# Dermatology Grand Rounds 2019
## *skin signs of internal disease*

John Strasswimmer, MD, PhD

Affiliate Clinical Professor (Dermatology),
FAU College of Medicine
Research Professor of Biochemistry,
FAU College of Science
Associate Clinical Professor, U. Miami
Miller School of Medicine

FAU
CHARLES E. SCHMIDT
COLLEGE OF MEDICINE
Florida Atlantic University

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

# Dermatologist and Internal Medicine

**“Normal” abnormal skin findings in internal disease**

- Thyroid
- Renal insufficiency
- Diabetes

**“Abnormal” skin findings *as clue* to internal disease**

- Markers of infectious disease
- Markers of internal malignancy risk

**“Consultation Cases”**

- Very large dermatology finding
- A very tiny dermatology finding

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

Dermatologist and Internal Medicine

# The "Red and Scaly” patient

## “Big and Small” red rashes not to miss

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

# The "Red and Scaly” patient

- 29 Year old man with two year pruritic eruption
- PMHx:
  - seasonal allergies
  - childhood eczema
  - no medications

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

# Erythroderma

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

# Erythroderma

- Also called “exfoliative  dermatitis”
- Not stevens-Johnson / toxic epidermal necrosis

( More sudden onset, associated with target lesions, mucosal)

- Generalized erythema and scale >80-90% of body surface
- May be associated with telogen effluvium

It is not a diagnosis per se

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

# Erythroderma

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

# Erythroderma

<u>Work up</u>

1) Exam  for pertinent positives and negatives:
   - lymphadenopathy
   - primary skin lesions (i.e. nail pits of psoriasis)
   - mucosal involvement
   - Hepatosplenomagaly

2) laboratory
   - Chem 7, LFT, CBC
   - HIV
   - Multiple biopsies over time
3) review of medications
4) age-appropriate malignancy screening
5) evaluate hemodynamic stability

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

# Erythroderma

<u>Management</u>

1) remove possible offending medications
   - Medication can be recent or long-standing

2) monitor fluids and hemodynamic stability

3) treat with topicals
   - mid-potency (triamcinolone)0.1%  ointment
   - Open-wet dressings

4) treat underlying disease

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

# Erythroderma

<u>Management: open wet dressings</u>

1) bedsheet in warm water; all water wrung out
2) ointment (1 lb jar ) applied to total body
3) damp( not wet !)  bedsheet placed over body
4) Evaporation / convection of water vapor rapidly repairs skin barrier
5) Repeat q3h

72 hours of therapy:


Strasswimmer + Smirnov

Dermatology + Mohs Surgery

# Erythroderma

Which of the following treatments should take priority in any patient with erythroderma?

A. Systemic steroids

B. Oral antibiotics

C. Discontinuation of all unnecessary medications and topical products

D. Topical corticosteroids

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

# Erythroderma

Categories:

1) Exacerbation of a skin disorder
   - Atopic dermatitis
   - psoriasis
   - seborrheic dermatitis
   - pityriasis rubra pilaris
   - contact allergic dermatitis
2) Medications
3) Secondary to malignancy
   - CTCL (cutaneous T-cell lymphoma) = Sézary syndrome
   - HTLV-1 disease (adult T-cell leukemia/ lymphoma
   - Paraneoplastic manifestation of internal malignancy

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

- 35 Year old construction supervisor
- Admitted to local hospital for hypotension
- $70,000 4 day inpatient work-up
- Patient left AMA

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

- 35 Year old construction supervisor
- Admitted to local hospital for hypotension
- $70,000 4 day inpatient work-up
- Patient left AMA
- History by Dermatologist:
  - “ I have some psoriasis”

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

- 35 Year old construction supervisor
- Admitted to local hospital for hypotension
- $70,000 4 day inpatient work-up
- Patient left AMA
- History by Dermatologist:
  - “ I have some psoriasis”

- Diagnosis = **erythroderma** secondary to psoriasis

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

- 35 Year old construction supervisor
- Admitted to local hospital for hypotension
- $70,000 4 day inpatient work-up
- Patient left AMA
- History by Dermatologist:
  - “ I have some psoriasis”

- Diagnosis = **erythroderma** secondary to psoriasis
- <u>Rx= oral methotrexate</u>

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

# Erythroderma

<u>Categories</u>:

1) Exacerbation of a skin disorder
   - atopic dermatitis
   - **psoriasis**
   - seborrheic dermatitis
   - pityriasis rubra pilaris
   - contact allergic dermatitis

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

# Erythroderma

Categories:

1) Exacerbation of a skin disorder
   - atopic dermatitis
   - psoriasis
   - seborrheic dermatitis
   - pityriasis rubra pilaris
   - contact allergic dermatitis
2) Medications

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

# Erythroderma

Categories:

1) Exacerbation of a skin disorder
   - atopic dermatitis
   - psoriasis
   - seborrheic dermatitis
   - pityriasis rubra pilaris
   - contact allergic dermatitis
2) Medications

## Medications Implicated in Erythroderma

- The most commonly implicated drugs include:
  - Anti-epileptics
  - Allopurinol
  - Amiodarone
  - ACE inhibitors
  - Antibiotics
    - Penicillin
    - Sulfonamides
    - Vancomycin
  - NSAIDs
  - Calcium channel blockers
  - Cimetidine
  - Dapsone
  - Gold
  - Isoniazid
  - Lithium
  - Thiazides
  - Quinidine
  - St. John's wort

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

- 55 Year old woman
- Hx: DM type 2
- 5 month year history of generalized pruritus and rash
- Exam: + LAD in neck, groin

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

**DIAGNOSIS:**

**Right Upper Arm**

**SUPERFICIAL AND DEEP LYMPHOHISTIOCYTIC INFILTRATE WITH FEW SCATTERED EOSINOPHILS AND FOCAL PAUTRIER-LIKE MICROABSCESSES AND EPIDERMOTROPISM.**

Note: The histologic changes are suspicious for an atypical lymphoproliferative disorder associated with HTLV-1 conditions such as adult T-cell leukemia (ATLL). The differential includes mycosis fungoides and pseudolymphoma or cutaneous lymphoid hyperplasia mimicking leukemia/lymphoma. Multiple original and deeper sections were examined.

- 55 Year old woman
- Hx: DM type 2
- 5 month year history of generalized pruritus and rash
- Exam: + LAD in neck, groin

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

**DIAGNOSIS:**

**Right Upper Arm**

**SUPERFICIAL AND DEEP LYMPHOHISTIOCYTIC INFILTRATE WITH FEW SCATTERED EOSINOPHILS AND FOCAL PAUTRIER-LIKE MICROABSCESSES AND EPIDERMOTROPISM.**

Note: The histologic changes are suspicious for an atypical lymphoproliferative disorder associated with HTLV-1 conditions such as adult T-cell leukemia (ATLL). The differential includes mycosis fungoides and pseudolymphoma or cutaneous lymphoid hyperplasia mimicking leukemia/lymphoma. Multiple original and deeper sections were examined.

