Vulvar Diseases
An Overview

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April 2nd, 2018

Disclosures

No conflicts of interest to disclose

Objectives

• Vaginitis
• Vulvar Dermatoses
• Vulvar Neoplasia
• Vulvodynia and Vulvar Pain
Written Information Available:

University of Michigan Center for Vulvar Diseases

http://obgyn.med.umich.edu/patient-care/womens-health-library/vulvar-diseases
Vaginitis

- Bacterial Vaginosis (22-50%)
- Vulvovaginal Candidiasis (17 – 39%)
- Trichomoniasis (4 – 35%)
- Undiagnosed vaginitis

Causes for Elevated Vaginal pH

- Menses
- Heavy cervical mucus
- Semen
- Ruptured membranes
- Hypoestrogenism
- Desquamative vaginitis
- Trichomoniasis
- Bacterial vaginosis
- Foreign body with infection
- Streptococcal vaginitis (group A)
**Clue Cells with Coccobaccilli**

- Absence of lactobacilli
- Loss of WBC (hence vaginosis, not vaginitis)
- Bacteria between cells

**BV Diagnosis**

**Clinical diagnosis (Amsel’s criteria)**
- Thin gray-white discharge
- “Clue cells”: 20%
- Vaginal pH > 4.5
- Positive “whiff” test
- 3 of 4 present = sensitivity 92% and specificity 77% (vs. gram stain using Nugent’s criteria)

**Sensitivity of Microscopy vs. Culture**

- Bacterial vaginosis (Amsel’s) 92%
- Trichomonas 60-70%
- Yeast 22 - 50%
Complications with BV

- Preterm delivery, PPROM
- Increased risk of pelvic inflammatory disease (PID) and infertility
- Increased susceptibility to HIV acquisition/transmission, HSV-2
- Postoperative complications of hysterectomy and abortion

Treatment of BV

- Metronidazole 500mg PO BID x 7 days
- Metronidazole 0.75% vaginal gel 5g nightly x 5 nights
- Clindamycin 2% vaginal cream 5g nightly x 7 nights
- Clindamycin 100mg ovules PO daily x 3 days

Resistant Bacterial Vaginosis Treatments

- Treat for longer periods (10 – 14 days) with same agent
- Switch Agent
- ? Suppression: metrogel or clindamycin cream twice weekly for up to 6 months
- ? Condom use
- Acidification of vagina has not been helpful
- Exogenous Lactobacillus recolonization using suppositories and other alternative rx?
Probiotics for Bacterial Vaginosis

To lactobacilli or not lactobacilli… that is the question

Bacterial Vaginosis
Management of Sex Partners

Response to therapy and the likelihood of relapse or recurrence are not affected by treatment of her sex partner(s). Therefore, routine treatment of sex partners is not recommended.

2010 CDC STD Treatment Guidelines
### Trichomoniasis Diagnostic Methods - Women

<table>
<thead>
<tr>
<th>Test</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Cost</th>
<th>Ease of Use</th>
<th>Time to Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet Mount</td>
<td>60-70%</td>
<td>&gt;90%</td>
<td>low</td>
<td>easy</td>
<td>short</td>
</tr>
<tr>
<td>Culture</td>
<td>75-85%</td>
<td>&gt;95%</td>
<td>medium</td>
<td>easy</td>
<td>long</td>
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<tr>
<td>In-Pouch™ culture</td>
<td>80-95%</td>
<td>&gt;95%</td>
<td>low</td>
<td>easy</td>
<td>medium</td>
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<tr>
<td>PAP smear</td>
<td>80-80%</td>
<td>80-90%</td>
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<td>easy</td>
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<tr>
<td>PCR</td>
<td>88-97%</td>
<td>98-99%</td>
<td>high</td>
<td>difficult</td>
<td>long</td>
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<tr>
<td>OSOM® TV test</td>
<td>83%</td>
<td>&gt;97%</td>
<td>low</td>
<td>easy</td>
<td>short (10 min)</td>
</tr>
</tbody>
</table>

