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

Development of M/F External Genitals

- Urethral meatus
- Glans penis
- Prepuce
- Shaft or body of penis (corpus)
- Penoscrotal raphe
- Scrotum
- Body of clitoris
- Prepuce
- Glans clitoridis
- Urethral meatus
- Inner labia
- Outer labia
- Vagina
- Perineal raphe
- Perineal tissues including external sphincter
Variants of Normal

- Vulva
  - Fordyce spots
- Shaft of Penis
Variants of Normal

Benign papillae
Variants of Normal

Physiologic hyperpigmentation
Algorithm for Diagnosis of Genital Disorders

Are there visible changes?

- **No**, only symptoms
  - Pruritus
  - Pain

- **Yes**
  - Lifted/removed epithelium
    - Pustules
    - Blisters
    - Ulcers
  - Lesions are red, but epithelium is intact
    - Patches and plaques
    - Papules and nodules
  - Lesions, but other than red
    - Skin colored
    - White
    - Brown/black/blue

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
Red Plaques and Patches

- Atopic dermatitis
- Contact dermatitis
  - Irritant Contact dermatitis
  - Allergic contact dermatitis
- Seborrheic dermatitis
- 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
Lichen Simplex Chronicus

**Management Goals:**
- Reduce triggers in local environment
- Restore normal barrier layer function
- Reduce inflammation
- Stop itch-scratch cycle
- 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
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
Allergic Contact Dermatitis

- Immunological response
- Cell-mediated delayed hypersensitivity reaction
- OTC preparations: benzocaine, bacitracin, spermicides, parabens, fragrances
- Latex: IgE response, immediate reaction
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
Seborrheic Dermatitis/Intertrigo
Candidiasis
Candidiasis

Diagnose with KOH prep

Management:
- Eliminate heat, moisture
- Topical azoles BID until clear
- Attention to DM, obesity, immunocompromised patients
Tinea Cruris
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
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
Erythrasma
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
- Genitals
  - Women: affects hair-bearing areas (vulva)
  - Men: glans, shaft, scrotum, groin
Psoriasis
Psoriasis
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
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?
Plasma Cell Mucositis
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
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
- >1mm invasion: node evaluation
  - Determine primary or secondary
  - Evaluate for GU/GI malignancy
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
Red Papules and Nodules

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

- Common in children, disappears in 4th decade
- Clusters of papules
- Excess keratinization of outer hair follicles
- Noninfectious
- Management
  - Bath soaks/loofah
  - Moisturizer
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
Cherry Angiomas & Angiokeratomas
Prurigo Nodularis (Picker’s Nodules)

- Increased keratin
- Results from chronic scratching, picking
- May have underlying folliculitis
- Diagnosis: Biopsy
- Differential: Scabies
- Treat:
  - Intraleisional triamcinolone
  - Liquid nitrogen
  - Nighttime sedation
  - SSRIs
Pyogenic Granuloma

- Benign neoplasm
- Cause unknown, may be second to trauma
- Pregnancy
- Management: shaved excision
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
Hematoma
Kaposi Sarcoma

Figure 1: Numerous violet papules and nodules grouped in the glans penis
Crohn’s Disease

- Asymmetrical edema
- Linear ulcers
- Fistulæ
- Also: skin tags, papules, nodules
Pustular Lesions

- Folliculitis
- Furuncles
- Carbuncles
- Hidradenitis suppurativa

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

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

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

Diagnosis
- Clinical presentation
- Culture

Management
- Bacterial: oral, topical antibiotics
- Fungal: oral antifungal
- Irritant: avoid shaving
  - Loose, cool clothing
  - Oral anti-inflammatory antibiotics
Furuncles

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

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

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

Diagnosis
- Clinical presentation
- Chronicity

Management
- I&D of fluctuant lesions
- Oral antibiotics
- Surgical excision of affected areas
- Hormonal: high estrogen contraceptives (0.035mg), spironolactone
- Oral retinoids
- Isotretinoin
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
- Genitals, thighs
- Domed 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
Herpes Simplex
Herpes Simplex

Clinical appearance can be confusing
- Vesicular and erosive presentations
- Differentiate from other ulcerative disorders, folliculitis