- 55 Year old woman
- Hx: DM type 2
- 5 month year history of generalized pruritus and rash
- Exam: + LAD in neck, groin

- Diagnosis = erythroderma secondary to **HTLV-1 disease**

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

# Erythroderma

Categories:

1) Exacerbation of a skin disorder
   - Atopic dermatitis
   - psoriasis
   - seborrheic dermatitis
   - pityriasis rubra pilaris
   - contact allergic dermatitis
2) Medications
3) Secondary to malignancy
   - CTCL (cutaneous T-cell lymphoma) +/- Sézary syndrome
   - **HTLV-1 disease (adult T-cell leukemia/ lymphoma**
   - Paraneoplastic manifestation of internal malignancy

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

- 29 Year old man with two year pruritic eruption
- PMHx:
  - seasonal allergies
  - childhood eczema
  - no medications

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

- 29 Year old man with two year pruritic eruption
- PMHx:
  - seasonal allergies
  - childhood eczema
  - no medications
- Diagnosis = **erythroderma**

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

- 29 Year old man with two year pruritic eruption
- PMHx:
  - seasonal allergies
  - childhood eczema
  - no medications
- Diagnosis = **biopsy consistent with psoriasis**
- <u>No history of psoriasis</u>

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

- 29 Year old man with two year pruritic eruption
- PMHx:
  - seasonal allergies
  - childhood eczema
  - no medications
- Diagnosis = **biopsy consistent with psoriasis**
- <u>No history of psoriasis</u>

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

IMAGES IN CLINICAL MEDICINE

Chana A. Sacks, M.D., *Editor*

# Erythrodermic Psoriasis and HIV Infection


Alexandra A. Bowles, B.S.

Ohio University
Athens, OH
bowlesar@gmail.com

Brittany Smirnov, D.O.

Dermatology Associates of Palm Beach
Delray Beach, FL

A 29-YEAR-OLD MAN PRESENTED TO THE DERMATOLOGY CLINIC WITH A pruritic, erythematous, and scaly rash that had first appeared 2 years earlier. He had sought no medical treatment until this presentation. His medical history included eczema during childhood and seasonal allergies. He was taking no medications. A physical examination showed erythematous, violaceous plaques (Panel A) that involved more than 90% of the patient's body-surface area, with some areas (for example, on the back) that were spared and reflect the baseline appearance of the patient's skin (arrow, Panel B). The differential diagnosis for generalized erythema and plaque formation includes erythrodermic psoriasis, seborrheic dermatitis, and pityriasis rubra pilaris. A punch biopsy specimen obtained from two areas on the back confirmed the diagnosis of erythrodermic psoriasis. An erythrodermic papulosquamous eruption can be associated with an underlying systemic disease. In this case, testing for human immunodeficiency virus (HIV) infection was positive. The patient received highly active antiretroviral therapy as well as topical triamcinolone. At a follow-up visit 3 months later, the patient had complete clearance of the skin eruption with some residual hyperpigmentation.

DOI: 10.1056/NEJMicm1810005






## Marker of HIV infection:

- New Psoriasis
- or *dramatically worse* psoriasis or other papulo-squamous disorder

Our first publication of 2019

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

**“Abnormal” skin findings *as clue* to internal disease**

- Markers of infectious disease
- Markers of internal malignancy risk

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

Flexor Wrist

Buccal Mucosa

# LICHEN PLANUS

Flexor Wrist

Buccal Mucosa

# LICHEN PLANUS

- Purple, pruritic, polygonal papules
- Wickham's striae - are fine white lines on top of papules
- Koebner phenomenon - *in linear groups due to trauma of scratching*

# LICHEN PLANUS

- Purple, pruritic, polygonal papules
- Wickham's striae - are fine white lines on top of papules
- Koebner phenomenon -
  - *in linear groups due to trauma of scratching*
- Usually self limiting 2-3 years.

# LICHEN PLANUS

- Purple, pruritic, polygonal papules
- Wickham's striae - are fine white lines on top of papules
- Koebner phenomenon -
  - *in linear groups due to trauma of scratching*
- Usually self limiting 2-3 years.

# LICHEN PLANUS

- Purple, pruritic, polygonal papules
- Wickham's striae - are fine white lines on top of papules
- Koebner phenomenon -
  - *in linear groups due to trauma of scratching*
- Usually self limiting 2-3 years.
- Rx:
  - Topicals>  IM triamcinolone
- Two complications
  - Variable association of  0.1% to 35% with Hepatitis C
  - Evolution to mucosal **SCC**

# SUMMARY OF CUTANEOUS MANIFESTATIONS OF HEPATITIS C VIRUS

- **Lichen Planus**
- Porphyria Cutanea Tarda
- Polyarteritis Nodosa
- Necrolytic Acral Erythema
- Cryoglobulinemia
- Pruritus

# SUMMARY OF CUTANEOUS MANIFESTATIONS OF HEPATITIS C VIRUS

- not “eczema” not fungus”

# SUMMARY OF CUTANEOUS MANIFESTATIONS OF HEPATITIS C VIRUS

- Lichen Planus
- Porphyria Cutanea Tarda
- Polyarteritis Nodosa
- Necrolytic **Acral** Erythema
- Cryoglobulinemia
- Pruritus

- not “eczema” not fungus”

# NECROLYTIC ACRAL ERYTHEMA

- Psoriasiform eruption on acral surfaces
- HCV+
- Manifestation of Zinc defeciency
- Treat with zinc supplementation



# SUMMARY OF CUTANEOUS MANIFESTATIONS OF HEPATITIS C VIRUS

# SUMMARY OF CUTANEOUS MANIFESTATIONS OF HEPATITIS C VIRUS

- Lichen Planus
- **Porphyria Cutanea Tarda**
- Polyarteritis Nodosa
- Necrolytic Acral Erythema
- Cryoglobulinemia
- Pruritus

# PORPHYRIA CUTANEA TARDA

- Vesicles on sun-exposed areas, scarring, milia HCV+
- Hypertrichosis
- Fragile skin with sclerodermoid changes

# PORPHYRIA CUTANEA TARDA

- Vesicles on sun-exposed areas, scarring, milia HCV+
- Hypertrichosis
- Fragile skin with sclerodermoid changes

# PORPHYRIA CUTANEA TARDA

- Vesicles on sun-exposed areas, scarring, milia HCV+
- Hypertrichosis
- Fragile skin with sclerodermoid changes
- DDx: **pseudoporphyria** due to NSAIDS, OCP, etc.

