Vulvar Dystrophies: What Are All Those Lesions?

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Vulvar Dystrophies

- Hyperplastic dystrophy (squamous cell hyperplastic)
  - without atypia
  - with atypia
- Lichen sclerosus
- Mixed dystrophy (lichen sclerosus with foci of epithelial hyperplasia)
  - without atypia
  - with atypia

Vulvar Dystrophies

- Paget’s Disease of the Vulva
  - Should be recognized as a distinct clinicopathologic entity with a pathognomonic histologic appearance
- Squamous Cell Carcinoma In Situ
  - May present clinically at any age as papules or macules, coalescent or discrete, single or multiple

Deleted Terms

- Lichen sclerosus et atrophicus
- Leukoplakia
- Neurodermatitis
- Leukokeratosis
- Bowen’s disease
- Carcinoma simplex
- Leukoplakic vulvitis
- Hyperplastic vulvitis
- Kraurosis valvae
- Erythroplasia of Queyrat
**Vulvar Dystrophies**

**SYMPTOMS OF VULVAR LICHEN SCLEROSUS**

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>% of Women With Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Itching</td>
<td>98.8</td>
</tr>
<tr>
<td>Irritation</td>
<td>60.5</td>
</tr>
<tr>
<td>Burning</td>
<td>28.4</td>
</tr>
<tr>
<td>Dyspareunia</td>
<td>24.7</td>
</tr>
<tr>
<td>Tearing</td>
<td>14.8</td>
</tr>
<tr>
<td>Bleeding</td>
<td>9.9</td>
</tr>
<tr>
<td>Fissuring</td>
<td>8.8</td>
</tr>
<tr>
<td>Discharge</td>
<td>7.4</td>
</tr>
</tbody>
</table>

Representative Topical Steroid Creams

**Low Strength**
- Hydrocortisone 1%
- Desonide 0.05% (Tridesilon Cream)

**Medium Strength**
- Betamethasone valerate 0.1% (Valisone)
- Triamcinolone acetonide 0.1% (Kenalog)

**High Strength**
- Triamcinolone acetonide 0.5% (Aristocort)
- Fluocinonide 0.5% (Lidex cream)

**Very High Strength**
- Clobetasol propionate 0.05% (Temovate)

Topical Steroids

- **Cream**
  - thin
  - easily spread
  - more alcohol
  - better on acute lesions
- **Ointment**
  - occlusive
  - more absorbed
  - good on thick lesions-chronic
  - holds heat

Oral Steroids

- 30 - 60 mg of prednisone for one week
- Reduce by 50% for second week
- Stop

Lichen Sclerosus

Therapy with Clobetasol Propionate

- 81 symptomatic patients - biopsy proven
- failed previous therapy
- Mean age 54 years - average of 2.25 treatment modalities previously used
- Symptoms - 77% of patients had complete remission, 18% partial, 5% no change
- Clinical appearance - 32%, 46% and 22%

Lorenz, B. *J of Reprod Medicine* 1998:43;790-798

Clobetasol Dipropionate 0.05% versus Testosterone Propionate 2% — Lichen Sclerosus

- 20 women in each treatment group
- Similar objective response at 3 months
- Clobetasol much more effective at 1 year
- 70% non-compliance with testosterone
  10% non-compliance with clobetasol

Bornstein, J *Am J Obstet Gynecol* 1998
Vulvodynia

- Chronic vulvar discomfort, particularly the complaint of burning, stinging, irritation and rawness.
- Essential vulvodynia - no physical findings – Possible derangement of nerve transmissions that allows touch stimuli to be perceived by the brain as pain.
- Swab test - cotton application soaked with lidocaine - if tenderness decreased, patient has vestibulitis which is a mucosal problem.

Distinguishing Vulvodynia Subclassifications

<table>
<thead>
<tr>
<th>Vulvar Vestibulitis</th>
<th>Essential Vulvodynia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain is usually not constant</td>
<td>Pain is a constant burning feeling</td>
</tr>
<tr>
<td>Areas of sensitivity are erythematous</td>
<td>No erythema or abnormal appearance</td>
</tr>
<tr>
<td>Lidocaine quells the sensitivity</td>
<td>Lidocaine has no effect</td>
</tr>
<tr>
<td>Cause is dermal inflammation</td>
<td>Cause is allodynia (heightened nerve sensitivity)</td>
</tr>
</tbody>
</table>
**Vulvodynia- Topical Gabapentin (Neurontin)**

• 2%, 4% and 6% Cream – 0.5 ml t.i.d.

