Genital Dermatology

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Disclosure

- No conflicts of interest

Objectives

- Identify common genital dermatological conditions.
- List appropriate diagnostic approaches to common genital dermatological conditions.
- Describe appropriate management of common genital dermatologic disorders.
- Demonstrate good local anesthetic perfusion technique.
- Perform a skin biopsy with skill and precision.
- Perform basic interrupted suture insertion.

Comparative Anatomy

Variants of Normal

Fordyce spots
Variants of Normal

- Benign papillae

Physiologic hyperpigmentation

Pruritus

- **Idiopathic**
  - Tissue appears normal
  - Characterized by scratching or rubbing
  - Itch-scratch cycle
  - Probably a subclinical variant of atopic dermatitis

- **Atopic dermatitis**
  - Allergic IgE reaction to common environmental allergens (eczema)
  - History of allergies or asthma
  - Localized form: Lichen Simplex Chronicus

Variants of Normal

Red Plaques and Patches

- **Atopic dermatitis**
- **Contact dermatitis**
- **Irritant Contact dermatitis**
- **Allergic contact dermatitis**
- **Seborrheic dermatitis**

Algorithm for Diagnosis of Genital Disorders

Are there visible changes?

- **No**
  - Only symptoms
  - Pruritus
  - Pain

- **Yes**
  - Lifted/removed epithelium
  - Fissures
  - Ulcers
  - Lesions are red, but epithelium is intact
  - Fissures and plaques
  - Papules and nodules
  - Lesions, but other than red
  - Skin-colored
  - White
  - Brown/Black/Blue

- **Psoriasis**
- **Tinea cruris**
- **Erythrasma**
- **Candidiasis**
- **Lichen planus**
- **Extramammary Paget disease**
- **Intraepithelial neoplasia**

Lichen Simplex Chronicus
Lichen Simplex Chronicus

- **Cause:** Not known, probably genetic predisposition
- **Heat, sweat triggers**
- **Diagnosis:** Based on clinical findings
- **Biopsy** not very helpful in finding underlying problem

**Consider:**
- **Wet mounts:** Rule out candidiasis
- **KOH:** For dermatophyte fungi (tineas)
- **Biopsy** helpful if there is loss of architectural landmarks (labia minora) in women to rule out lichen sclerosis

**Management Goals:**
- **Breathable fabrics**
- **Weight loss**
- **Manage** fecal, urinary, vaginal secretions
- **Stop** excessive bathing
- **Lubricant/Barrier**
- **Topical steroids** (ointment, high potency) for a month or until clinical improvement
- **Antihistamines**

Allergic Contact Dermatitis

- **Immunological response**
- **Cell-mediated delayed hypersensitivity reaction**
- **OTC preparations:** Benzocaine, bacitracin, spermicides, parabens, fragrances
- **Latex:** IgE response, immediate reaction

Irritant Contact Dermatitis

- **Eczematous reaction to a substance on the skin**
- **Most data on women**
- **Irritation, soreness, rawness**
- **Urine, feces, soap, antifungal creams, panty liners, spermicides**
- **TCA, imiquimod, podophyllin products**

- **Identify and eliminate irritants**
- **Mid-potency topical steroid**
- **Barriers:** Zinc oxide, lubricants
- **Tepid soaks**

Seborrheic Dermatitis/Intertrigo

- **Located where moisture is retained** (sweat, urine)
- **Maceration**
- **Skin folds**
- **Crural folds**
- **Axillae**
- **Umbilicus**
- **Indistinct margins**
- **Red patches and scale**

**Diagnosis:** Clinical
- **Can have superimposed candida**

**Management**
- **Reduce** heat and moisture
- **Topical corticosteroids**
- **Hydrocortisone 1-2.5%**
- **Triamcinolone 0.1%**
- **Topical ketoconazole cream BID**

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Candidiasis

- Diagnose with KOH prep
- Management:
  - Eliminate heat, moisture
  - Topical azoles BID until clear
  - Attention to DM, obesity, immunocompromised patients