#### Uncomplicated Trichomoniasis

**95% cure rate**

- Metronidazole 2g PO once
- Treat Partner

2010 CDC guidelines recommend a 3 month follow-up for sexually active women.
Trichomoniasis Treatment Failure

• If treatment failure occurs with metronidazole 2 g single dose and reinfection is excluded, the patient can be treated with metronidazole 500 mg orally twice daily for 7 days
• For patients failing this regimen, treatment with tinidazole or metronidazole at 2 g orally for 5 days should be considered

2010 CDC STD Treatment Guidelines

Vulvovaginal Candidiasis

Uncomplicated
• Sporadic
• Mild symptoms
• Candida albicans

Complicated
• Recurrent (≥4/yr)
• Severe symptoms
• Non-albicans Candida
• Diabetes, immunosuppression, vulvovaginal disease
• Pregnancy

10-20% of women with VVC will have complicated VVC
**Microbiology of Vulvovaginal Candidiasis** 429 pts

- C. albicans 70.8%
- C. glabrata 18.9%
- C. parapsilosis 5.0%
- C. krusei 2.0%
- S. cerevisiae 1.5%
- C. tropicalis 1.4%
- C. lusitaniae 0.2%
- Trichosporon sp. 0.2%


**Sensitivity of Microscopy vs. Culture**

- Bacterial vaginosis (Amsel’s) 92%
- Trichomonas 60-70%
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**Vulvovaginal Candidiasis Treatment**

**Uncomplicated**
- Diflucan 150mg every 3 days x3 doses
- Clotrimazole, nystatin, terconazole, miconazole per vagina

**Recurrent**
- Diflucan 150mg PO weekly up to 6 months
- Boric acid or terconazole 1-2 times weekly
**Fluconazole Adverse Effects**

- Nausea and vomiting in 3-4% (long term therapy)
- Liver effects
  - Chronic therapy
  - AIDS patients
  - Check LFTs after 6 months of use

**Fluconazole Resistance**

- C. glabrata
- C. krusei
- Cases of fluconazole resistance in C. albicans increasing

**Non-albicans Candida**

- Topical imidazole or terconazole x 1 week (50%)
- Boric acid 600mg capsules x 14 days.
- 5-flucytosine
Desquamative Inflammatory Vaginitis

- Elevated pH
- Parabasalar cells on microscopy
- Negative "whiff" test
- Petechiae within vagina and on cervix
- Burning, itching, yellow discharge w/o odor

Atrophic vaginitis
Desquamative Inflammatory Vaginitis (DIV)

- Estrogen (topical or systemic)
- Water-based moisturizers
- Clindamycin 2% vaginal cream x 2 weeks
- Clindamycin 2% + hydrocortisone 25mg nightly x 28 days or longer
Herpes

- 80% HSV-2, 20% HSV-1
- HSV-2 higher rate of recurrences
- Test for HIV
- DNA PCR testing for active ulcerated lesions
- HSV 1 & 2 IgG (not IgM)- takes 6 weeks to be positive
Treatment
First episode
Acyclovir 400mg TID for 7-10 days
Acyclovir 200mg QID for 7-10 days
Valacyclovir 500mg BID for 7-10 days

Recurrent episodes
Acyclovir 400mg TID for 5 days
Valacyclovir 500mg BID for 3 days OR 1g daily for 5 days

Suppression
• 4-6 episodes or more per year
• Want to reduce transmission to seronegative partner
• Acyclovir 400mg BID OR
• Valacyclovir 500mg daily

Vulvar Dermatoses
• Contact dermatitis (lichen simplex chronicus, itch-scratch cycle)
• Lichen sclerosus
• Lichen planus
• Condyloma
• HSV
• Crohn’s disease
Vulvar biopsy

Anesthesia
- 1% lidocaine
- 27-30 gauge needle to inject 1-3 cc's of anesthetic agent
- Inject subepidermally