# PSEUDOPORPHYRIA

**Not true porphyria**

- Normal blood urine testing
- Associated with renal disease
- Associated with medications
  - NSAIDS
  - Dapsone - Furosemide - Nalidixic Acid - Tetracycline - Pyridoxine

# SUMMARY OF CUTANEOUS MANIFESTATIONS OF HEPATITIS C VIRUS

- Lichen Planus
- Porphyria Cutanea Tarda
- **Polyarteritis Nodosa**
- Necrolytic Acral Erythema
- Cryoglobulinemia
- Pruritus

# SUMMARY OF CUTANEOUS MANIFESTATIONS OF HEPATITIS C VIRUS

# SUMMARY OF CUTANEOUS MANIFESTATIONS OF HEPATITIS C VIRUS

- **Polyarteritis Nodosa**
  - Small vessel vasculitis (LCV = **palpable purpura**) *and*
  - Medium vessel vasculitis ( nodules on lower extremities)
  - Multi system disease due to ischemic injury
  - Associated with HCV or HBV

# SUMMARY OF CUTANEOUS MANIFESTATIONS OF HEPATITIS C VIRUS

- **Polyarteritis Nodosa**
  - Small vessel vasculitis (LCV = **palpable purpura**) *and*
  - Medium vessel vasculitis ( nodules on lower extremities) = **livedo**
  - Multi system disease due to ischemic injury
  - Associated with HCV or HBV

PALPABLE PURPURA IS SMALL VESSEL VASCULITIS

THIS IS MEDIUM VESSEL INJURY

# HEPATITIS B OR C

- About 30% may have Urticaria or present a serum sickness like picture (because of circulating immune complexes)
- HBV Associated with 30% of PAN
- Variants are
  - Classical PAN
  - Cutaneous PAN
  - Single organ PAN
  - Childhood PAN (assiciated with strep infections)

# SUMMARY OF CUTANEOUS MANIFESTATIONS OF HEPATITIS C VIRUS

# SUMMARY OF CUTANEOUS MANIFESTATIONS OF HEPATITIS C VIRUS

- Lichen Planus
- Porphyria Cutanea Tarda
- Polyarteritis Nodosa
- **Cryoglobulinemia**
- Necrolytic Acral Erythema
- Pruritus

# VASCULAR DISEASES

- 62 year old woman

# VASCULAR DISEASES

- 62 year old woman
  - Arthralgias,
  - Elevated LFT
  - Glomerulonephritis

# VASCULAR DISEASES

## Cryoglobulenemia

- Small vessel vasculitis (LCV = palpable purpura)
- Clotting in vessels: livedo reticularis

# VASCULAR DISEASES

## Cryoglobulenemia

- Small vessel vasculitis (LCV = palpable purpura)
- Clotting in vessels: livedo reticularis

- Systemic symptoms:
  - Arthralgias,
  - Elevated LFT
  - Glomerulonephritis

# VASCULAR DISEASES

## Cryoglobulenemia

- Small vessel vasculitis (LCV = palpable purpura)
- Clotting in vessels: livedo reticularis

- Systemic symptoms:
  - Arthralgias,
  - Elevated LFT
  - Glomerulonephritis
- Due to:
  - IgG reversibly precipitate in cold
  - Mixed (type 3) polyclonal IgG/IgM
- Associated with
  - HCV
  - Multiple myeloma

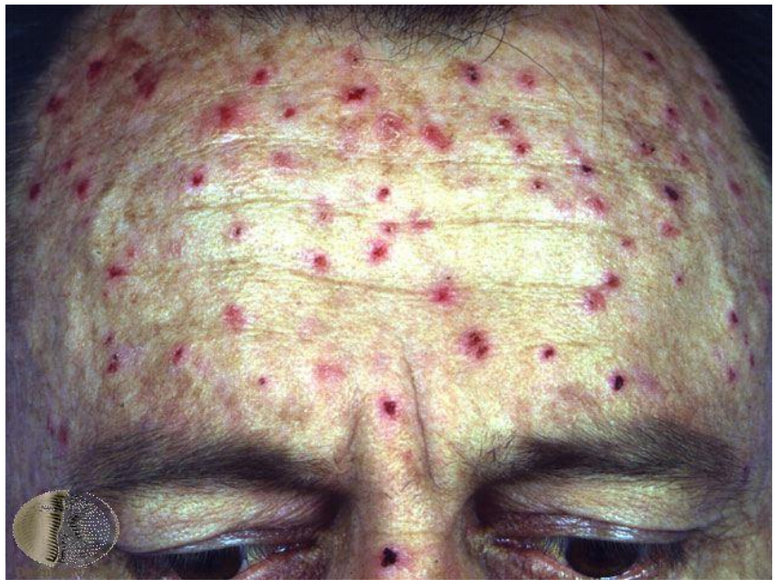
# SUMMARY OF CUTANEOUS MANIFESTATIONS OF HEPATITIS C VIRUS

# SUMMARY OF CUTANEOUS MANIFESTATIONS OF HEPATITIS C VIRUS

- **Lichen Planus**
- Porphyria Cutanea Tarda
- Polyarteritis Nodosa
- Necrolytic Acral Erythema
- Cryoglobulinemia
- **Pruritus**

# PRURITUS

**Pruritus**



- lesions where can reach
- often in linear arraignment
- multiple phases of healing
- <u>hemmoragic</u> crust: largely unique to trauma (and Herpes infections)

# PRURITUS

**Pruritus**

- lesions where can reach
- often in linear arraignment
- multiple phases of healing
- hemmoragic crust: largely unique to trauma (and Herpes infections)

# PRURITUS

**Pruritus**

- lesions where can reach
- often in linear arraignment
- multiple phases of healing
- hemmoragic crust: largely unique to trauma (and Herpes infections)

- Skin findings:
  - linear erosions
  - lichenification
  - **Prurigo nodules**

# PRURITUS

**Causes:**

- Iron deficiency
- Liver disease
- Malignancy (e.g. Hodgkin’s lymphoma)
- Neurological disorders
- Polycythemia
- Renal failure
- Thyroid dysfunction

Work-up:

CBC, LFT, BUN/Cr, TSH
Chest x-ray
HBV, HCV, HIV

# **NOT** PRURITUS

# **NOT** PRURITUS

**Dermatitis herpetiformis:**

- Symmetric, grouped vesicles on extensors
- Very pruritic
- Associated with Hashiomoto's thyroiditis, lymphoma, DM