Tinea Cruris

- Diagnose:
  - KOH prep from skin scraping
- Management:
  - Topical azoles 1-2x day until clear
  - Hair follicle involvement: oral therapy (i.e. fluconazole 100-200mg/day for 1-2 weeks)
  - Topical triamcinolone 0.1% first few days

Candidiasis

- Diagnose with KOH prep
- Management:
  - Eliminate heat, moisture
  - Topical azoles BID until clear
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Erythrasma

- Mimics tinea cruris
- Found mostly in men
- Proximal, medial thigh and crural crease
- Scrotum, penis, vulva usually not affected
- Corynebacterium minutissimum, bacteria prevalent in warm environments
- Diagnosis:
  - Clinical exam
  - Wood’s light fluorescence (coral-pink)
  - Negative KOH prep
- Treat with Erythromycin 500 mg BID for 1-2 weeks

Tinea Cruris

- Diagnose:
  - KOH prep from skin scraping
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Psoriasis

- Affects 2-3% of people
- Onset: young adults
- Etiology: genetic, autoimmune, environmental
- Contributing factors: alcohol, smoking, obesity, medications (NSAIDs and lithium)
- Rapid proliferation of epidermis
- Associated arthritis
- Plaques and silvery scales on scalp, elbows, knees, gluteal cleft, genitals
- 20% with Koebner's phenomenon
- Inverse psoriasis: skin folds
- Genitalia
- Women: affects hair-bearing areas (vulva)
- Men: glans, shaft, scrotum, groin
- Rapid proliferation of epidermis
- Associated arthritis

Psoriasis

- Diagnosis:
  - Other psoriatic lesions!
  - Biopsy helpful, but can be nonspecific in older lesions
  - Negative fungal scrapings/cultures
  - No response to antifungal medication

- Management:
  - Potent topical corticosteroids with tapering doses
  - Triamcinolone 0.1%
  - Ultraviolet light of little use to genitalia
  - Oral methotrexate
  - Immunosuppressant agents

Lichen Planus

- Different clinical presentations
- Autoimmune disorder, cell-mediated
- Usually self-limiting
- Resolves in few years

Lichen Planus
Lichen Planus

- Diagnosis:
  - Clinical findings
  - Biopsy
  - Differential: Bowen disease, candidiasis, psoriasis, herpes

- Management:
  - Topical corticosteroids (clobetasol 0.05% and taper down)
  - Short burst of oral prednisone if needed

Extramammary Paget’s Disease

- Primary or secondary forms
- Onset usually >50
- More common in women
- 10-20% with underlying GU/GI malignancy
- Initial symptom: pruritus
- Presentation:
  - Well-demarcated red plaque
  - Rough, scaling or moist surface
  - White thickened islands
  - Erosions

Plasma Cell Mucositis

- Poorly understood
- Onset after puberty
- Deep red solitary plaque
- May erode, bleed
- Related to lichen planus?

Diagnosis by biopsy

Management:

- No good therapy
- Circumcision
- Potent topical steroids?
- Imiquimod?
- CO2 or YAG laser?

Extramammary Paget’s Disease

- Diagnosis
  - Clinical suspicion
  - Resembles benign skin disorders and Bowen’s disease
  - Biopsy

Management: excision

- <1 mm invasion: good prognosis
- Laser, radiation, imiquimod
- >1 mm invasion: node evaluation
  - Determine primary or secondary
  - Evaluate for GU/GI malignancy

Plasma Cell Mucositis

Intraepithelial Neoplasia

- Non-invasive but full thickness dysplasia
- Many types
  - HPV-related
  - Bowen’s disease: older
- Presentation
  - Well-demarcated plaques, scaling, hyperkeratosis
**Intraepithelial Neoplasia**

- **Bowen Disease/VIN/PIN**
  - Undifferentiated:
    - HPV 16, 18, 31, 33
    - 2/3 – full thickness
  - Differentiated:
    - Lower 1/3 of epithelium
    - No HPV link
  - Lesions may be accentuated with 5% acetic acid
  - White, red, skin colored plaques
  - Diagnosis: biopsy
  - Management: surgical, imiquimod, laser