Biopsy
- Keyes punch
  - 3-5 mm diameter dermatologic instruments (usually 4 mm)
- Fine suture (3.0 or 4.0 Vicryl Rapide) vs. Monsel's/Silver nitrate
A 45 y.o. G2P1 presents with complaints of vulvar pruritus. It awakens her at night. A yeast culture was negative. She has been intermittently treated without success with Class I topical steroids for over a year.
Lichen Simplex Chronicus
Severe Itch-Scratch cycle
Rule out infectious causes
Remove irritants
Oral or IM steroids (short term)
Transition to topical steroids
Cefadroxil 500 mg PO BID x 7 days
Fluconazole 150mg PO x1-3 doses
Amitriptyline qhs (10-50mg) vs.
Hydroxyzine qhs (10-25mg)
White cotton gloves at night

Lichen Sclerosus
Introduction
- Common chronic vulvar disease
- Autoimmune or genetic
- Prevalence 1 in 300 to 1 in 1,000
- Age range from childhood to elderly (bimodal distribution)
Loss of Labia Minora

Treatment of Lichen Sclerosus
- High potency steroid ointment (clobetasol propionate 0.05%)
  - Twice daily in a thin, invisible film for 1 month then daily for two months
  - Maintain twice weekly Class I vs.
  - Decrease to Class IV steroid (hydrocortisone, triamcinolone) daily

Unresponsive disease
- Oral steroids
  - Prednisolone
  - Prednisone
  - Methyl prednisolone
- IM steroids (triamcinolone 1mg/kg)
- Rarely required
- Significant side effects
- Occasionally intra-lesional steroids
Surgical Treatment

- Limited role (high rate of recurrence)
- Surgical division of mucosal adhesions helpful in clitoral phimosis, introital narrowing
Lichen Planus
Erosive Lichen Planus

Lichen Planus
- Autoimmune
- Histology and morphology resemble other hyperimmune conditions (GVH, lichenoid drug eruption)
- More difficult to treat than LS; may respond to immunosuppressive therapy
- Involves mucosal surfaces: vaginal, mouth, esophagus
Lichen Planus

- **Symptoms**
  - Pruritus
  - Irritation
  - Rawness
  - Burning
  - Dyspareunia

Lichen Planus

- **Diagnosis**
  - Biopsy when indicated; often nonspecific
  - Biopsy white epithelium; otherwise the edge of an erosion
  - Consider immunofluorescent study

Lichen Planus Treatment

- Vulvar steroid regimen similar to LS
- Tacrolimus 0.1% ointment QD – BID
- Intravaginal dilator (prevent adhesions)
- Intravaginal corticosteroids
  - Hydrocortisone acetate suppositories (Anusol HC) 25 to 50 mg per vagina
  - OR
  - Clobetasol 0.05% ointment inserted per vagina
Lichen Planus

Other treatments

- Misoprostol
- Hydroxychloroquine (Plaquenil)
- Retinoids
- Cyclosporine
- Cyclophosphamide
- Azathioprine
- Etanercept (Enbrel)
- Mycophenolate mofetil (CellCept)
- Methotrexate

Condyloma

Micropapillomatosis
White

Brown
Note Perianal Involvement

Red
Colposcopic Techniques

- 3% to 5% acetic acid
- Soak initially for 3-5 minutes
- Use copious amounts
- Reapply often
- Avoid using in presence of breaks in epithelium or inflammation

Colposcopy
Symptoms

- Most - completely asymptomatic
- Itching or burning
- Irritation
- Dyspareunia

Classification

- VIN 1, 2, 3 in the past
- 2004 ISSVD replaced this:
  VIN-usual: warty, basaloid, and mixed VIN
  HPV mediated
  Smoking, immunocompromise
  VIN-differentiated:
  non-HPV mediated
  lichen sclerosus/planus

VIN Differentiated
non-HPV mediated

Courtesy of M Preti, MD
Courtesy of T Wright, MD
Treatment of Condyloma

- Cryosurgery
- Laser ablation
- Topical acids
- Imiquimod
- Podophyllotoxin
- 5-Flurouracil
- Podophyllin
- Interferon
- Surgery

Treatment of VIN

Wide local excision (0.5 -1cm margin)
- Laser
- Imiquimod (off label use)

HPV vaccine!!