- Due to IgA antibodies against epidermal transglutaminase-3

- GI gluten sensitivity demonstrated in 20%

# **NOT** PRURITUS

## Bullous Pemphigoid

- Symmetric, grouped vesicles on flexors
- Over age 60
- not oral
- Associated with drug reactions
- May find no bullae
- pink background (urticaria) is key
- Eosiniphil-mediated
- Rx: Tetracycline ± nicotinamide
- Corticosteroids **with steroid-sparing agents**

**“Normal” skin findings in chronic disease**

- Thyroid
- Renal
- Diabetes

# HYPERTHYROIDISM AND THE SKIN

**Thyroid dermopathy (pretibial myxedema)**

- Coalescing, waxy papule and vesicles
- Increased hyaluronic acid

# HYPERTHYROIDISM AND THE SKIN

**Scleromyxedema**

- Coalescing, waxy papule and vesicles
- Increased hyaluronic acid
- increased fibroblasts

# HYPERTHYROIDISM AND THE SKIN

**Generalized Myxedema**

- diffuse deposition of hyaluronic acid, chondroitin
- non-pitting
- Characteristic facies: swollen lips, broad nose, macroglossia, and puffy eyelids, hands, feet
- Nerve entrapment: carpal tunnel, facial palsy

# HYPERTHYROIDISM AND THE SKIN

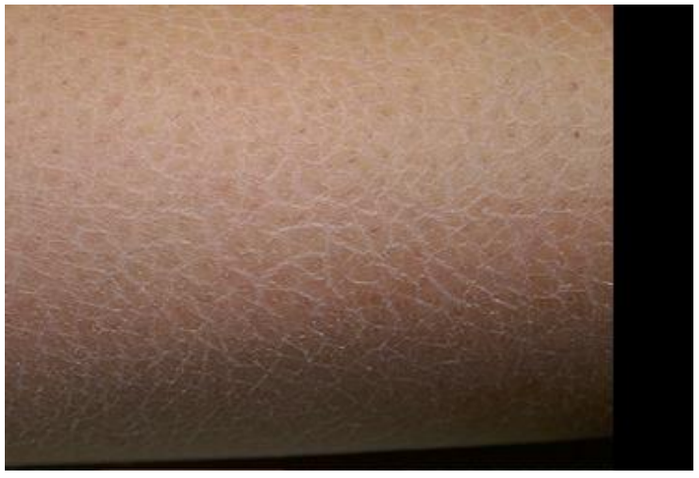
**Auto-imunne diseases**

- Vitiligo, alopecia
- pernicious anemia
- connective tissue diseases

# HYP**O**THYROIDISM AND THE SKIN

**Nonspecific changes**

- Xerosis



# HYP**O**THYROIDISM AND THE SKIN

**Nonspecific changes**

- Xerosis
- palmoplantar keratoderma


# HYP**O**THYROIDISM AND THE SKIN

**Nonspecific changes**

- Xerosis
- palmoplantar keratoderma
- Madarosis: loss of lateral 1/3 of brows
- Caroteimia, poor wound healing, clotting


# HYP**O**THYROIDISM AND THE SKIN

**Nonspecific changes**

- Xerosis
- palmoplantar keratoderma
- Madarosis: loss of lateral 1/3 of brows
- Caroteimia, poor wound healing, clotting


# CUTANEOUS MANIFESTATIONS OF DIABETES

- 30% of patients with DM develop skin lesions
  - Type I patients get more autoimmune-type lesions
  - Type II patients get more cutaneous infections
- May be the first presenting sign
- Approach:
  - Skin diseases associated with DM
  - Cutaneous infections
  - Cutaneous manifestions of diabetic complications
  - Skin reactions to diabetic treatment

# CUTANEOUS MANIFESTATIONS OF DIABETES

- 30% of patients with DM develop skin lesions
  - Type I patients: more autoimmune-type lesions (vitiligo)
  - Type II patients: more cutaneous infections
- May be the first presenting sign
- Approach:
  - **Skin diseases associated with DM**
  - Cutaneous infections
  - Cutaneous manifestions of diabetic complications
  - Skin reactions to diabetic treatment

# CUTANEOUS MANIFESTATIONS OF DIABETES

**Diabetic Dermopathy "shin spots"**

- Most common skin finding in diabetes
- Lesions are predominantly situated on the shins, forearms, thighs and over bony prominences
- The color is due to hemosiderin in histiocytes near the vessels
- Trauma and microvascular disease may play a role

# CUTANEOUS MANIFESTATIONS OF DIABETES

**Diabetic Bullae**

- Painless bullae on non-inflamed base
- Contain clear, sterile fluid
- Trauma and microvascular disease may play a role

# CUTANEOUS MANIFESTATIONS OF DIABETES

**Acanthosis nigricans**

# CUTANEOUS MANIFESTATIONS OF DIABETES

**Acanthosis nigricans**

- *Mechanism: Insulin binds to Insulin-like growth factor —> growth of keratinocytres, fibroblasts*
- Incidental finding in obesity
- Associated with gastric CA
- Secondary to medications (nicotinic acid, estrogen, or corticosteroids)
- Pineal tumors
- Other endocrine syndromes (PCOS, acromegaly, Cushing's disease, hypothyroidism)

# CUTANEOUS MANIFESTATIONS OF DIABETES

**Scleredema diabeticorum**

- Painless, symmetric, woody “peau d’orange” induration
- Upper back and neck

# CUTANEOUS MANIFESTATIONS OF DIABETES

**NLD: Necrobiosis lipoidica diabeticorum**

- atrophic, telangiectatic plaques
- yellow-brown
- 20% of NLD patients have diabetes

# CUTANEOUS MANIFESTATIONS OF DIABETES

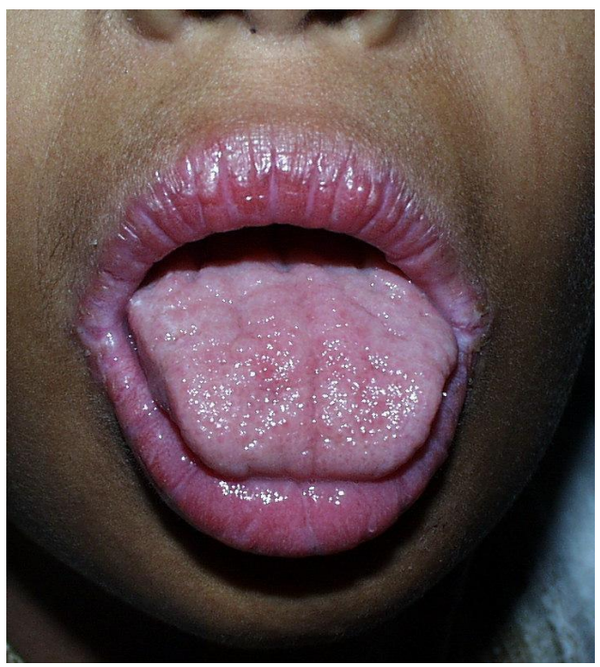
**Eruptive Xanthomas**

- Sudden crops on firm, non-tender yellow papules with a red rim on extensors
- Slowly resolve when the diabetes is properly managed
- Hypertriglyceridemia >2000mg/dl
- Secondary to to EtOH, estrogens

