Your Diagnosis Is?  
Test Your Knowledge of Various Vulvovaginal Conditions

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Ann Arbor, Michigan  
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Hope Haefner, MD was previously on an advisory board for Merck Co., Inc.
Learning Objectives

After this lecture you should be able to:

• Diagnose common and unusual vulvovaginal conditions
• Identify the clinical feature of various vulvovaginal conditions
• Discuss the various treatments available for a variety of vulvovaginal diseases

Please Interrupt for Questions
Additional Information Available:

University of Michigan Center for Vulvar Diseases (Google)

Then, click on Information on Vulvar Diseases

http://obgyn.med.umich.edu/patient-care/womens-health-library/vulvar-diseases
Gross and histologic images
Sample Question

Format
• Gross or histologic picture
• Question (Your diagnosis is?)
• Type in correct answer
Your Diagnosis Is?

A. Vitiligo  
B. Atrophy  
C. Lichen sclerosus  
D. None of the above
A 21 y.o. G0 presents with a history of chronic immunosuppression secondary to autoimmune hepatitis. She has noted vulvar changes for one year. She complains of vulvar pain and occasional vulvar bleeding.
The histologic images shown represent

A. HSIL of the vulva and 2 condyloma
B. 1 and 2 both condyloma
C. 1 and 2 both molluscum contagiosum
D. 1 condyloma and 2 HSIL of the vulva
## Lower Anogenital Squamous Terminology (LAST)

<table>
<thead>
<tr>
<th>ISSVD 1986</th>
<th>ISSVD 2004</th>
<th>LAST 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIN 1</td>
<td>Flat condyloma or HPV effect</td>
<td>Low Grade</td>
</tr>
<tr>
<td>VIN 2</td>
<td>VIN, usual type</td>
<td>High Grade</td>
</tr>
<tr>
<td></td>
<td>a. VIN, warty type</td>
<td></td>
</tr>
<tr>
<td>VIN 3</td>
<td>b. VIN, basaloid type</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. VIN, mixed (warty/basaloid) type</td>
<td></td>
</tr>
<tr>
<td>Differentiated VIN</td>
<td>VIN, differentiated type</td>
<td></td>
</tr>
</tbody>
</table>
Treatment of condyloma/HSIL of the vulva should be:

A. Laser
B. Wide local excision
C. Combination of above
D. No treatment needed
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</table>
| VIN 2     | VIN, usual type  
a.VIN, warty type  
b.VIN, basloid type  
c.VIN, mixed (warty/basloid) type | High Grade  
| VIN 3     | VIN, differentiated type | ??? |
| Differentiated VIN | VIN, differentiated type | ??? |

**2015 ISSVD Terminology of Vulvar Squamous Intraepithelial Lesions**

- Low grade squamous intraepithelial lesion (Flat condyloma or HPV effect)
- High grade squamous intraepithelial lesion (VIN usual type)
- Intraepithelial neoplasia, differentiated-type
- 10-12-16  FDA approved a 2 dose schedule for nanovalent vaccine for males and females ages 9-14
- The new schedule calls for the second dose of the vaccine to be given 6-12 months following the first

36 y.o. presents with a recent complaint of ripping pain with intercourse, sometimes with spotting of bright red blood.
Vulvar Fissures

Two main varieties

• Posterior fourchette fissures which occur with intercourse
• Skin fold fissures which patients describe as “paper cuts”
List Conditions Associated with Fissures

A.
B.
C.
D.

Treatment

• Rule out candida, lichen sclerosus, atrophy, herpes, Crohn’s
• Reduce friction
  – Ample lubricants (water, silicone, oil based)
  – Position changes
• Treat atrophic vaginitis with local estrogen and dilator
• Treat vestibulodynia and vaginismus
• Surgical excision as last resort
Treat with Dilators

Thoughts on Drying Racks
A 86 year old woman complains of vulvar soreness and itching that has recurred in the last year. CHF, recent stroke, DVT.

She thinks she had a problem like this 10 years ago but has no records. Topical steroids had made no difference.

A biopsy is performed.
Your Diagnosis Is?

A. Lichen sclerosus
B. VIN differentiated
C. Lichen planus
D. Extramammary Paget’s

Recurrent Paget’s Disease
Which treatment do you recommend for her recurrent Paget’s?

A. Triamcinolone ointment
B. Laser therapy
C. **5% imiquimod cream**
D. Wide local excision
What is the rate of Paget’s disease of the vulva being associated with an underlying adenocarcinoma?