• 35 patients evaluable after 8 weeks

• 28 (50%) demonstrated at least 50% decrease in pain

• Neuropathic pain - damage to peripheral afferent elements


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**Vulvar Vestibulitis**

Defining signs and symptoms:

1. Severe pain on vestibular touch; entry dyspareunia - no tampons

2. Tenderness to pressure localized within the vulvar vestibule

3. Vestibular erythema of various degrees

4. Absence of symptoms during normal daily activities

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**Cotton Swab Test**

- Labium majus
- Urethra
- Labium minus
- Posterior forchette
- Prepuce of clitoris
- Glans of clitoris
- Hymen
- Vestibule
- Perineum

0 no tenderness
1 mild tenderness
2 moderate tenderness
3 severe tenderness

Drawing courtesy of Mark Hunter, MD

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**Vulvar Vestibulitis**

57 cases - Friedrich’s criteria

173 controls

- Gonorrhea 0%
- Chlamydia 0%
- Trichomonas 0%
- Mycoplasma 0%
- Gardnerella 14%
- Candida 8.8%
- HPV DNA 5.3%

Little support for concept that infection causes vulvar vestibulitis

Bazin, S. Obstet Gynecol 83:47, 1994
**Oxalate Content of Selected Foods (per serving)**

<table>
<thead>
<tr>
<th>Low (&lt; 2 mg)</th>
<th>Moderate (2-10 mg)</th>
<th>High &gt; 10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bananas</td>
<td>Apples</td>
<td>Spinach</td>
</tr>
<tr>
<td>Grapefruit</td>
<td>Oranges</td>
<td>Peanuts</td>
</tr>
<tr>
<td>Melons</td>
<td>Peaches</td>
<td>Celery</td>
</tr>
<tr>
<td>Avocados</td>
<td>Pears</td>
<td>Blueberries</td>
</tr>
<tr>
<td>Cauliflower</td>
<td>Pineapple</td>
<td>Strawberries</td>
</tr>
<tr>
<td>Mushrooms</td>
<td>Carrots</td>
<td>Chocolate</td>
</tr>
<tr>
<td>Green peas</td>
<td>Corn</td>
<td>Baked beans</td>
</tr>
<tr>
<td>Onions</td>
<td>Broccoli</td>
<td>Okra</td>
</tr>
<tr>
<td>Eggs</td>
<td>Tomatoes</td>
<td>Summer squash</td>
</tr>
<tr>
<td>Cheddar cheese</td>
<td>Asparagus</td>
<td>Sweet potatoes</td>
</tr>
<tr>
<td>Poultry</td>
<td>Sardines</td>
<td>Wheat bran</td>
</tr>
<tr>
<td>Milk</td>
<td>Coffee</td>
<td>Tea</td>
</tr>
</tbody>
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**Topical Lidocaine Eases Pain of Vulvar Vestibulitis**

- 5% topical lidocaine – vulvar vestibulitis
- 61 women – after 7 weeks 76% were able to have intercourse
- Applied ointment via a saturated cotton ball and removed it after 8 hours
- No control group
- No evaluation of sexual response differences

Zolnoun DA. *Obstet Gynecol* 2003;102:84-87

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**Vulvar Vestibulitis/Surgical Treatment**

- Questionnaire to 69 women six months after surgery
- 54 (78%) replied
- Moderate to excellent improvement was reported after surgery by 45 (83%)
- 7 had repeat surgery - 4 improved

Schneider D. *J of Repro Med* 2001;46:227

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**Location of Injections**

Horowitz BJ *Obstet Gynecol* 1989

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**Location 1**

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**Location 2**
Surgery for Vestibulodynia