- **Undifferentiated:**
  - HPV 16, 18, 31, 33
  - 2/3 – full thickness

- **Differentiated:**
  - Lower 1/3 of epithelium
  - No HPV link

**Bites & Infestations**

- Insect bites on genitals are rare
- Nodular scabies
  - Almost exclusively in males
  - Presentation
    - Red-brown dome-shaped papules
    - Glans, shaft, scrotum
  - Diagnosis: biopsy
  - Management: scabicide

**Red Papules and Nodules**

- Folliculitis
- Keratosis pilaris
- Bites & infestations
- Angiomas, angiokeratomas
- Prurigo nodularis
- Pyogenic granuloma
- Urethral caruncle
- Vulvar endometriosis
- Hematoma
- Kaposi Sarcoma

**Cherry Angiomas & Angiokeratomas**

- Prurigo nodularis (Picker’s Nodules)
  - Increased keratin
  - Results from chronic scratching, picking
  - May have underlying folliculitis
  - Diagnosis: Biopsy
  - Differential: Scabies
  - Treat:
    - Intradermal triamcinolone
    - Liquid nitrogen
    - Nighttime sedation
    - SSRIs

**Keratosis Pilaris**

- Common in children, disappears in 4th decade
- Clusters of papules
- Excess keratinization of outer hair follicles
- Noninfectious
- Management
  - Bath soaks/loofah
  - Moisturizer

**Prurigo Nodularis (Picker’s Nodules)**

- Increased keratin
- Results from chronic scratching, picking
- May have underlying folliculitis
- Diagnosis: Biopsy
- Differential: Scabies
- Treat:
  - Intradermal triamcinolone
  - Liquid nitrogen
  - Nighttime sedation
  - SSRIs
Pyogenic Granuloma
- Benign neoplasm
- Cause unknown, may be second to trauma
- Pregnancy
- Management: shaved excision

Hematoma

Urethral Caruncle & Prolapse

Vulvar Endometriosis
- Cyclic enlargement and pain with menses
- Implantation may occur during parturition
- Diagnosis: presumptive, by clinical presentation
- Management: refer for surgical excision
- May require hormonal suppression

Kaposi Sarcoma

Crohn’s Disease
- Asymmetrical edema
- Linear ulcers
- Fistulae
- Also: skin tags, papules, nodules
Pustular Lesions
- Folliculitis
- Furuncles
- Carbuncles
- Hidradenitis suppurativa

Solid lesions that appear pustular:
- Epidermal cysts
- Molluscum contagiosum

Folliculitis
- Irritant: shaving
- Fungal: middle aged and older men (tinea)
- Bacterial:
  - Staphylococcus
  - No known risk factor
  - Pseudomonas
  - Bathing suits
  - Hot tubs

Folliculitis
- Etiology: bacterial, fungal, or irritant inflammation of follicle
- Superficial

Furuncles
- Involves deeper follicle
- Red, painful nodules
- Rupture and drain
- More common in immunosuppression, diabetes
- Usually S. aureas

Folliculitis
- Diagnosis
  - Clinical presentation
  - Culture
  - Management
  - Bacterial: oral, topical antibiotics
  - Fungal: oral antifungal
  - Irritant: avoid shaving

Furuncles
- Diagnosis:
  - Clinical presentation
  - Culture: S. aureus
  - Clinical confusion:
  - Hidradenitis
    - Limited to genital and axillary areas
    - Has comedones and scarring
  - Cultures: normal skin flora

Management
- Oral antibiotics
- Clindamycin
- Warm soaks
- Incision and draining
**Carbuncles**

**Hidradenitis Supperativa**

- Presentation
  - Fluctuant, draining nodules
  - Location
  - Sinus tracts and scars
  - Comedones
  - Wide range of severity
- Diagnosis
  - Clinical presentation
  - Chronicity