A. 1% to 25%  
B. 26% to 50%  
C. 51% to 75%  
D. 76% to 100%
A 64 y.o. G4P4 was recently diagnosed with lichen sclerosus (no biopsy performed). She was started on clobetasol propionate. She calls complaining of vulvar pain.
Your Diagnosis Is?

A. Lichen planus
B. Pemphigoid
C. **Lichen sclerosus with herpes**
D. Invasive squamous cell carcinoma
How many different types of herpes viruses affect humans?

A. 2
B. 4
C. 8
D. 80
What percent of people with HSV-2 are unaware that they are infected?

A. 10-20%
B. 21 – 40%
C. 50-70%
D. Over 80%
A 3 y.o. complains of a year and a half of burning pain (prepuce and clitoris). She is crying and this is significantly affecting her life.
Your Diagnosis Is?

A. Lichen sclerosus
B. Debris build up under prepuce
C. Yeast infection
D. Sexual abuse
A 49y.o. G4P2 presents with chronic vulvar pruritus and irritation. Her vaginal pH is 4.0. She has had 3 other identical episodes this year.
<table>
<thead>
<tr>
<th>Condition</th>
<th>pH (3.0-4.5)</th>
<th>WBC</th>
<th>Parasbasals</th>
<th>Features</th>
<th>Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>3.0-4.5</td>
<td>Few or none</td>
<td>no</td>
<td>NI lactobacilli</td>
<td>Creamy, mucous, white</td>
</tr>
<tr>
<td>Yeast</td>
<td>3.0-4.5</td>
<td>no</td>
<td>no</td>
<td>Hyphae Spores (400x)</td>
<td>Curdy</td>
</tr>
<tr>
<td>Bacterial Vaginosis (Amsel Criteria)</td>
<td>&gt;5.0</td>
<td>No to small</td>
<td>no</td>
<td>Clue Cell</td>
<td>Yellow, grey w/ odor</td>
</tr>
<tr>
<td>Trichomoniasis</td>
<td>&gt;5.0</td>
<td>yes</td>
<td>maybe</td>
<td>Motile trich</td>
<td>Green, yellow, bubbly</td>
</tr>
<tr>
<td>DIV</td>
<td>&gt;5.0</td>
<td>yes</td>
<td>yes</td>
<td>Mixed bacteria, absent or reduced lacto</td>
<td>Yellow</td>
</tr>
<tr>
<td>Atrophic Vaginitis</td>
<td>&gt;5.0</td>
<td>likely</td>
<td>yes</td>
<td>Scant cells, few bacteria</td>
<td>Scant, dry</td>
</tr>
</tbody>
</table>
Culture Positive for Candida Glabrata

- Low vaginal virulence
- Rarely causes symptoms, even when identified by culture
  - 50% of the time non-albicans yeast is an innocent bystander and is not causing the patient’s symptoms
    Nyirjesy 2016
- Exclude other co-existent causes of symptoms and only then treat for C. glabrata

Other Antifungals

Boric Acid

- Puratronic, 99.99995% (metals basic)
- Formula
  \[ \text{H}_3\text{BO}_3 \]
- Formula Weight 61.83
- Form
  Crystalline Powder
- Melting Point 170.9\(^{\circ}\)
- Merck Number 11,1336
Boric Acid Capsule or Suppository  
PER VAGINA

Fill 0-gel capsule halfway (600 mg)  
For treatment of acute infection; insert *per vagina* qhs x 14 days  
For prevention of recurrence; insert *per vagina* twice weekly

KEEP AWAY FROM CHILDREN  
CONTRAINDICATED IN PREGNANCY
Does she qualify for the diagnosis of recurrent Candida

A. Yes
B. No

Yeast/Candida iphone App

Contributors

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<table>
<thead>
<tr>
<th>Yeast Culture/Speciation Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candida albicans</td>
</tr>
<tr>
<td>Candida glabrata</td>
</tr>
<tr>
<td>Candida parapsilosis</td>
</tr>
<tr>
<td>Candida tropicalis</td>
</tr>
<tr>
<td>Candida lusitaniae</td>
</tr>
<tr>
<td>Trichosporon</td>
</tr>
<tr>
<td>Saccharomyces cerevisiae</td>
</tr>
<tr>
<td>Candida kefyr</td>
</tr>
<tr>
<td>Candida dubliniensis</td>
</tr>
</tbody>
</table>

There are limited data on some of the treatment regimens. The compounded medications generally are suggestions to consider when other agents are not working. The compounded medications are generally used for resistant strains of Candida.
**Candida lusitaniae**

Topical creams can be irritating, vaginal tablets or suppositories may be less irritating. One-day products may be more irritating than longer-use products.