Culture: false negatives
PCR: test of choice

Serology:
- Consult CDC guidelines: Type 2
- Conversion at 6 weeks
- Up to 80% of population with positive IgG for HSV
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
Impetigo

S. aureas
- Fragile blisters
- Round lesions with collarettes

Streptococcus spp.
- Erosion and crusting

Diagnosis
- Clinical suspicion
- Culture

Management
- Antibiotic therapy (clindamycin)
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
Pemphigus Vulgaris & Vegetans

Large erosions heal without scarring

Superficial crusting plaques of vegetans
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
Hailey-Hailey Disease

- Familial pemphigus
- Recurrent small blisters and crusted erosions
- Sites: intertriginous zones, perianal area
- Evolve into thickened macerated plaques

Diagnosis: Shape, FHx, Bx
Management: supportive
- Topical/oral antibiotics
- High-potency topical steroids
Hailey-Hailey Disease
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)
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
Fixed Drug Eruptions
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
Traumatic Lesions
# 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 >65 more common
- Red or skin colored plaques that erode
- May be lymphadenopathy
- Diagnosis: biopsy
- Management: surgical
Erosive Malignant Lesions

Basal Cell Carcinoma

Squamous Cell Carcinoma
Other Ulcerative Lesions

Syphilis

Chancroid
Other Ulcerative Lesions

Granuloma Inguinale  Lymphogranuloma Venereum
Other Ulcerative Lesions

Aphthous Ulcers

Behçet Disease
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 latum
- Molluscum
- Skin tag (acrochordon)
- Intradermal nevi
- Lipomas
- Basal and squamous cell carcinomas
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
Lichen Sclerotic

- Epidermal atrophy
- Crinkled appearance
- Ecchymosis from easily damages vessels
- Scarring of clitoral hood and uncircumcised male prepuce
- Shrinkage/loss of labia minora
- Mucosa not affected
- Extragenital sites: back, wrists, shoulders

- 4% chance of squamous cell cancer in long standing untreated LS
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
Intraepithelial Neoplasia
White Sponge Nevus

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

Oral lesion
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 mucus membranes
- Diagnosis: clinical
- Treatment: none needed
Lipomas

- Rare
- Soft, smooth, skin-colored, mobile
- Labia majora and periclitoral areas
- Diagnosis: clinical
- Treatment: not needed unless bothersome
## 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
“PIN” and Invasive Cancer

Penile Intraepithelial Neoplasia

Squamous Cell Cancer
“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
VIN & SCC

VIN

SCC
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
Seborrheic keratoses
Pigmented warts
Intraepithelial neoplasia
Kaposi sarcoma
Genital melanosis
Pigmented nevus (mole)
Melanoma
Seborrheic Keratoses

- Sites: trunk, genitals, lower limbs
- Sharply marginated
- Scale or waxy feel
- Cause unknown
- Biopsy to rule out malignancy
Pigmented Warts
Intraepithelial Neoplasia

- Vulva, penis, scrotum
- Tan, brown, black
- History
- Biopsy for diagnosis
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
  - Macule, papule, 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
- Very rare
- Occurs in older age groups (50-80)
- More common in Caucasians
- DDX: atypical nevi
- 20% are multifocal
- Genetic etiology?
- Relation to HPV?
Melanoma
Dermatologic Procedures
Skin Scrapings for KOH

- https://www.youtube.com/watch?v=FohwEA5byYM
- https://www.youtube.com/watch?v=ZK-KsV1S7Y0
Local Anesthesia

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

http://www.youtube.com/watch?v=Uxav0kAWU14&feature=results_video&playnext=1&list=PLBF100062B46E56A7
Biopsy Techniques

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

Shave Biopsy:
https://www.youtube.com/watch?v=nbdmukko4s
Basic Suture Technique

http://www.youtube.com/watch?v=6P0rYS6LeZw

http://www.youtube.com/watch?v=bXqvo2St8lE
Clinical Resources

- [http://dermatologymadesimple.blogspot.com/2008_10_01_archive.html](http://dermatologymadesimple.blogspot.com/2008_10_01_archive.html)

**Biopsy of the Vulva**

**Biopsy of the Penis**
Acknowledgements

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