<table>
<thead>
<tr>
<th>Author</th>
<th>Complete Response %</th>
<th>Partial Response %</th>
<th>No Response %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bornstein (1997)</td>
<td>76</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>Bergeson (1997)</td>
<td>63</td>
<td>37</td>
<td>0</td>
</tr>
<tr>
<td>Kehoe (1996)</td>
<td>60</td>
<td>29</td>
<td>11</td>
</tr>
<tr>
<td>Mann (1992)</td>
<td>66</td>
<td>21</td>
<td>13</td>
</tr>
<tr>
<td>Schover (1992)</td>
<td>47</td>
<td>37</td>
<td>16</td>
</tr>
<tr>
<td>Marinoff (1991)</td>
<td>82</td>
<td>15</td>
<td>3</td>
</tr>
</tbody>
</table>


Vulvar Vestibulitis - Treatment
1. Eliminate potential triggers – Candida albicans, lichen sclerosis
2. Topical estrogen – epithelial maturation
3. Reducing oxalate levels in urine
   Calcium (1.2 gms/day) to bind oxalate
   Diet low in oxalates
4. Tricyclics (Elavil, Norpramin, Aventyl)
   10 mg b.s. and increase weekly to 100–150 mg
5. Cortico steroids – medium to high potency
6. Interferon (20–40% improvement)
7. Pelvic floor dysfunction – elevated resting muscle tension – biofeedback
8. Surgery

Stewart EG. Contemp OB/GYN, October 2003

Lentigo

Classification of Nevi
- Junctional Nevus
  - Located in basal layer most likely to develop into melanoma
- Compound Nevus
  - Melanocytes both at the epidermal-dermal interface and within dermal layer
- Intradermal Nevus
  - Compound nevus when neval cells in the junctional zone cease to be active
  - Low malignant potential
**Guidelines for Excisional Biopsy of Vulva Nevi**

- Change in surface area of nevus
- Change in elevation of a lesion-raised, thickened or nodular
- Change in color
  - especially brown to black
- Change in surface
  - smooth to scaly or ulcerated
- Change in sensation
  - itching or tingling

**Classification of VIN**

<table>
<thead>
<tr>
<th>VIN</th>
<th>Stage</th>
<th>Formerly Known As</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIN I</td>
<td>Mild dysplasia</td>
<td>Formerly mild atypia</td>
</tr>
<tr>
<td>VIN II</td>
<td>Moderate dysplasia</td>
<td>Formerly moderate atypia</td>
</tr>
<tr>
<td>VIN III</td>
<td>Severe dysplasia</td>
<td>Formerly severe atypia</td>
</tr>
<tr>
<td>VIN IV</td>
<td>Carcinoma in-situ</td>
<td></td>
</tr>
</tbody>
</table>

**Distribution of incidence and age for VIN diagnosed within two four-year periods separated by one decade; a=age in years.**

*Joura EA J of Repro Med 2000;45:613*

**Bimodal age distribution of invasive vulvar cancer (1994-1997); a=age in years.**

*Joura EA J of Repro Med 2000;45:613*
Toluidine Blue
Age Distribution of High Grade Vulvar Intraepithelial Neoplasia (n = 44)

- 0-19: 2.3%
- 20-29: 11.4%
- 30-39: 13.6%
- 40-49: 34.1%
- 50-59: 18.2%
- 60-69: 9.1%
- 70-79: 0.1%

Diagnosis - careful inspection
Keyes dermatological punch (2-6 mm size)
Multifocal CIS - Vulva

- Other approaches
  - 5-FU
  - Cryosurgery
  - Laser Surgery
  - Electrocautery
  - CUSA
  - Etiologic Agent Unknown
Laser Therapy of VIN

- Labia minora (hair-free) vaporize skin to a depth of 0.5mm
- Labia majora (hair-containing) vaporize skin to a depth of 1.5-2.0mm
- Depth of hair-follicle involvement rarely exceeds 1.0mm
- Vaporization of full thickness of dermis will lead to alopecia and vulvar dryness
VIN III Progression to Invasive Disease

- 7/8 (87.5%) untreated cases progressed to invasive vulvar cancer within 8 years
- 4/109 (3.8%) treated women later developed invasive cancer

Report from M.D. Anderson Hospital
Felix Rutledge Society meeting, Houston 1985

Frequency of Invasive Cancer in Surgically Excised VIN 3

- 78 patients with VIN 3 — surgically excised
  16 (20%) were found to have invasion
  7 superficial
  9 >1mm
- Surgical excision should be considered for VIN 3 - especially diffuse disease