Ketoconazole is not included in this list due to the availability of more efficacious and less toxic medications.

Use as directed by package labeling. All pharmacies may not carry all products. The creams and suppositories are often oil-based and might weaken latex condoms and diaphragms.

### Oral

Fluconazole

Additional information on drug interactions with fluconazole can be obtained in the CDC Guidelines [http://www.cdc.gov/std/tg2015/candidiasis.htm](http://www.cdc.gov/std/tg2015/candidiasis.htm)

In pregnancy, fluconazole is not to be used, instead use topical creams for treatment.

Recurrence:
- 150 mg oral tablet every 3 days for three times, then 150 mg orally weekly for up to six months
- At times, other dosing may be required such as 100 mg oral tablet every 3 days for three times (day 1, 4, and 7), then 100 mg orally weekly for up to six months; or 200 mg oral tablet every 3 days for 3 times (day 1, 4, and 7) then 200 mg orally weekly for up to six months.
- If fluconazole cannot be used, (liver disease, Steven’s-Johnson syndrome, or side effects such as headaches or nausea) consider:
  - Boric acid
  - Maintenance creams for recurrent yeast

Itraconazole

In pregnancy, itraconazole is not to be used, instead use topical creams for treatment.

100mg oral tablet daily for 2 weeks, then twice weekly for up to 6 months.

### Topical

Clotrimazole

Clotrimazole 1% vaginal cream: 1 applicatorful per vagina nightly for 7 nights

Clotrimazole 2% vaginal cream: 1 applicatorful per vagina nightly for 3 nights

**Miconazole 7 day cream 2% (100 mg per dose)**
- One applicatorful per vagina nightly for 7 nights

Miconazole 7 day cream 2% (100 mg per dose) plus miconazole nitrate cream 2%
- One applicatorful per vagina nightly for 7 nights
- Miconazole nitrate 2% cream to the vulva twice a day for up to 14 days

Miconazole 3 day cream, suppository, ovule 4% (200 mg per dose)
- One applicatorful, suppository or ovule per vagina nightly for 3 nights

Miconazole 3 day cream, suppository, ovule 4% (200 mg per dose) plus miconazole nitrate cream 2%
- One applicatorful, suppository or ovule per vagina nightly for 3 nights
- Miconazole nitrate 2% cream to the vulva twice a day for up to 14 days

Miconazole 1 day insert (ovule) (1200 mg per dose) plus miconazole nitrate cream 2%
- One insert (ovule) per vagina for one day or night
- Miconazole nitrate cream 2% cream to the vulva twice a day for up to 14 days

Miconazole nitrate topical 2% cream to the vulva twice a day for up to 14 days

For some recurrent infections, consider using Miconazole 2% vaginal cream: 1 applicatorful per vagina nightly for 14 nights, followed by 1 applicatorful twice weekly for up to six months.

### Compounded

Boric acid suppositories

In pregnancy, boric acid is not to be used, instead use maintenance creams for recurrent yeast.

Vaginal boric acid suppositories 600 mg per vagina for 14 nights; If recurrent, consider suppression after re-treatment with twice weekly boric acid 600 mg per vagina.

Boric acid capsules can be FATAL if swallowed/taken orally.
PATIENT INFORMATION
What are the symptoms of Candida (yeast) infection?
These are the symptoms of vaginal candida infection:
- Genital itch - this is the most common symptom of thrush, itching is especially worse before your period;
- Soreness or burning inside (in the vagina) during or after sex;
- Abnormal discharge – that can be thick and white or sometimes it can seem normal;
- A change in the smell of your vaginal secretions;
- Redness and inflammation of the outside (vulva);
- Soreness or discomfort on urination (peeing);
- Pain – particularly if the infection occurs a number of times or hasn’t been treated properly; and
- Small white spots on the vaginal wall or curds in the discharge.

How is it diagnosed?
A diagnosis of vaginal Candida infection is often made based on a number of things including your symptoms, physical examination, examination of vaginal secretions under the microscope and vaginal culture. However, there are many other conditions of the vagina and vulva that have symptoms in common and even associated with Candida, so if there is doubt about the diagnosis, or when it is recurrent, it is essential that your healthcare provider takes a vaginal swab for laboratory testing before treatment is started.
A 21 year old presents with chronic drainage from her right vulva since November 2005.

Underwent surgical resection of the draining area for possible Bartholin gland abscess in July 2006 with no significant improvement in her symptoms.

23 y.o. G0 referred for Bartholin Cyst

Presents with drainage and sore on right vulva
- 4 years ago had Bartholin cyst on opposite side
- 2 Word catheter placements on right side
- 1 resection of “Bartholin cyst” on right side
Your Diagnosis Is?