**Hidradenitis Supperativa**

- Cystic acne of skin folds
- Affects groin, axillae, inner thighs, vulva, scrotum
- Occurs after puberty
- Strong association with smoking

**Epidermal Cysts**

- Obstructed hair follicles that are distended with keratin
- White, skin colored, or yellow
- Occasional inflammatory response from keratin
- No treatment necessary

**Molluscum Contagiosum**

- May be transmitted sexually
- Genital, thighs
- Dome papules, may be umbilicated
- May be inflamed, pruritic
- Poxvirus
- Resolve spontaneously
- May use topical destruction, imiquimod
Erosive and Vesicular Lesions
- Herpes Simplex
- Impetigo
- Pemphigus
- Hailey-Hailey disease
- Bullous erythema multiforme
- Fixed drug eruptions
- Trauma/artifact
- Malignancies

CDC Guidelines on HSV 2 Serology
- Appropriate for:
  - Recurrent/atypical symptoms and negative cultures
  - Clinical fit, no lab confirmation
  - Partner with genital herpes
- Consider in:
  - STD visit, person with multiple partners
  - Person with HIV
  - MSM with risk for HIV
- Inappropriate for:
  - General screening

Herpes Simplex
- Clinical appearance can be confusing
- Vesicular and erosive presentations
- Differentiate from other ulcerative disorders, folliculitis
- Culture: false negatives
- PCR: test of choice

Impetigo
- S. aureas
- Fragile blisters
- Round lesions with collarettes
- Streptococcus spp.
- Erosion and crusting
- Diagnosis
- Clinical suspicion
- Culture
- Management
- Antibiotic therapy (clindamycin)
Pemphigus

- Pemphigus vulgaris
- Autoimmune intraepidermal disorder
- Mucosal flaccid blisters and superficial erosions
- Later stage: hyperkeratotic skin
- Includes genitals & rectum
- Cervix: Pap may show LGSIL
- Penis: on glans, corona, distal shaft
- Diagnosis: biopsy
- Management: systemic steroids

Bullous Erythema Multiforme

- Stevens-Johnson Syndrome
- Hypersensitivity reaction
- Self-limiting
- Blistering forms may affect mucosal surfaces
- Rupture quickly leaving erosions
- Heal quickly after inciting agent is removed
- Scarring can be severe
- Vaginal synechiae
- Penile phimosis (uncircumcised)

Hailey-Hailey Disease

- Familial pemphigus
- Recurrent small blisters and crusted erosions
- Sites: intertriginous zones, perianal area
- Evolve into thickened macerated plaques
- Diagnosis: Shape, FHx, Rx
- Management: supportive
- Topical/oral antibiotics
- High-potency topical steroids

Bullous Pemphigoid

- Common autoimmune blistering disease
- Intense pruritus precedes blisters
- Rare genital involvement
- On keratinized skin
- Onset: elderly
- Diagnosis: Biopsy
- Management:
  - Topical or systemic steroids

Pemphigus Vulgaris & Vegetans

- Large erosions heal without scarring
- Superficial crusting plaques of vegetans

Hailey-Hailey Disease

- Familial pemphigus
- Recurrent small blisters and crusted erosions
- Sites: intertriginous zones, perianal area
- Evolve into thickened macerated plaques
- Diagnosis: Shape, FHx, Rx
- Management: supportive
- Topical/oral antibiotics
- High-potency topical steroids
Fixed Drug Eruptions
On keratinized skin:
- Well-demarcated
- Edematous, erythematous, round
On mucosal areas:
- Blister and erode quickly
- Shape irregular
- Burning

Diagnosis:
- History of recent drug ingestion
- Biopsy

Management:
- Identification and elimination of offending medication
- Supportive therapy

Traumatic Lesions
Diagnosis:
- History: event is immediately painful
Typical insults:
- Chemical burn
- Chemicals in creams
- Thermal
- Surgery
- Zippers
- Bites
- Miscellaneous