# CUTANEOUS MANIFESTATIONS OF DIABETES

**Candidiasis in DM**

- Intertrigenous areas
  - *“satellite” lesions*
- Angular cheilitis:
  - White, curdlike material adherent to erythematous, fissured
  - *oral commisure;*
- Median rhomboid glossitis
  - *middle of tongue*
- Chronic paronychia
  - *fingernails*
- Erosio interdigitale blastomycetia
  - *fissures in finger web spaces*



# CUTANEOUS MANIFESTATIONS OF DIABETES

**Erytrasma**

- *Corynebacterium minutissimum*

- Well demarcated red or brown patches
- Topical clindamyin

# CUTANEOUS MANIFESTATIONS OF DIABETES

**Rhinocerebral mucormycosis**

- Uncontrolled diabetics with ketosis
- Involves  the terbinates,septum,palate, maxiillary and ethmoid sinuses
- headache, fever,lethargy, nasal congestion and facial ocular pain
- Treatment:
  - correction of ketosis
  - debridement
  - IV antifungal agents

- Mortality ranges from 15-34%

# CUTANEOUS REACTIONS TO INSULIN

**Lipoatrophy and lipodystrophy**

- Lipoatrophy
  - Circumscribed depressed areas of skin at the insulin injection site 6-24 months after starting insulin

- Lipodystrophy
  - Soft dermal nodules that resemble lipomas at sites of frequent injection
  - May be a response to the lipogenic action of insulin
  - Treat and prevent by rotating sites of injection

# SKIN FINDINGS OF RENAL FAILURE

**Findings**

- General
  - Xerosis , Pruritus
  - Pigmentary alteration
  - Nail Changes, Hair Changes

# SKIN FINDINGS OF RENAL FAILURE

**Findings**

- General
  - Xerosis , Pruritus
  - Pigmentary alteration
  - Nail Changes, Hair Changes

**“Uremic Frost”**

- Very Rare
  - blood urea nitrogen level of more than 250-300 mg/dl
  - frequent in the pre-dialysis era

# SKIN FINDINGS OF RENAL FAILURE

**Findings**

- General
  - Xerosis , Pruritus
  - Pigmentary alteration
  - Nail Changes, Hair Changes

# SKIN FINDINGS OF RENAL FAILURE

**Findings**

- General
  - Xerosis , Pruritus
  - Pigmentary alteration
  - Nail Changes, Hair Changes
  - Acquired perforating disorder
  - Bullous disease of dialysis
  - Calcinosis cutis (metastatic)
  - Calciphylaxis
  - Nephrogenic systemic fibrosis

# SKIN FINDINGS OF RENAL FAILURE

**Findings**

- General
  - Xerosis , Pruritus
  - Pigmentary alteration
  - Nail Changes, Hair Changes
- **Acquired perforating disorder**
- Bullous disease of dialysis
- Calcinosis cutis (metastatic)
- Calciphylaxis
- Nephrogenic systemic fibrosis

# SKIN FINDINGS OF RENAL FAILURE

**Findings**

- General
  - Xerosis , Pruritus
  - Pigmentary alteration
  - Nail Changes, Hair Changes
- **Acquired perforating disorder**
- Bullous disease of dialysis
- Calcinosis cutis (metastatic)
- Calciphylaxis
- Nephrogenic systemic fibrosis

# SKIN FINDINGS OF RENAL FAILURE

**Perforating dermatosis**

- Primary diseases: rare (Kyrlies, Elastosis Perforans serpiginosa)
- Secondary to:
  - Renal Failure (worse in diabetics)

# SKIN FINDINGS OF RENAL FAILURE

- General
  - Xerosis , Pruritus
  - Pigmentary alteration
  - Nail Changes, Hair Changes
- Acquired perforating disorder
- **Bullous disease of dialysis**
- Calcinosis cutis (metastatic)
- Calciphylaxis
- Nephrogenic systemic fibrosis

# SKIN FINDINGS OF RENAL FAILURE

**Findings**

- General
  - Xerosis , Pruritus
  - Pigmentary alteration
  - Nail Changes, Hair Changes
- Acquired perforating disorder
- **Bullous disease of dialysis**
- Calcinosis cutis (metastatic)
- Calciphylaxis
- Nephrogenic systemic fibrosis

Hands of a transfusion-dependent patient on long-term hemodialysis. Several uremia-related cutaneous disorders are visible. The pigmentary alteration results from retained urochromes and hemosiderin deposition. The large bullae are consistent with either porphyria cutanea tarda or the bullous disease of dialysis. All nails show the distal brown-red and proximal white coloring of half-and-half nails.

# SKIN FINDINGS OF RENAL FAILURE

**Findings**

- General
  - Xerosis , Pruritus
  - Pigmentary alteration
  - Nail Changes, Hair Changes
  - Acquired perforating disorder
  - Bullous disease of dialysis
  - Calcinosis cutis (metastatic)
  - **Calciphylaxis**
  - Nephrogenic systemic fibrosis

# SKIN FINDINGS OF RENAL FAILURE

**Findings**

- General
  - Xerosis , Pruritus
  - Pigmentary alteration
  - Nail Changes, Hair Changes
- Acquired perforating disorder
- Bullous disease of dialysis
- Calcinosis cutis (metastatic)
- **Calciphylaxis**
- Nephrogenic systemic fibrosis

# CALICIPHYLAXIS

**Metastatic dermal calcification**

- Arteriopathy —> gangrene
- Findings:
  - Angular ulcerations
  - Very painful
  - Elevated PTH
  - High mortality

# SKIN FINDINGS OF RENAL FAILURE

**Findings**

- General
  - Xerosis , Pruritus
  - Pigmentary alteration
  - Nail Changes, Hair Changes
  - Acquired perforating disorder
  - Bullous disease of dialysis
  - Calcinosis cutis (metastatic)
  - Calciphylaxis
  - **Nephrogenic systemic fibrosis**

