(PBL) Dermatologic Conditions: Family Docs Have Skin in the Game

Eddie Needham, MD, FAAFP

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Eddie Needham, MD, FAAFP

Program Director/Academic Chairman, AdventHealth Winter Park Family Medicine Residency, Florida; Clinical Professor, University of Central Florida College of Medicine, Orlando; Clinical Associate Professor, Florida State University College of Medicine, Tallahassee

Dr. Needham has been a program director for 16 years. In 2017, he received the Gold Level Program Director Recognition Award from the Association of Family Medicine Residency Directors (AFMRD) for his years of leadership and experience. He has been a requested speaker at the AAFP’s annual Family Medicine Experience (FMX) for 10 years, as well as speaking for both the Georgia Academy of Family Physicians and the Florida Academy of Family Physicians for more than 15 years. Dr. Needham practices full-service family medicine, providing care from “conception to resurrection.” In October 2018, he received the AAFP’s Chair of the Year Award for his leadership of the Care of Cardiovascular Conditions Live Course. He was recognized as the Florida AFP’s 2013 Full-Time Florida Family Physician Educator, as well as the Georgia AFP’s 2007 Teacher of the Year. It is his joy and passion to teach students of medicine the wonders of the human body and spirit.
Learning Objectives

1. Practice applying new knowledge and skills gained from Dermatologic Conditions sessions, through collaborative learning with peers and expert faculty.

2. Identify strategies that foster optimal management of dermatologic conditions within the context of professional practice.

3. Formulate an action plan to implement practice changes, aimed at improving patient care.

Associated Sessions

• Dermatologic Conditions: Family Docs Have Skin in the Game
Dermatology terms

- Macule – flat lesion < 1 cm
- Patch – flat lesion > 1 cm
- Papule – raised lesion < 0.5 - 1 cm
- Plaque – raised lesion > 0.5 - 1 cm
- Vesicle – fluid-filled blisters < 0.5 cm
- Bulla – fluid-filled blisters > 0.5 cm
- Pustule – pus-filled blisters
Get to the Noun

• “It’s an erythematous, papular, excoriated, lichenified ...” THANG
• Erythematous papule
• Lichenified plaque
• Getting to the noun gives a Ddx
• Papule → ...
• Vesicle → ...

General Principles in Dermatology

• If it’s dry, wet it.
• If it’s wet, dry it.
• If it itches, add steroids/anti-inflammatories.
• If you’re not sure, biopsy it.
Case #1

• 15 yo female presents with complaints of facial skin rash getting worse over past 6 months.
• Location
  • Face to include forehead, nose, cheeks, upper back and chest
• No fevers, weight stable, runs 3 miles 3-4 x/week, menses regular and moderate amount of flow.
• Social – family at home include Mom, Dad, and 2 younger sibs.
• Not sexually active, no EtOH or drugs of abuse
Based on Hx and PE, what is the Differential Diagnosis?

Questions to discuss at your table

• Differential diagnosis
• Final Diagnosis
• Treatment options
  • First line
  • Second line
Group answers

• Differential diagnosis?
• Final Diagnosis?
• Treatment options?
  • First line?
  • Second line?

Mild to moderate inflammatory
Acne Vulgaris
Acne Vulgaris - Pathophysiology

1. Androgen-mediated stimulation of the sebaceous gland
2. Abnormal keratinization leading to follicular plugging – comedo formation
3. Proliferation of Propionibacterium acnes within the follicle
4. Inflammation

• Genetics, stress, and diet may also play a role

Acne Classification

• Comedonal acne (no inflammation)
• Inflammatory acne (papules and pustules):
  • Mild to moderate severity
  • Moderate to Severe inflammatory acne
  • Severe Papulonodular Acne

Treatment – Comedomal Acne

• Topical retinoids are the mainstay of therapy
• Decrease formation of comedones and reduce inflammation
  • Tretinoin: Retin-A, not isotretinoin/Accutane ($40-68)
  • Adapalene ($90)
  • Tazarotene ($113)
• Treatment response of 40 – 70% within 12 weeks.
• Use a small pea-sized amount, apply the to affected areas at bedtime.