Husseinazadeh et al Gynecol Oncol 1998;73:119-120

VIN III

N = 113
1961-1993:

<table>
<thead>
<tr>
<th>Ages</th>
<th>Mean: 52 y</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-84</td>
<td>47% &gt;40 y</td>
</tr>
</tbody>
</table>

Mean Age: 1961-1980: 52.7 y
Mean Age: 1981-1993: 35.8 y

Jones RW Obstet Gynecol 1994;84:741

VIN III

N = 75

Recurrence VIN 21%

Progression to Vulvar Cancer:

12/113 (3.5%)
4/113 VIN Treated
8/113 VIN Untreated

Mean time between diagnosis of VIN and vulvar cancer: (2-18 yr)

Jones RW Obstet Gynecol 1994;84:771

VIN III

Presentation:

Pruritus or irritation 45%
Lump 25%
Soreness 24%
History of genital warts 18%
Associated lower tract neoplasia 50%
  - 80% CIN or VAIN
  - 20% cervical cancer or vault cancer

Jones RW Obstet Gynecol 1994;84:771
**Imiquimod (Aldara) Therapy of VIN**

- Under study in trials now
- 4 cases of VIN 3
- All self-administered 3x/week for up to 16 weeks
- All 4 cases cleared in area treated

Davis G J of Repro Med 2000;45:619

**Management of Vulvar Lesions Less than 2 cm**

<table>
<thead>
<tr>
<th>Biopsy</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 mm invasion</td>
</tr>
<tr>
<td>Excision</td>
</tr>
<tr>
<td>&gt; 1 mm invasion</td>
</tr>
</tbody>
</table>

Radical Excision
1 cm margin
+i
Ipsilateral Groin Dissection
Simplex VIN

- Likely precursor of HPV-negative vulvar invasive SCC – seen often with lichen sclerosis and squamous hyperplasia – thickened areas
- More subtle than classic VIN
- Over expression of P53 mutants – 83% of cases
- Post menopausal women – average age 67 years
- Only 1 in 4 women have history of cigarette smoking

Skin Incision for the “Butterfly” Radical Vulvectomy Procedure


Skin Incisions for the “Triple Incision” Technique of Radical Vulvectomy and Groin Node Dissection


Skin Incisions for Lateralized Lesions


Skin Incisions for Lateralized Lesions


Cancer of the Vulva

- Relatively rare – 3-5% of all gynecologic cancers
- Often presents as vulvar itch and/or irritation
- Squamous cell lesions predominate, but a host of other histologies are possible
- Traditional therapy has been surgery with current emphasis on tailored surgery

DiSaia PJ and Creasman WT. Clinical Gynecologic Oncology, 6th ed, 2002

Cancer of the Vulva

Anatomy (1)
- Mons pubis, labia majora and minora, clitoris, vestibule and perineal body
- Borders – superiorly by the anterior abdominal wall, laterally at the labiocrural fold and posteriorly by the anus.
- Rich blood supply derived primarily from the internal pudendal artery and the superficial and deep external pudendal arteries

DiSaia PJ and Creasman WT. Clinical Gynecologic Oncology, 6th ed, 2002
Cancer of the Vulva

Anatomy
- Lymphatics run anteriorly through the labia majora, turn laterally at the mons pubis and drain into the inguinal lymph nodes.
- Lymphatic channels do not cross the labiocrural fold and generally do not cross the midline except at the clitoris as perineal body.


Cancer of the Vulva

Epidemiology
- Strong association between HPV infections of the vulva and later development of vulvar cancer has been reported.
  - HPV 16 is most commonly identified – others are HPV 6 and 33.
  - HPV DNA can be identified in 70-80% of VIN, but only 10-50% of invasive lesions.
  - Cigarette smoking also associated with VIN.
  - Both HPV history and smoking increases risk 35-fold.


Cancer of the Vulva

Diagnosis
- Usually present with pruritus and a lesion.
- Biopsy most suspicious areas.
- 1% Xylocaine with a dental needle.
- Technique of biopsy.


Cancer of the Vulva

Patterns of Spread
1. Local growth.
2. Spread to regional lymph nodes.
3. Hematogenous dissemination.
   - Cross drainage to opposite groin is rare for lateralized lesions, but occurs with midline lesions.
   - Drainage stays medial to the labiocrural fold.