# SKIN FINDINGS OF RENAL FAILURE

**Findings**

- General
  - Xerosis , Pruritus
  - Pigmentary alteration
  - Nail Changes, Hair Changes
- Acquired perforating disorder
- Bullous disease of dialysis
- Calcinosis cutis (metastatic)
- Calciphylaxis
- **Nephrogenic systemic fibrosis**

# NEPHROGENIC FIBROSING DERMOPATHY (NFD)

**Scleroderma + Contractures**

- Peau d'orange
- Very firm skin
  - advancing arcuate edges develop on limbs and trunk
  - relative sparing of head neck
- Specific to radiography contrast

# Local consultation cases

- **HPI:** 51 yo male
- HTN and diverticulitis
- worsening myalgias and arthralgias x 3 weeks
- severe lethargy and fevers x1 week.
- admitted for hyponatremia
- Dermatology consulted for a *pigmented* lesion on the abdomen

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

- **VSS**: **T** 98.3, **P** 88, **RR** 20, **BP** 140/73, **$O_2$** 98
- **PE:** Gen: NAD, AAOx3
  - Skin: Fitzpatrick II, multiple tender **1-2mm erythematous** purpuric papules on the palmar side of the fingers and dorsal aspect of toes.
  - Ø cervical lymphadenopathy, Ø conjunctival, mucosal or other cutaneous lesions
- **Labs**
  - **CBC: WBC** 19.1, **HB** 12.3, **HCT** 35.2, PLT 330, EOS 0.6%,
  - **CMP: Na** 119, K 3.1, Cl 86, $CO_2$ 30, BUN 16, Cr 0.7, **CRP** 16.8
  - Viral panel (-), HIV (-), pending blood cultures