Treatment of Comedomal Acne
Topical retinoids

- **Tretinoin**: Cutaneous erythema, peeling, edema are dose-related
- **Adapalene**: Less skin irritation than tretinoin with similar efficacy
- **Tazarotene**: Most efficacious

_Titus S, Hodge J. Diagnosis and Treatment of Acne. AFP. 2012;86(8):734-740._

Benzoyl peroxide

- Over-the-counter
- Antimicrobial
- Does NOT induce resistance
- Consider using in addition with any long term topical or oral antibiotic
Treatment – Inflammatory Acne Mild to Moderate

• Topical antibiotics are the treatment of choice
  • Benzoyl peroxide
  • Azelaic acid: pregnancy category B (Azelex and Finacea)
  • Clindamycin
  • Erythromycin
  • Dual agents combining benzoyl peroxide with clindamycin or erythromycin
• Current recommendations suggest combining topical antibiotics with topical retinoids if tolerated by the patient.

Treatment – Inflammatory Acne Mild to Moderate

• Response to topical antibiotics
  • 30 to 80% improvement
  • 8 to 12 weeks of therapy
Women with acne

• For women with acne who desire birth control, oral contraceptives (OCs) are an excellent choice.
• OCs approved for acne in the USA include:
  • Orthotricyclin
  • Estrostep
  • Yaz
  • Others-35 😊
• Expected improvement from OCs alone is 40-70%.

Women with acne

• Women not responding to OCs, androgen-receptor blockers may be considered w/ 50-80% improvement:
  • Spironolactone 50-100 mg/day
    • Side effects include: diuresis, breast tenderness, menstrual irregularities
  • Flutamide 250 mg/day
    • Side effects include: GI upset, hepatotoxicity – check liver NZs
    • Is regularly used to treat prostate cancer as an antiandrogen
  • Cyproterone 50-100 mg/day
    • Side effects include: hepatotoxicity – check liver NZs
    • Is regularly used to treat prostate cancer as an antiandrogen
A 17 yo female with more severe acne presents with the exam and right.

Discuss at your table the Ddx and treatment options

<table>
<thead>
<tr>
<th>Group answers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Differential diagnosis?</strong></td>
</tr>
<tr>
<td>• “Bad” acne: caused by? E.g., Cushing’s?</td>
</tr>
<tr>
<td><strong>Final Diagnosis?</strong></td>
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<tr>
<td>• Severe or nodular or cystic or nodulocystic acne</td>
</tr>
<tr>
<td><strong>Treatment options?</strong></td>
</tr>
<tr>
<td>• First line? Isotretinoin/Accutane, derm consult</td>
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<tr>
<td>• Second line? Oral antibiotics, OCPs, derm consult</td>
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Treatment – Inflammatory Acne Moderate to Severe

• Oral antibiotics are first line therapy having both antimicrobial and anti-inflammatory properties
  • Tetracyclines:
    • Tetracycline
    • **Doxycycline (preferred over tetracycline)**
    • **Minocycline (preferred over tetracycline)**
  • Erythromycin recommended less often secondary to resistant P. acnes
  • Consider benzoyl peroxide to help reduce resistance

Treatment – Inflammatory Acne Moderate to Severe

• Response to oral antibiotics
  • 64% to 86%
  • 6 to 8 weeks of therapy
Treatment – Inflammatory Acne Moderate to Severe

• Doxycycline
  • 50 to 100 mg daily to bid
  • 20 mg per day has been studied and is effective
  • Side effects include GI upset, more chance at photosensitivity than TCN.
  • Doxycycline may be taken with food.
  • Do not use in children less than 8 years old

• Minocycline
  • 50 to 100 mg bid
  • Side effects include: vertigo, dizziness, ataxia, rare bluish discoloration to the skin.
  • Also associated with drug-induced lupus, autoimmune hepatitis, and a hypersensitivity syndrome.
  • Resistance to P. acnes is least with minocycline
Treatment of Severe Papulonodular Acne

• Oral isotretinoin/Accutane is the drug of choice.
• It is used by itself except with women using oral contraceptives (OC).
• Dose is 1 mg/kg per day for 20 weeks or a total cumulative dose of 120 mg/kg.

