Vulvar Pathology - Diagnosis

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Objectives

• Anatomy & physiology of the vulva
• Risk factors for vulvar conditions
• Evaluation and diagnosis of common vulvar dermatoses
• Biopsy considerations
• Pre-cancerous lesions
Anatomy of the Vulva

• Components of the vulva
  – Mons pubis
  – Labia majora
  – Labia minora
  – Vestibule of the vagina
  – Hymen
  – Glands (Bartholin, Skene)
  – Clitoris
  – External Urethral Orifice

• Relevant anatomy
  – Perineum
  – Anus
Superficial Anatomy of the Vulva

**Mons pubis**
- overlying pubic bone
- stratified squamous epithelium
- hair-bearing skin
- adipose tissue

**Labia majora**
- adipose tissue
- stratified squamous epithelium
- laterally hair-bearing (pilosebaceous units)
- medially hairless

**Labia minora**
- no hair follicles
- Variable: ~5cm length, 5mm thick
Superficial Anatomy of the Vulva

Vestibule of the vagina
• Boundaries: hymen, clitoris, posterior fourchette, Hart line

Bartholin Glands
• Vestibular glands
• Posterior-lateral ducts

Skene Glands
• Homologous to prostate
• Posterior-lateral to urethra

Superficial Anatomy of the Vulva

- Clitoris
- External Urethral Orifice

Superficial Anatomy of the Vulva

Mons pubis
Labia majora
Labia minora
Vestibule of the vagina
Bartholin Glands
Skene Glands
Clitoris
External Urethral Orifice

Hymen

Perineum

Anus

Blood supply to the vulva

- **Internal pudendal artery** – main supply
  - Inferior rectal artery
  - Labial/ perineal arteries
  - Artery of the bulb
  - Dorsal & Deep arteries of the clitoris

- **External pudendal artery** (superficial and deep)

Nerve supply to the vulva

- Ilioinguinal nerve
- Genitofemoral nerve
- **Pudendal nerve** – main supply
- Perineal nerves
- Dorsal nerve of the clitoris
- Posterior femoral cutaneous nerve

The TeachMeSeries 2017
Lymphatic drainage to the vulva

- Vulva drains to superficial inguinal nodes
- To deep inguinal / femoral nodes
- External iliac nodes
- Para-aortic nodes

Evaluation of the vulva - History

- Premenarchal, Menstruating, Pregnant, Postmenopausal
- PMH: Diabetes, inflammatory medical conditions (Behcets, Oral lichen planus, psoriasis)
- Gynecologic dysplasia
- Sexually transmitted infections
- Urinary incontinence
- Chronic Diarrhea
History

• Use of tampons, pads, both, deodorant
• Symptoms change with coitus, menses, clothing, activity, diet?
• Estrogen replacement?
• Use of vulvar hygiene products, douche, hot tub/spa, which laundry products, underwear fabric?
• Other family / spouse with similar sx$s$?
• Recent antibiotic use? Associated with vaginal symptoms or discharge?
History

• Identify the main symptom
  – Pruritus
  – Pain
  – Mass / nodule
Evaluation of the vulva - Exam

• Inspect thoroughly
  – Consider magnification and fluorescent lamp
  – Colposcopy not used routinely unless evaluating for dysplasia
• Photography
• Speculum exam
• Bimanual exam
Exam – Describe

- Macules – flat
- Papules – well-defined and elevated
- Plaque – elevated but flat
- Verruca – elevated and horny / textured
- Ulcer – depressed defect
- Tumor – growth within the skin or subcuticular tissue
Exam - Describe

• Size

• Color (hyper- vs hypopigmented, white, red, purple, black, dusky, necrotic)

• Tenderness (exquisite vs sore)

• Location (R/L; labia minora, majora, mons; o’clock)

• Surrounding tissue (erythema, hair-bearing)

• Distribution (figure-of-eight, involving perianal region)
Exam - Describe

- Photographic documentation of baseline
- Photograph progress with therapy
- Discuss use of photography with patient and sign appropriate consent
Biopsy

- Especially valuable if hyperpigmented
- Clean conditions with sterile instrumentation
  - Antiseptic solution to skin
  - Local anesthesia
    - 20% benzocaine spray
    - 1% lidocaine injection using a 27-gauge or smaller needle
  - Keyes punch biopsy vs excisional biopsy with scalpel (15-blade)
Biopsy

• Closure of wound:
  – Suture
    • absorbable 4-0 polyglactin (Rapide) or chromic or plain gut on a cutting needle
    • If on tension, consider permanent suture with later removal
  – Materials
    • Needle driver
    • Hemostat
    • Scissors
    • Tissue Forcep / grasper
  – Hemostatic agents
    • Monsel solution
    • Silver nitrate
Diagnostic tests

- Biopsy for dermatopathologist
- Tzanck smear – herpes
- Mineral oil – mite / lice
- KOH (Potassium Hydroxide) – candida, tinea, scabies
- Saline wet preparation – candida, trichomonads
- Patch tests – contact dermatitis
Types of lesions

White lesions
- Lichen sclerosus
- Lichen simplex chronicus
- Lichen planus

Red lesions
- Contact dermatitis
- Psoriasis
- Atrophy

Ulcers
- HSV
- Behcet’s disease

Small tumors
- Condyloma
- VIN
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The “Lichens”

• Gross description
• Rough textured appearance on smooth surface
• Histologically different entities
  – Lichen simplex chronicus
  – Lichen planus
  – Lichen sclerosus
Lichen simplex chronicus

• Most common of “lichens”

• Clinical: pruritis often preceded by a trigger
  – *Found in presence of other dermatoses*
  – R/o other conditions first