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

Tender erythematous, purpuric papules on third digit of L hand

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

Tender erythematous purpuric papule at the on the R foot

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

Tender erythematous purpuric papule at the on the L foot

Strasswimmer + Smirnov

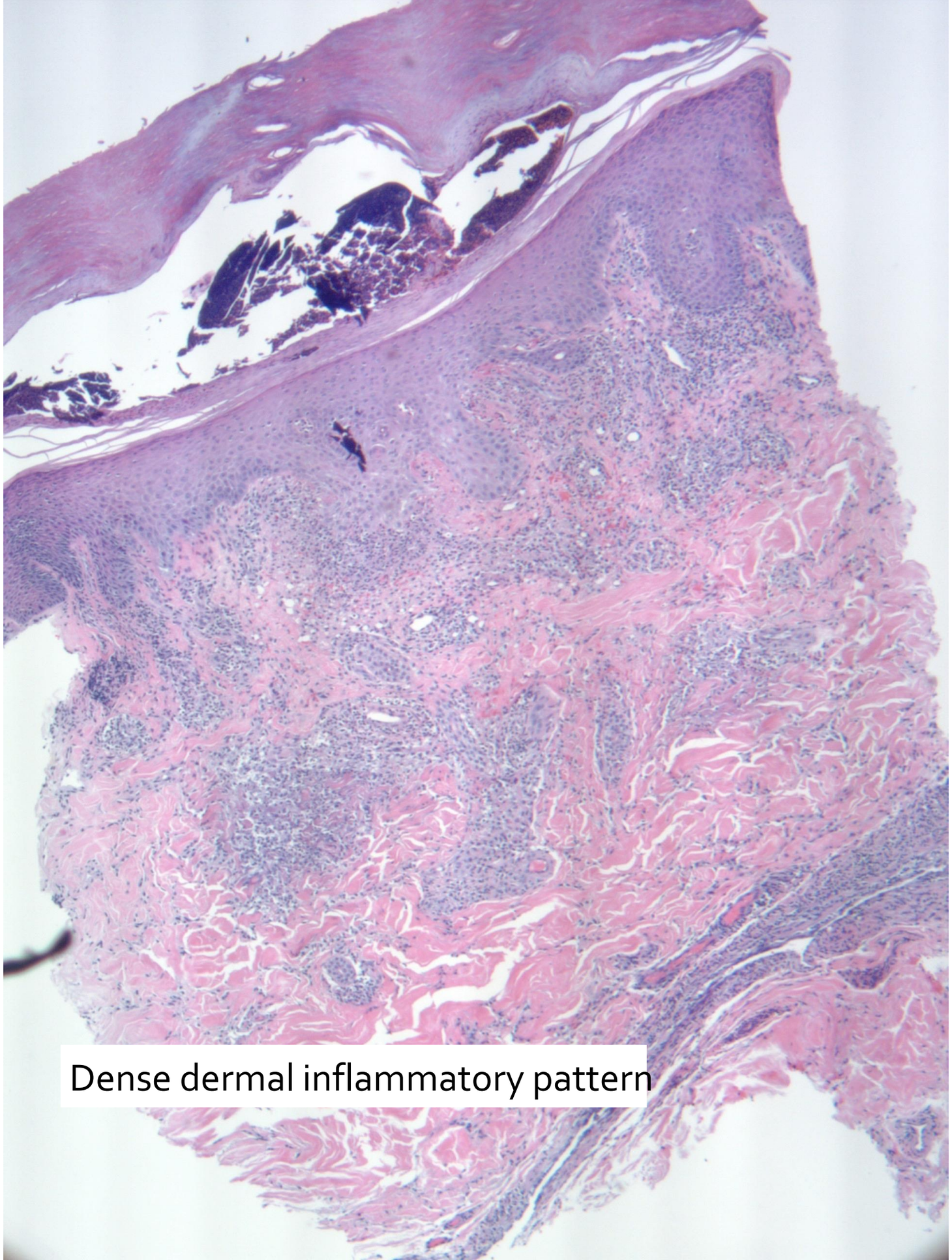
Dermatology + Mohs Surgery

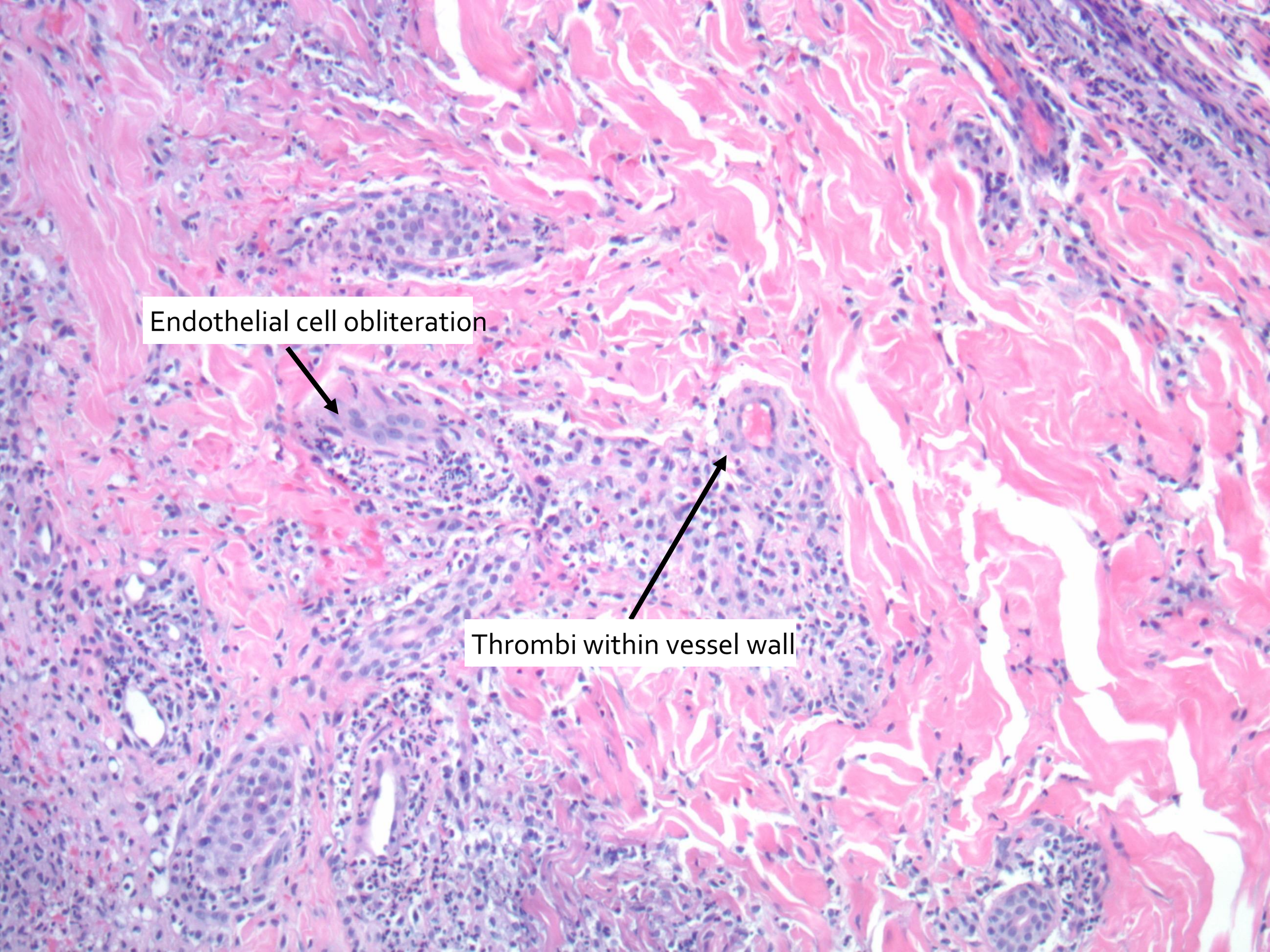
# Differential

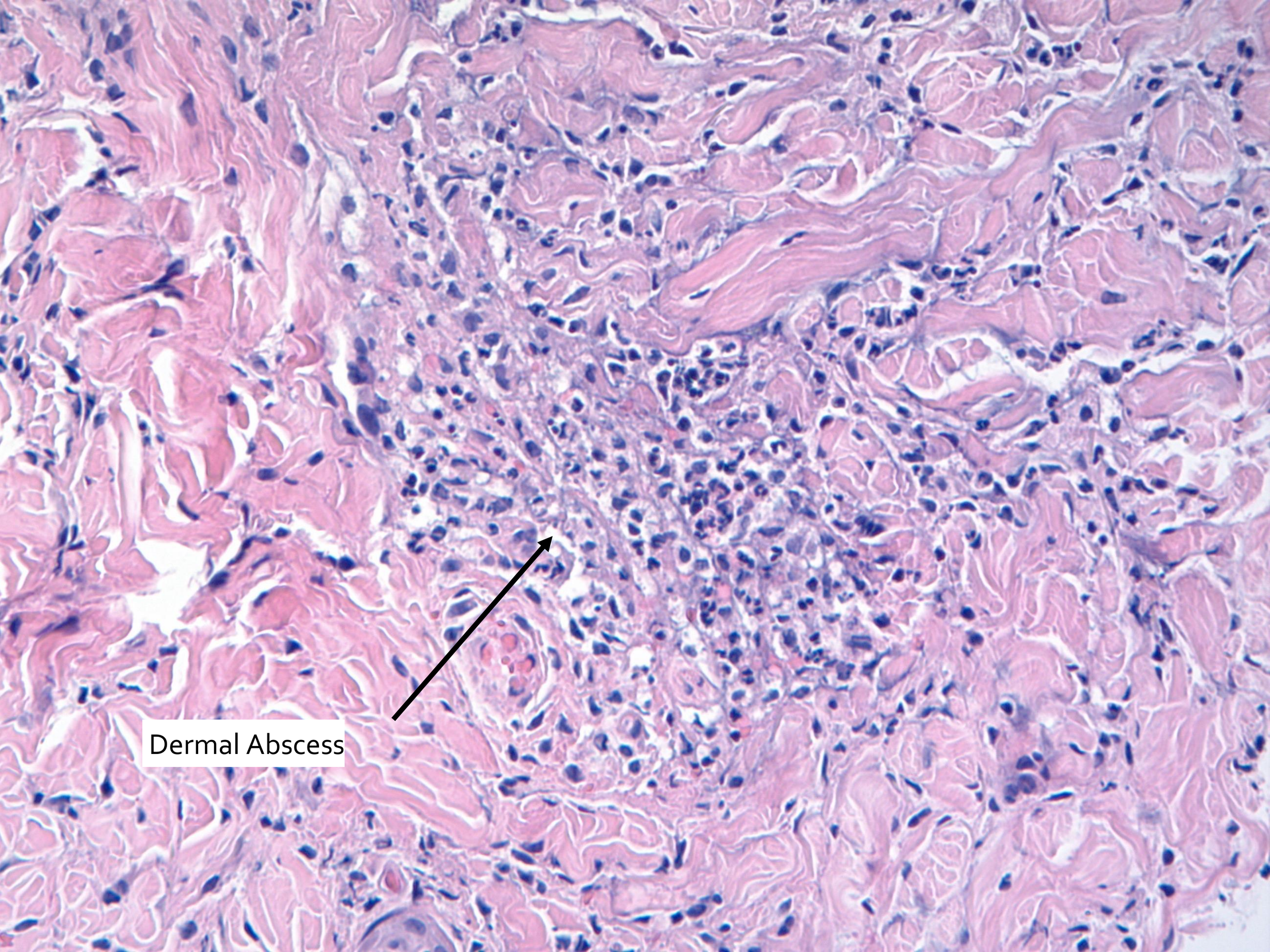
- Osler nodes or Janeway lesions
  - Secondary to:
    - **Most likely:** Subacute/acute endocarditis
    - **Other:**
      - Systemic lupus erythematosus
      - Gonococcemia
      - Hemolytic anemia

Strasswimmer + Smirnov

Dermatology + Mohs Surgery


Dense dermal inflammatory pattern


Endothelial cell obliteration
Thrombi within vessel wall


Dermal Abscess

# Radiologic and Microbiologic Workup

- Blood cultures (+) S. aureus  x 4 → (-) x 3.
- MRI back: epidural abscess of L5-S1.
- TEE: (12/23/15)
  - small vegetation of the aortic valve,
  - large vegetation of the mitral valve with a large perforation. EF: 65%.