Monitor for recurrence:
- 6, 12 months then annually
Non-squamous Dysplasia (NOT INFECTIOUS)

- Paget's disease
- Melanoma in situ

Paget’s Disease

Occurs most commonly on the nipple and areola, where its presence signifies an underlying adenocarcinoma of the breast
Apocrine gland origin
25% associated with neoplastic disease
Red velvety area with white islands of hyperkeratosis. At times may be pinkish and eczematoid
Paget’s Disease
Workup

• History and PE
  Symptoms: itching, burning
  Signs: velvety appearance and bleeding
• Papanicolaou smear
• Mammogram
• Cystoscopy
• Colonoscopy

Vulvodynia
Definition of Vulvodynia

International Society for the Study of Vulvovaginal Disease (ISSVD)

- Chronic discomfort
- Burning
- Stinging
- Irritation
- Rawness

2003 ISSVD Terminology and Classification of Vulvar Pain

Vulvar pain related to a specific disorder

- **Infectious** (e.g. candidiasis, herpes, etc.)
- **Inflammatory** (e.g. lichen planus, immunobullous disorders, etc.)
- **Neoplastic** (e.g. Paget’s disease, squamous cell carcinoma, etc.)
- **Neurologic** (e.g. herpes neuralgia, spinal nerve compression, etc.)

Vulvodynia

- **Generalized**
  - Provoked (sexual, nonsexual, or both)
  - Unprovoked
  - Mixed (provoked and unprovoked)

- **Localized** (vestibulodynia, clitorodynia, hemivulvodynia, etc.)
  - Provoked (sexual, nonsexual, or both)
  - Unprovoked
  - Mixed (provoked and unprovoked)
Diagnosis of exclusion

- Yeast (often cyclic vulvar pain)
- Desquamative inflammatory vaginitis (DIV)
- Atrophic vaginitis
- Pudendal nerve entrapment

- Q tip test
- Vulvoscopy
- Duration of Pain

Generalized

Localized
Theories on Etiologies

- Embryologic derivation
- HPV
- Oxalates
- Hormonal changes
- Chronic inflammation
- Altered immuno-inflammatory process
- Nerve pathways

Tender, or patient describes area touched as area of burning

Yeast culture negative or inadequate relief with antifungal rx

1. Vulvar care measures
2. Topical medications
3. Oral medications
4. Injections
5. Biofeedback/Physical therapy
6. Low oxalate diet
   Ca²⁺ citrate supplementation?
7. Cognitive and behavioral therapy

SEXUALITY AND PAIN
Vulvar care measures

• Loose clothing
• No soaps
• Showerhead for washing with water only
• Warm water soaks, ice packs
• White cotton underwear
• Mild detergents, soaps. Extra rinse for underwear
• Avoid pads, especially Always™

Topical Anesthetics

• 5% Lidocaine (Xylocaine®) ointment safe, effective short-term symptom relief for vestibulodynia (pre-intercourse)
• Benzocaine (Vagisil®) not recommended; it is a sensitizing agent, causing rebound vasodilation and pain

Topical Compounds

• Amitriptyline 2% Baclofen 2% in WWB (water washable base)
  squirt ½ cc from syringe onto finger and apply to affected area
• Gabapentin 6% ketamine 2% bacofen 2% lidocaine 2% in wwb
• Work better for localized pain
Oral medications

• Antidepressants:
  - TCAs – Amitriptyline
  - SSRIs – Effexor
  - SNRIs – Cymbalta

• Anticonvulsants:
  - Gabapentin
  - Pregabalin
  - Topiramate

Trigger point injections

Nerve Blocks
- Pudendal
- Genitofemoral
- Ilioinguinal
- Ganglion impar

Intradermal
- Bupivacaine / triamcinolone acetonide injections
- Can be repeated monthly up to 3 times
- 50% efficacy

Neuromodulation with Sacral Nerve Stimulator

- Modulation of efferent signals to spinal cord
- Refractory pain in distribution of specific nerve root (S3 or S4)
Treatments for Vaginismus

Counseling
Topical lidocaine
Intravaginal valium
Physical therapy
Dilators
Hypnosis

Surgery
General Measures

• Written material/handouts
  • Patient education regarding the nature and prognosis of vulvodynia
• National Vulvodynia Association
  www.nva.org or 301-299-0775

Online teaching program on chronic vulvar pain
http://learn.nva.org

References