Isotretinoin

• Vitamin A metabolite
• Actions
  • Inhibits sebaceous gland differentiation
  • Reduces sebaceous gland size
  • Suppresses sebum production
  • Normalizes follicular epithelial desquamation
Isotretinoin

- 80 to 90% success rate.
- Retreatment over 10 years in 88 patients:
  - 23% required a second course
- Chart review after three years of 179 patients receiving 1 course
  - 35% had no recurrence
  - 16% required topical therapy
  - 27% required oral antibiotics
  - 23% required a second course


Isotretinoin

- Side Effects
  - Dry lips and dry skin
  - Decreased night vision
  - Headache
  - Epistaxis
  - Backache
  - Benign intracranial hypertension
  - Mild to moderate elevation in liver enzymes
  - Elevation in lipids, especially triglycerides
  - Depression and suicide
Isotretinoin

• It is a known teratogen, pregnancy category X
• Major malformations occur in 40% of infants exposed in the first trimester.
• Women need two negative pregnancy tests before commencing a course of therapy, and monthly thereafter
• Women need two forms of contraception during Rx.
• Women need to sign a consent form for treatment.
• Physicians currently need to be registered with iPLEDGE to prescribe.

Acne - Treatment Summary

• Comedonal acne
  • Topical retinoids
• Mild to moderate acne
  • Topical retinoids with topical antibiotics/benzoyl peroxide
• Moderate to severe acne
  • Topical retinoids with oral antibiotics/benzoyl peroxide
• Papulonodular/scarring acne
  • Isotretinoin
• Maintenance
  • Topical retinoids +/- benzoyl peroxide +/- topical antibiotic
Case #2

- 30 yo male with sore throat, myalgias, and congestion 2 weeks ago that resolved.
- Now with rash on abdomen.
- Minimal itch
- Started with spot on right abdomen and is spreading.
- Last sexual contact >6 months ago.
Questions to discuss at your table

• Differential diagnosis
• Final Diagnosis
• Treatment options
  • First line
  • Second line

Group answers

• Differential diagnosis?
• Final Diagnosis?
• Treatment options?
  • First line?
  • Second line?
Pityriasis Rosea

DDx for papulosquamous eruptions

• Viral exanthem
• Tinea corporis
• Nummular eczema
• Pityriasis rosea
• Secondary syphilis
• Lichen planus
• Guttate psoriasis
• Granuloma annulare
Pityriasis Rosea

Pityriasis Rosea
Pityriasis Rosea

What type of eczema is this?
Guttate Psoriasis

Guttate Psoriasis
Guttate Psoriasis

Guttate Psoriasis
Guttate Psoriasis

Chronic itchy lesions
Lichen Planus

Lichen Planus
Lichen Planus

Wickham’s Striae – skin and oral
Wickham's Striae

Pityriasis Rosea

• Papulosquamous eruption of undetermined cause
• May have a herald patch initially
• Oval papules and plaques
• Collarette of scale
• Lesions follow Langer’s lines
  • Christmas tree pattern on the back

Etiologies

• Purported viral etiology
• Some recent data has suggested Human herpes virus (HHV) 7
Human Herpes viridae

• HSV 1 and 2: Oral and genital herpes
• HHV 3: Varicella-Zoster
• HHV 4: Ebstein-Barr
• HHV 5: Cytomegalovirus
• HHV 6: Roseola
• HHV 7: virus in search of a disease ... PR?
• HHV 8: Kaposi’s sarcoma

Pityriasis Rosea - Treatment

• Aggressive Reassurance – lesions will resolve
• Medications:
  • Antihistamines
  • Topical steroids
  • Systemic steroids
• Usually resolves in 1-2 months. The pigmentary changes may take longer to resolve.
Antibiotics for PR

• Early data suggestive of potential benefit from erythromycin
• Data for newer macrolides, azithromycin and clarithromycin, not supportive of benefit
• Recent data using acyclovir suggests benefit

Acyclovir

• Randomized trial of 64 patients with PR Rx’d with 400mg 5xdaily for 1 week
  • At two weeks, erythema reduced in 79% treated vs 27% in untreated patients
  • At four weeks, erythema reduced 93% reduction vs 61% in untreated patients
  • Difference no longer significant at four weeks
• Second trial 38 patients treated with 800mg 5xdaily for 1 week vs 30 patients treated with vitamin C (no placebo)
  • At one week, erythema was reduced 53% in treated vs 10% in untreated patients
  • At two weeks, erythema was reduced 87% in treated vs 33% in untreated patients

Case #3

• 45 yo austic male presents for a 6 month follow up visit with his caretaker.
• PMHx – stable HTN on lisinopril 20 mg daily
• You’ve personally followed this patient for 5 years
• Exam notable for a 2x3 cm lesion on the left forearm
Questions to discuss at your table

• Differential diagnosis
• Final Diagnosis
• Treatment options
  • First line
  • Second line
Group answers

• Differential diagnosis?
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Melanoma
Differential Dx?