• Exam:
  – Thickened skin
  – Hyperpigmented
  – Excoriation markings

• Histologic description:
  – Hyper- and parakaratosisis
Lichen sclerosus

- 1 in 60 patients in GYN specialty practices
- Bimodal: prepubertal & postmenopausal
- Clinical: pruritis at night
  - Progressive in severity (pain, dyspareunia, dysuria, fissures, scarring)
  - 1/3 Asymptomatic
Lichen sclerosus

- Misdiagnosed as atrophy
- Exam: “cigarette or parchment paper”
- Wrinkled, whitened, thinned, shiny
- Keyhole or figure of eight
- Clitoris, prepuce, labia minora, majora & perineal body
- Resorption, agglutination
Lichen sclerosus

Progression from early to late disease

Architectural asymmetry and start of loss

Resorption and fusion

Keyhole & fissure appearance
Lichen sclerosus

• Histology: epidermal atrophy with loss of rete ridges, collagen homogenization, hyperkeratosis of epidermis

• Biopsy *prior* to treatment
Lichen sclerosus & Cancer

- LS has a 3-5% increased risk of genital cancer
- RR>260
- 60% of vulvar SCC arises from tissue affected by LS
- Watch for new lesions, ulcers or nodules
- Follow-up regularly
- Biopsy – Re-biopsy if refractory
- LS-associated SCC makes early detection difficult & progression to invasion may be fast (6 months)
- Discuss with patients the risk of vulvar cancer

Sexual Medicine Reviews 2015
Lichen Planus

• “5 Ps”: Purple Polygonal Papules & Plaques that are Pruritic

• Exogenous disease (mouth, inner wrist, anterior shin)
  – Oral: Wickham striae on buccal mucosa
Lichen Planus

- Histology: bandlike-chronic inflammatory infiltrate of lymphocytes
- Difficult in late stages because of erosion of layers of skin
  - Super-infection common
  - Lichen simplex co-exists due to pruritis (itch-scratch cycle)
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Contact Dermatitis

- Inflammation due to irritants
  - Chemical (soap / lotions, wet napkins, urine)
  - Physical / mechanical (tight clothing, obesity)
- Damage exceeds skin’s repair mechanism
- Exam: Sharply demarcated, papules / plaques; weeping

Classic “diaper rash” appearance anywhere irritant contacts:
Psoriasis

• Red plaques with scaling on edges
• Grey-white “fissuring” with cracks in intertriginous area
• Extra-genital symptoms common
• Symptoms chronic and relapsing
• Histology: hyperplasia of rete ridges
Vulvovaginal Atrophy

- May occur anytime hypo-estrogenism
  - Postpartum lactational atrophy
- Menopausal most common
- Decrease estrogen and progesterone
  - Less blood flow
  - Thinning epithelium
  - Less exfoliation of skin
  - Less lactobacillus
Vulvovaginal atrophy

• Vulva loses subcutaneous fat
  – Labia majora & mons thin
  – Introitus exposed
  – Fusion of labia
  – Pale vs red with inflammation

• Symptoms of lack of lubrication, superficial tears, dyspareunia
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HSV (Herpes Simplex Virus)

- Genital Herpes can be caused by HSV 1 or 2
  - Up to 50% of genital herpes is HSV 1
  - Sexually transmitted
- Primary infection:
  - Flu-like symptoms
  - Painful vesicles
- Recurrent HSV:
  - May be asymptomatic
  - Months or years later

- Testing
  - From lesions
    - Viral culture
    - Polymerase chain reaction (PCR)
    - Direct fluorescence antibody
  - From blood
    - Type-specific serology

- Tzanck smear
  - Scraping active lesions to look for multinucleate giant cells
HSV (Herpes Simplex Virus)

Lesions may be classic or mimic other diseases:

• Classic: discrete fluid-filled vesicles
• Other presentations:
  – Ulcers
  – Fissures
  – Crusted lesions / superimposed bacterial infection

• PAINFUL
Behcet’s disease

• Systemic disease

• Mucocutaneous lesions
  – Diagnosis dependent upon genital and oral ulcerations

• Painful ulcers – persistent and deep
  – Sloughy appearance
  – Labia minora most common site
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Condyloma

- HPV (Human papilloma virus)
  - Sexually transmitted
  - Vertical transmission
- Genital warts
  - Many asymptomatic
  - May be exacerbated in pregnancy
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VIN (Vulvar Intraepithelial Neoplasia)

- Squamous lesions of vulva
  - Often related to HPV
- No routine screening
- Symptoms: pruritis, pain / burning, lesion
  - Multi-focal
  - Mimics other conditions
- Diagnosis with BIOPSY & colposcopy
  - Refractory symptoms
VIN (Vulvar Intraepithelial Neoplasia)

- 2015 ISVVD* terminology
  - Low-grade (LSIL) squamous intraepithelial lesion of the vulva
    - Flat condyloma
    - Human papillomavirus effect
  - High-grade squamous intraepithelial lesion
    - Vulvar HSIL, VIN usual type
  - VIN differentiated type (dVIN)

*International Society for the Study of Vulvovaginal Disease
Stay calm...

https://clinicalgate.com/vulvar-dermatoses-and-infections/
Carry on...

https://clinicalgate.com/vulvar-dermatoses-and-infections/
Algorithms help

https://clinicalgate.com/vulvar-dermatoses-and-infections/
Summary

• General understanding of anatomy
• How to take a comprehensive history to assist your diagnosis
• Examination using photography and proper terminology is essential
• How to biopsy
• Tour of lesions (white, red, ulcers, tumors, VIN)
• Algorithm to help identify type / class of lesions
References

- Vulvar Pruritus and Lichen Simplex Chronicus. Obstetrics and Gynecology Clinics; 2017 Sep; 44(3): 379-388