FIGO Staging of Invasive Cancer of the Vulva

<table>
<thead>
<tr>
<th>Stage</th>
<th>Carcinoma in situ, intraepithelial carcinoma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage I</td>
<td>Tumor confined to the vulva and/or perineum – 2 cm or less in greatest dimension (no nodal metastasis)</td>
</tr>
<tr>
<td></td>
<td>Stage Ia: Lesions 2 cm or less in size confined to the vulva or perineum and with stromal invasion no greater than 1.0 mm (no nodal metastasis)</td>
</tr>
<tr>
<td></td>
<td>Stage Ib: Lesions 2 cm or less in size confined to the vulva or perineum and with stromal invasion greater than 1.0 mm (no nodal metastasis)</td>
</tr>
</tbody>
</table>

FIGO Staging of Invasive Cancer of the Vulva
(Continued)

Stage II
T2 N0 M0 Tumor confined to the vulva and/or perineum – more than 2 cm in greatest dimension (no nodal metastasis)

Stage III
Tumor any size with
T3 N0 M0 (1) Adjacent spread to the lower urethra and/or the vagina, or the anus, and/or
T3 N1 M0 (2) Unilateral regional lymph node metastasis
T1 N1 M0
T2 N1 M0


Current ISSVD Terminology

A. Vulvar pain related to a specific disorder, i.e., infectious, neoplastic, etc.
B. Vulvodynia
   1. Generalized
      a. provoked
      b. unprovoked
      c. mixed
   2. Localized
      (vestibulodynia, clitorodynia)
      a. provoked
      b. unprovoked
      c. mixed

Adapted from Moyal-Barracco and Lynch. *J Reprod Med*. 2004

Vulvar Pain Syndrome

• Medical Therapy
  1. Tricyclic antidepressants
     e.g. amitriptyline 10-25 mg → 75-100 mg
  2. Anticonvulsants
     e.g. gabapentin 100-300 mg daily → tid
  3. Topical lidocaine
     e.g. soak a cotton ball and apply nightly for 6-8 weeks
  4. Capsaicin cream – used for post herpetic neuralgia depletes substance P from neurons

• Biofeedback
  1. Surface electromyographic biofeedback
  2. Physical therapy with daily exercises reduces spasm and muscle instability
  3. Goal is to break the cycle of pain
VIN

- 405 cases – 1962-2003
- Positive margins – 50% recurrence
- Negative margins – 15% recurrence
- 2% invasive rates in treated area within 2.4 years
- Spontaneous regression occurred in 47 women – median 9.5 months

Jones RW et al. Obstet & Gynecol, Vol 106; No. 6, 2005

Vulvodynia is defined as vulvar discomfort most often described as burning pain occurring in the absence of relevant visible findings or a specific clinically identifiable neurologic disorder.

Bachmann G and Rosen RC. Menopause Management, Mar/Apr 2006

Essential Vulvodynia

Dysethetic vulvodynia is characterized by the following.

- Diffuse pain that may be constant or intermittent;
- Pressure/touch is not the cause of symptoms, but may exacerbate them;
- Usually diagnosed in peri- and postmenopausal women;
- Diagnosis in the older woman should be considered after estrogen depletion etiology is excluded; and
- Symptoms are not usually related to a specific “trigger” event.

Bachmann G and Rosen RC. Menopause Management, Mar/Apr 2006


A. Vulvar pain related to a specific disorder
   1. Infectious (e.g., candidiasis, herpes, etc.)
   2. Inflammatory (e.g., lichen planus, immunobullous disorders, etc.)
   3. Neoplastic (e.g., Paget’s disease, squamous cell carcinoma, etc.)
   4. Neurologic (e.g., herpes neuralgia, spinal nerve compression, etc.)

B. Vulvodynia
   1. Generalized
      a. Provoked (sexual, nonsexual, or both)
      b. Unprovoked
      c. Mixed (provoked and unprovoked)
   2. Localized (vestibulodynia, clitorodynia, hemivulvodynia, etc.)
      a. Provoked (sexual, nonsexual, or both)
      b. Unprovoked
      c. Mixed (provoked and unprovoked)

Contemporary OB/GYN, January 2007