Management: soaks, infection control, pain treatment

Erosive Malignant Lesions
Basal Cell Carcinoma
- 5% of genital cancers
- Increased incidence in fair-skinned, older
- Itching
- Rolled edges, telangiectasias
- Local invasion and necrosis
- Rare metastases
- Diagnosis: biopsy
- Treat: local excision

Squamous Cell Carcinoma
- 90% of genital cancers
- Sites of chronic inflammation or HPV
- Ages >85 more common
- Red or skin colored plaques that erode
- May be lymphadenopathy
- Diagnosis: biopsy
- Management: surgical
**Other Ulcerative Lesions**

- Syphilis
- Chancroid

**Non-Red Lesions**

- **White lesions**
  - Vitiligo
  - Post-inflammatory hypopigmentation
  - Lichen sclerosis
  - Lichen planus
  - Lichen simplex chronicus
  - White sponge nevus
  - Intraepithelial neoplasia
  - Epidermal cysts
  - Molluscum contagiosum

- **Skin-colored lesions**
  - Genital warts
  - Condyloma lata
  - Molluscum
  - Skin tag (acrochordon)
  - Intraepidermal nevus
  - Lipomas
  - Basal and squamous cell carcinomas

**Other Ulcerative Lesions**

- Granuloma inguinale
- Lymphogranuloma Venereum

**White Lesions**

- Vitiligo
- Post-inflammatory Hypopigmentation

**Lichen Sclerosis**

- **Females**
  - Childhood and post-menopausal
  - Labia minora, clitoris, labial sulci (hourglass)

- **Males**
  - Childhood and later life
  - White papules and plaques on glans, prepuce, shaft

- **Skin-colored lesions**
  - Genital warts
  - Condyloma lata
  - Molluscum
  - Skin tag (acrochordon)
  - Intraepidermal nevus
  - Lipomas
  - Basal and squamous cell carcinomas
Lichen Sclerosis

- Epidermal atrophy
- Crinkled appearance
- Ecchymosis from easily damaged vessels
- Scarring of clitoral hood and uncircumcised male prepuce
- Mucosa not affected
- Extragenital sites: back, wrists, shoulders

- 4% chance of squamous cell cancer in long standing untreated LS

White Sponge Nevus

- Uncommon autosomal dominant condition
- Affects mucosal surfaces (oral, esophageal, genital)
- White, keratotic epithelium
- Diagnosis: biopsy
- Treatment: none for genital lesions

Lichen Sclerosis

Etiology
- Lymphocyte-mediated inflammation
- Autoimmune disorder?

Diagnosis
- Clinical presentation
- Biopsy of crinkled or ecchymotic area

Management
- Ultra-potent topical steroid (clobetasol)
- Apply nightly
- Reduce frequency with symptom improvement
- Men: usually require circumcision
- Careful long term follow up

Skin-Colored Lesions

External Genital Warts
- Condyloma Latum

Skin Tags (Acrochordons)

- Fibroepithelial polyps
- Soft, skin-colored/tan
- Inguinal folds, inner thigh, buttocks, rare on penis
- Not on modified mucous membranes
- Diagnosis: clinical
- Treatment: none needed
Lipomas
- Rare
- Soft, smooth, skin-colored, mobile
- Labia majora and peritlitoral areas
- Diagnosis: clinical
- Treatment: not needed unless bothersome

“VIN” and Invasive Cancer
- HPV-Related
  - Flat topped papules, plaques
  - Multiple lesions
  - Red, brown, skin-colored
  - Younger women
  - Vestibule, labia majora and vulva, perianal
- Non-HPV Related
  - Solitary lesions
  - Pink, red, white
  - Nodule, ulcer
  - Older women
  - Vestibule, labia minora
  - Association with lichen sclerosis and lichen planus

Squamous Carcinoma
- HPV-Related
  - Variegated appearance
  - Pink
  - Red
  - Brown
  - Black
  - Skin-colored
  - Longer stage from in-situ to invasive
  - Younger men
  - Multiple lesions
  - Shaft, perianal
- Non-HPV Related
  - Less variegated
  - Red
  - White
  - Skin-colored
  - More rapid progression from in-situ to invasive
  - Older men
  - Solitary lesions
  - Glans, corona, prepuce
  - Association with lichen sclerosis