- Seborrheic Keratosis
- Compound/dermal nevus
- Granuloma annulare
- Basal cell cancer
- Melanoma
- Other tumor
Seborrheic Keratosis
Junctional nevus

Junctional Nevus
Compound Nevus

Dermal Nevus
Dysplastic nevi

Blue Nevus

http://dermis.net
Halo nevus
Hx: Appearance over 6-7 weeks

Normal skin previous
Questions to discuss at your table

- Differential diagnosis
- Final Diagnosis
- Treatment options
  - First line
  - Second line

Group answers

- Differential diagnosis?
- Final Diagnosis?
- Treatment options?
  - First line?
  - Second line?
This lesion is most consistent with:

A. Keratoacanthoma
B. Basal cell cancer
C. Melanoma
D. Pyogenic granuloma

Pyogenic granuloma
Pyogenic granuloma

- Short time to appear
- Often recedes spontaneously
- Mucus membranes – oral and vaginal
- If bothersome of diagnosis unclear, excisional biopsy

Diagnostic clues for keratoacanthoma

- Rapid appearance over 6-8 weeks
- Central keratin core, like a volcano
- Usually appear in sun exposed areas
- More common in men
Treatment of keratoacanthoma

• KA is now classified as a type of squamous cell carcinoma: SCC-KA type
• Excise completely with 4-5 mm margins
• The history is key to making the diagnosis in that these lesions appear rapidly; they are not slow growing.

Recommendations for clinical practice

• Use scientific nomenclature to describe lesions and create the differential diagnosis (SORT C)
• Consider punch biopsy when diagnosis of pigmented lesion uncertain (SORT C)
• Consider acyclovir for treatment of pityriasis rosea (SORT B)
• Topical steroids remain first line and effective for most dermatoses (SORT A)
Dermatology teaching sites

- [www.Dermis.net](http://www.Dermis.net)
- [Adolescent dermatology quiz](http://www.images.md)
- [www.images.md](http://www.images.md)
- [www.dermatlas.net](http://www.dermatlas.net)

Eddie Needham, MD, FAAFP

Email: Eddie.Needham.MD@AdventHealth.com
Addendum materials

• Rosacea
• Eczema, atopic dermatitis
• Benign skin tumors
• Pigmented skin lesions
Rosacea

• Chronic facial skin condition of unknown cause
• Location - Central face
  • Transient or persistent erythema, flushing, warmth
  • Telangiectasia
  • Inflammatory papules and pustules
  • Hyperplasia (thickening) of connective tissue
Rosacea

• Four subtypes
  • Erythematotelangiectatic
  • Papulopustular
  • Phymatous
  • Ocular
• One variant - granulomatous
Treatment

• Avoid triggers
• Mild cleansers, moisturizers, photoprotection with hats and SPF 30 sunscreens

Treatment

• Topical metronidazole
• Azelaic acid
• Brimonide, topical alpha-blocker to reduce erythema
• Oral doxycycline 20 mg bid and higher
• Phymatous Rx - Laser, light-based therapies
• Ocular sx – lid hygiene, topical cyclosporine, Abx
Atopic Dermatitis/Eczema

Atopic Dermatitis

- Chronic pruritic skin condition, flexural creases, lichenification over time
- “The scratch that itches”
- Onset usually before 2 years of age
- Only 10% diagnosed after age 5
- 30% of children with atopy develop asthma

Atopic Dermatitis

- Regular use of emollients after bathing
  - Wet wrap therapy for recalcitrant disease
- Topical steroids are main treatment
- Calcineurin inhibitors are second line
  - Tacrolimus ($34) and pimecrolimus ($97)
  - Black box warning – skin cancers and lymphoma

Doc, these bumps have been growing on me for the past 5 years and I’m tired of them.