A. Bartholin cyst
B. Fistula in ano
C. Granuloma inguinale
D. Metastatic bowel cancer

If you could only order one study, what would your order?

A. Fistulography
B. Endoanal/endorectal ultrasound
C. MRI
D. None of the above
Studies you might consider include:

- Fistulography
  (referred with one-mother works in radiology)

Accuracy rate is 16-48%
Studies you might consider include:

- Endoanal/endorectal ultrasound - 50% better than physical exam alone

Studies you might consider include:

- MRI
  80 – 90% concordance with operative findings when observing a primary tract course and secondary extensions. Study of choice for complex fistulae.
Fistula in ano occurs more often in females than males

A. Yes
B. No

The male-to female ratio is 1.8:1
81 y.o. G2P2 presents with vulvar itching and irritation. She had previously undergone a biopsy of the lesion, revealing verruca.

She says since the biopsy, the lesion has increased in size significantly.
Past Medical History

- Atypical chest pain (limited to approximately 1/2 block of ambulation and 1 flight of stairs secondary to shortness of breath)
- Vertigo
- Leg cramps
- Osteoarthritis
- Lichen sclerosus
- Bilateral cataracts
- Depression
- Osteoporosis
- Basal cell carcinoma (face)
- Spinal stenosis
- Peptic ulcer disease
- Hypertension
Biopsy 1 month prior to seeing you is verruca. What do you recommend as her treatment?

A. Rub a potato on the wart and throw it over the fence
B. Cryotherapy
C. Trichloroacetic acid
D. Wide local excision
What is the Diagnosis?

A. HSIL of the vulva
B. Invasive squamous cell carcinoma
C. Verrucous carcinoma
D. Adenocarcinoma
63 year old woman is referred for consultation for vulvar pain, irritation and a non healing lesion. She’s known to have lichen sclerosus, treated with both topical and IM steroids, tacrolimus, estrogen cream and various other medications.

She’s been also diagnosed with GI Crohn’s disease, treated with Imuran.
Part 1
Would you consider a biopsy/ies?

A. Yes
B. No
She had biopsies taken several times, the most recent is 5 months prior to her visit to see you. Biopsies from the vestibule, lower vaginal wall and right labium minus revealed spongiosis with hyperkeratosis and hypergranulosis with squamous atypia and underlying chronic inflammation. Several areas appeared reactive and were felt to represent a chronic eczematous process or cutaneous reaction to the underlying Crohn's disease.
Part 2
Would you consider a biopsy/ies?

A. Yes
B. No

As you examine her, she mentions she can only urinate twice a day. You touch the medial aspect of the vestibule on her right and it is hard and firm. Would you do a biopsy?

A. Yes
B. No
Histopathology reveals:

A. Adenocarcinoma
B. Lichen planus with VIN
C. **Squamous cell carcinoma**
D. Lichen sclerosus with VIN diff

Invasive squamous cell carcinoma; depth of invasion is at least 4mm. Carcinoma extends to multiple specimen edges on all three biopsies.
Take home messages from this patient:
Don’t forget to listen to your patients and touch.
Don’t hesitate to re-biopsy if the results are not consistent with the whole picture.
61-year-old G3P3 presents with constant vulvar drainage
If you could only look at one other area of her body, where would you look?

A. Eyes
B. Colon
C. Mouth
D. Axilla

What is this?
A. Squamous cell carcinoma
B. Pyogenic granuloma
C. Epithelial inclusion cyst
D. Paget’s disease
T.R.A.C.™ SYSTEM
Use only with T.R.A.C.™ Therapy Systems
LARGE BLACK FOAM DRESSING
(26.5 x 15 x 3.3cm)
Re-Order No: M6275053.5 (5 pack)
Re-Order No: M6275053.10 (10 pack)

APPLICATION INSTRUCTIONS:
Prep patient and skin as required with the V.A.C. Therapy.
NOTE: Refer to the V.A.C. Therapy Care reference manual.
1. Remove end tab labeled “1” (either side) and be careful to hold flap of Layer “1” pack for adherence to drape.
2. Pull back one side of layer “1” and pull of drape face down over foam by careful edge down securely and nothing side of foam, making sure to leave at least 2 drape around foam (Fig. 2). Be careful of activities, as they may be a source of new pressure ulcers.
4 months post op from skin grafts

2 years after surgery
Summary

When patients do not respond to therapy
  – Reconsider the diagnosis
  – Check for infection - fungal, bacterial, HSV
  – Consider contact dermatitis to a medication, over washing, etc.
  – Evaluate for carcinoma