VIN & SCC
- VIN
- SCC

“PIN” and Invasive Cancer
- Older men and women
- Solitary papule, plaque, or nodule
- May be ulcerated
- Only on keratinized skin
- Women: labia majora
- Men: scrotum, penis
- Perianal: both
- Diagnosis: biopsy

Basal Cell Carcinoma
- Older men and women
- Solitary papule, plaque, or nodule
- May be ulcerated
- Only on keratinized skin
- Women: labia majora
- Men: scrotum, penis
- Perianal: both
- Diagnosis: biopsy
Pigmented Lesions
- Seborrheic keratoses
- Pigmented warts
- Intraepithelial neoplasia
- Kaposi sarcoma
- Genital melanosis
- Pigmented nevus (mole)
- Melanoma

Intraepithelial Neoplasia
- Vulva, penis, scrotum
- Tan, brown, black
- History
- Biopsy for diagnosis

Seborrheic Keratoses
- Sites: truck, genitals, lower limbs
- Sharply marginated
- Scale or waxy feel
- Cause unknown
- Biopsy to rule out malignancy

Intraepithelial Neoplasia
- Vulva, penis, scrotum
- Tan, brown, black
- History
- Biopsy for diagnosis

Pigmented Warts

Genital Melanosis
- Flat, dark, smooth
- More common on mucosa (labia minora, glans, prepuce)
- Solitary or multifocal
- Asymmetry
- More common in middle age and older
- Biopsy

Pigmented Nevus
- Common nevi: 90%
- Tan, brown, even color
- Dysplastic nevi
- Brown, asymmetry, speckling of color (with red, white, blue)
- Atypical nevi
- Like common, but larger (>6 mm)
- May have bumpy surface
- Nevi associated with lichen sclerosis
- Black, smooth
- Maculo, papular, patch
**Pigmented Nevus**

- **Common nevus**
  - No biopsy if no atypia
- **Nevus from LS**
  - Refer for biopsy
- **Dysplastic nevus**
  - Refer for biopsy
- **Atypical nevus**
  - Refer for biopsy

**Melanoma**

**Presentation**
- Black exophytic mass
- Color variegation
- Location:
  - Labia, clitoris
  - Glans, prepuce, shaft
  - Anus
- May be nodular or ulcerated
- 50% are localized disease

**Skin Scrapings for KOH**

- [https://www.youtube.com/watch?v=FohwEA5byYm](https://www.youtube.com/watch?v=FohwEA5byYm)
- [https://www.youtube.com/watch?v=ZK-K5V1S7Y0](https://www.youtube.com/watch?v=ZK-K5V1S7Y0)

**Melanoma**

- Very rare
- Occurs in older age groups (50-80)
- More common in Caucasians
- DDx: atypical nevi
- 20% are multifocal
- Genetic etiology?
- Relation to HPV?

**Local Anesthesia**

- 1% lidocaine
- May add epinephrine for vulva
- 0.5 to 1.0 mL
- 30 gauge needle

- [http://www.youtube.com/watch?v=Lxav0kAWU7H?feature=results_active_video¤playnext=1&list=PLB1008b2B6eS56A7](http://www.youtube.com/watch?v=Lxav0kAWU7H?feature=results_active_video¤playnext=1&list=PLB1008b2B6eS56A7)
Biopsy Techniques

Punch Biopsy:
http://www.youtube.com/watch?v=7CzDEok8Wmo

Shave Biopsy:
https://www.youtube.com/watch?v=nbDmMukko4s

Basic Suture Technique

http://www.youtube.com/watch?v=6P0rYs61zZw
http://www.youtube.com/watch?v=bXqvo288IF

Clinical Resources

http://dermatologymadesimple.blogspot.com/2008_10_01_archive.html

Biopsy of the Vulva

Biopsy of the Penis
http://emedicine.medscape.com/article/1997665-overview

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