Seborrheic Keratosis

• Waxy surfaced
• “Stuck on” appearing
• Slow growing
• Can excise/freeze/curette
• They are benign
Poll

These skin lesions are examples of:

A. Lipoma
B. Neurofibroma
C. Dermatofibroma
D. Seborrheic keratosis
Diagnostic clues

• Positive dimple sign
  • When the tumor is gently squeezed from the sides, it dimples down below the skin
  • Like an iceberg, the majority of the tumor is below the level of the skin
• Commonly occurs on the legs, especially in women
• Usual pigmentation is darker than surrounding skin

Treatment for dermatofibroma

• Aggressive reassurance
• Excisional biopsy if the lesion is irritating or concerning.
Well, doctors, what are these bumps?
Remember, these have pigment

• Nevi aka “moles”
• Cancers: melanoma, BCC, SCC?
• Dermatofibroma
• SK, seborrheic keratosis
• Others
• If in doubt, consider biopsy

Nevi – three types

• Junctional – cells are at the dermoeidermal junction above the basement membrane. Flat lesions.
• Compound – cells are both above the basement membrane and in the dermis. Slightly raised lesions.
• Dermal – cells are only in the dermis. Raised lesions.
Here’s a special variety of mole
Blue Nevus

Are these lesions running circles around you? Try this one on for size.
And these are...?

Yet some more types of moles with fancy names...
Nevus anemicus
And this is ...?

Nevus Spilus
(Linear) Epidermal Nevus

What are these common splotches called?

Ephelides ... AKA Freckles
Cutaneous horn
Cutaneous Horn

• Sharply excise these and send them for pathology to check for squamous cell cancer at the base.
Psoriasis
This is an example of inverse psoriasis

- **Differential Dx includes:**
  - Seborrheic dermatitis
  - Candidal intertrigo
  - Cutaneous T cell lymphoma (mycosis fungoides)

Psoriasis treatment

- Consider dermatology consult
- High potency topical steroids: group 1 often needed
- PUVA, UVB and tar
- Immunomodulators
  - (e.g., methotrexate, cyclosporine)
- Biologic agents
  - TNF alpha inhibitors: etanercept, infliximab
  - Monoclonal Abs: against interleukins or TNF-α
Psoriasis - systemic effects

- Psoriatic arthritis, classically at the sacro-ileac joint
  - Seronegative spondyloarthritis
  - Negative for Rheumatoid factor = sero(-)
- Cup in saucer deformity of distal finger tufts
- Digit swelling, dactylitis

Poll
Patient with sore throat last week and now with a diffuse rash.

A. Generalized lichen planus
B. Guttate psoriasis
C. Varicella (chicken pox)
D. Pityriasis Rosea

Guttate Psoriasis
Guttate psoriasis – diagnostic clues

• GP spares the palms and soles (vs secondary syphilis)
• Guttate pattern is classic
  • Water droplets sprinkled on skin
  • Central scale

Guttate Psoriasis

• GP is strongly associated with a preceding or concurrent GABS infection.
  • 70-80% patients
• Immune reaction to infection.
• A genetic predisposition plays an important role

Guttate Psoriasis - treatment

- Reassurance and emollients
- Topical steroids
- UVB phototherapy
- Systemic agents are rarely necessary
- Empiric treatment for streptococcal infection and tonsillectomy for recurrent attacks

Lichen Planus – the 5 P’s

- Purple
- Pruritic
- Polygonal
- Planar
- Papules and plaques
- It’s not PUPP (pruritic urticarial papules and plaques of pregnancy)
Lichen Planus
Treatment

• Topical steroids, high potency initially
• Intralesional steroids
• Antihistamines
• PUVA for generalized LP
• Kenalog in orabase for oral lesions on buccal mucosa (Wickham’s striae)

Recommendations for clinical practice - Acne

1. Topical retinoids are effective for noninflammatory and inflammatory acne (SORT A)
2. Oral antibiotics are effective for moderate to severe acne (SORT A)
3. Benzoyl peroxide should be used in conjunction with topical and oral antibiotics to reduce the risk of bacterial resistance (SORT C)
4. Topical Abx are more effective when used with topical retinoids (SORT A)
5. Combined OCPs can be used to treat inflammatory and noninflammatory acne (SORT A)
Questions