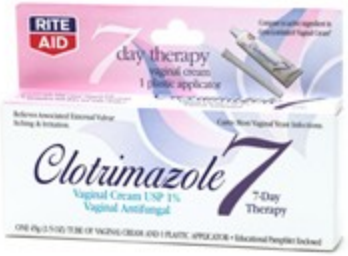
- Second most common cause of vaginitis.
- Caused by Candida species (albicans, tropicalis, glabrata)
- Risk Factors- Diabetes, pregnancy, broad spectrum antibiotic therapy etc.
- Pruritus is the most common symptom.

Vaginal Candidiasis

- Thick, odorless, white vaginal discharge (cottage cheese like).
- Associated with
  - Vulvar candidiasis with vulvar burning,
  - Dyspareunia
  - Vulvar dysuria.
- Wet Prep – hyphae & budding yeasts

Vaginal Candidiasis

- Treatment – A variety of Azole's both oral and topical are available.



Trichomoniasis

- Third most common.
- Caused by Trichomonas Vaginalis- flagellated protozoa.
- Sexually transmitted.
- Profuse frothy yellowish grey discharge.
- Vulvar/vaginal erythema and edema may be associated.
- Strawberry Cervix .
- Saline wet mount – motile oval or fusiform protozoa.

Trichomoniasis

Insert Image of Trichomonas

Trichomoniasis

- Recommended Regimen
  - Metronidazole 2 g orally in a single dose.
- Alternative Regimen
  - Metronidazole 500 mg twice a day for 7 days
- Sex partners of patients with *T. vaginalis* should be treated.

http://www.cdc.gov/std/treatment/2

Cervicitis

Etiology

- Infectious
  - Trichomonas vaginalis
  - Chlamydia trachomtis
  - Neisseria gonrrhoeae
  - HSV
  - HPV
- Noninfectous
  - Local trauma/irritation
  - Malignancy
  - Radiation

Cervicitis

- Symptoms
  - None
  - Abnormal vaginal discharge
  - Abnormal bleeding esp. post-coital
  - Dysuria
  - Dyspareunia
- Signs
  - Mucopurulent discharge
  - Friability
  - Erythema
  - Petechia
  - Cervix tender to palpation

Diagnosis

- Any new episode of cervicitis should be assessed for signs of PID and tested for *C. trachomatis* and for *N. gonorrhoeae*
- Evaluated for BV and trichomoniasis.
- Although HSV-2 infection has been associated, the utility of specific testing for HSV-2 in this setting is unclear.
- Some consider >10 WBC in vaginal fluid, in the absence of trichomoniasis, might indicate endocervical inflammation by *C. trachomatis* or *N. gonorrhoeae*

Treatment Guidelines(CDC 2006)

- Treatment with antibiotics for *C. trachomatis* should be provided in women at increased risk for this common STD
  - age ≤25 years
  - new or multiple sex partners
  - unprotected sex), especially if follow-up cannot be ensured.
- Concurrent therapy for *N. gonorrhoeae* is indicated
  - if the prevalence of this infection is high (>5%) in the patient population (young age and facility prevalence).

http://www.cdc.gov/std/treatment/2

Treatment Guidelines(CDC 2006)

- Concomitant trichomoniasis or symptomatic BV should also be treated if detected.
- For women in whom any (or all) presumptive therapy is deferred, the results of tests for *C. trachomatis* and *N. gonorrhoeae* should determine the need for subsequent treatment.
- Management of Sex Partners
  - Management of sex partners of women treated for cervicitis should be appropriate for the identified or suspected STD.

http://www.cdc.gov/std/treatment/2

Treatment Guidelines(CDC 2006)

- ***Recommended Regimens***

  Azithromycin 1 g orally in a single dose
  OR
  Doxycycline 100 mg orally twice a day for 7 days

- ***Alternative Regimens***

  Erythromycin base 500 mg orally four times a day for 7 days
  OR
  Erythromycin ethylsuccinate 800 mg orally four times a day for 7 days
  OR
  Ofloxacin 300 mg orally twice a day for 7 days
  OR
  Levofloxacin 500 mg orally once daily for 7 days

http://www.cdc.gov/std/treatment/2

Infections of Bartholin's Glands

Infections of Bartholin's Glands

- Pea sized glands located at 4 o'clock and 8 o'clock positions.
- Begin to function at puberty.
- Gradual involution by 30 years of age.
- Obstruction of the ducts may lead to retention of secretions and development of a duct cyst.
- A duct cyst does not have to precede a gland abscess.

Insert image of anatomy of bartholin's gland

http://www.aafp.org/afp/20030701/

Infections of Bartholin's Glands

- Polymicrobial etiology
  - Anaerobes are most common
  - Most common aerobe is N. gonorrhoeae
  - Chlamydia trachomatis
- No longer considered exclusively result of STI's
- Presentation: Vulvar pain, dyspareunia, and pain with walking

http://www.aafp.org/afp/20030701/

Treatment

- Asymptomatic – No treatment
- Marsupialization
- Word Catheter placement
- Bartholin's glands shrink during menopause, vulvar growth in postmenopausal should be evaluated for malignancy

Word Catheter Placement.

Insert images of ward catheter and it's placement

http://www.aafp.org/afp/20030701/

Marsupialization of Bartholin's duct cyst

- *(Left)* A vertical incision is made over the center of the cyst to dissect it free of mucosa.
- *(Right)* The cyst wall is everted and approximated to the edge of the vestibular mucosa with interrupted sutures.

Insert images of steps of marsupialization

http://www.aafp.org/afp/20030701/135.html

Vulvovaginitis in postmenopausal women

Vulvovaginitis in postmenopausal women

- Atrophic Vaginitis is most common.
- Etiology
  - decreased levels of circulating estrogen
  - Cigarette smoking
  - Vaginal nulliparity
  - Milder atrophy occurs in postmenopausal women who
    - participate in coitus
    - have higher androgen levels
    - have not undergone vaginal surgery

Atrophic Vaginitis

- Symptoms
  - Loss of vaginal secretions
  - Burning
  - Dyspareunia
  - Leukorrhea
  - Vulvar pruritus
  - Feeling of pressure, itching and yellow malodorous discharge.
  - Urinary symptoms of urethral discomfort, frequency, hematuria, urinary tract infection, dysuria and stress incontinence may be later symptoms of vaginal atrophy.

Atrophic Vaginitis

- Signs
  - Genital
    - Pale, smooth or shiny vaginal epithelium
    - Loss of elasticity or turgor of skin
    - Sparsity of pubic hair
    - Dryness of labia
  - Urethral
    - Urethral caruncle
    - Eversion of urethral mucosa
    - Cystocele
- Treatment
    - Estrogen Replacement

Treatment

- Estrogen Replacement
- Routes of administration include oral, transdermal and intravaginal.
- Dose frequency may be continuous, cyclic or symptomatic.
- The amount of estrogen and the duration of time required to eliminate symptoms depend on the degree of vaginal atrophy.

Resources

- http://www.emedicine.com/med/topic323.htm
- http://www.emedicine.com/med/topic3369.htm
- http://www.emedicine.com/med/topic2358.htm
- http://www.emedicine.com/EMERG/topic639.htm

(accessed october 2006)

- http://www.aafp.org/afp/20030701/135.html

  Management of Bartholin's Duct Cyst and Gland Abscess

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(accessed october 2006)

- http://www.cdc.gov/std/treatment/2006/toc.htm

(accessed october 2006)

QUESTIONS??