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

# Classic Cutaneous Findings in Endocarditis

- >50% of patients have a finding”
  - **Petechiae**:
  - **Subungual (splinter) hemorrhages**: Dark-red, linear lesions in the nail beds
  - **Osler nodes**: Tender subcutaneous nodules usually found on the distal pads of the digits
  - **Janeway lesions**: Non-tender maculae on the palms and soles
  - **Roth spots**: Retinal hemorrhages with small, clear centers; rare

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

Subconjunctival Hemorrhage (2-5%)

Roth spots < 5%

Pallor

Janeway lesions

Mucosal Petechiae 20-30%

Osler nodes (5%)

Clubbing

10%, long standing only

Petechial rash (40-50%)

Loss of pulses

Splinter hemorrhages 10%

# Osler Nodes and Janeway Lesions
# Overview

- **Cutaneous manifestations of bacterial endocarditis.**
  - Also rarely described in systemic lupus erythematosus, gonococcemia, hemolytic anemia and typhoid fever.

- **Osler nodes**: red-purple, slightly raised **tender** nodules often with a pale center. Average diameter 1 to 1.5mm.
  - Can occur at any time during the course of endocarditis (usually late in subacute)

- **Janeway lesions**: **non-tender**,  hemorrhagic
  - palms and soles
  - More commonly see in acute endocarditis

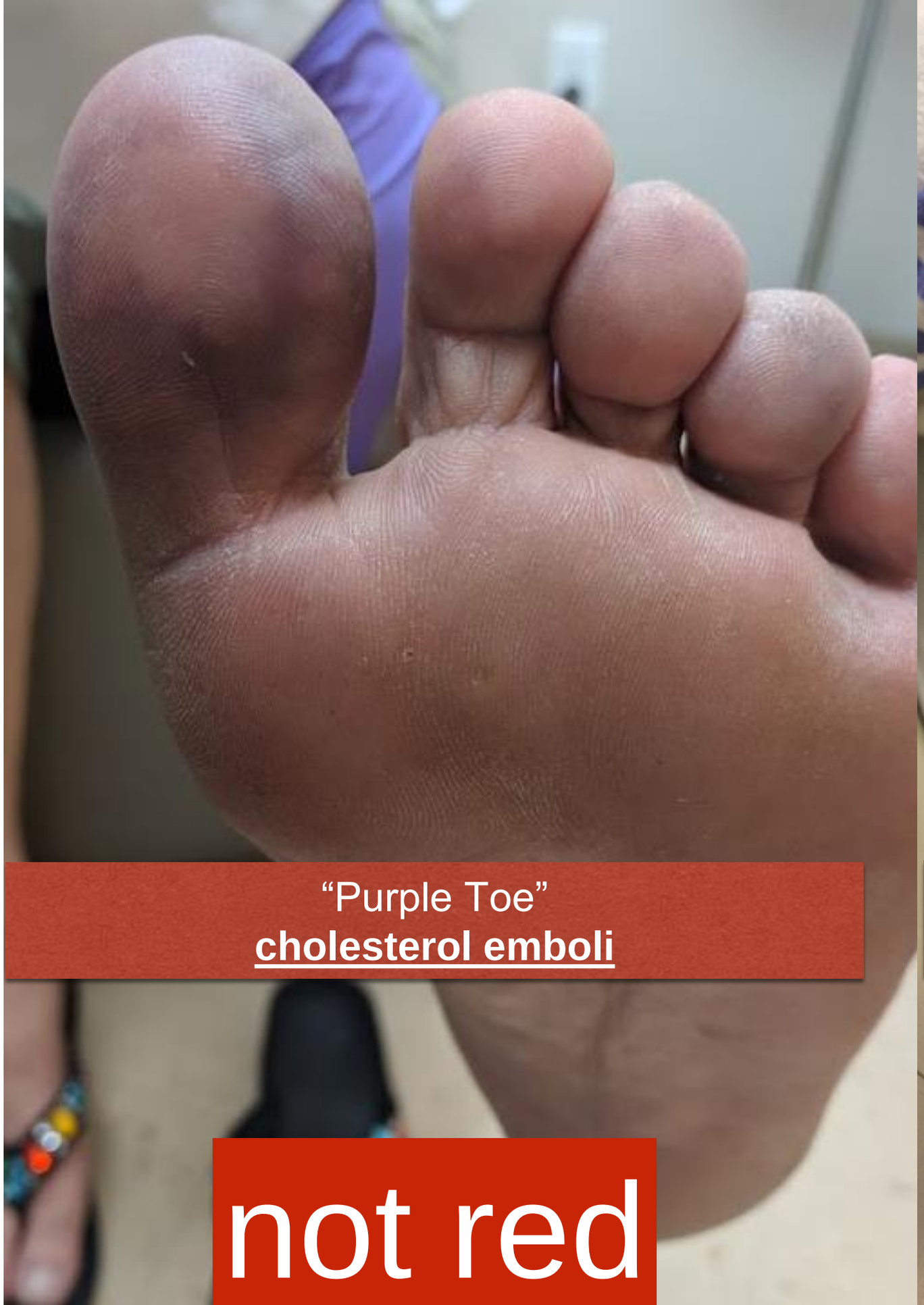
Strasswimmer + Smirnov
Dermatology + Mohs Surgery

# Pathogenesis

- **Two disparate theories**
  - **Circulating immune complex** mediated vasculitis – Gutman et al.
  - **Microembolization**

Strasswimmer + Smirnov

Dermatology + Mohs Surgery



“Purple Toe”
**cholesterol emboli**

not red

Osler Node
**Infectious emboli from endocarditis**

red

- 45 year old woman
- Works in construction
- History of systemic lupus erythematous

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

# The "Red and Scaly” patient : Medium- size

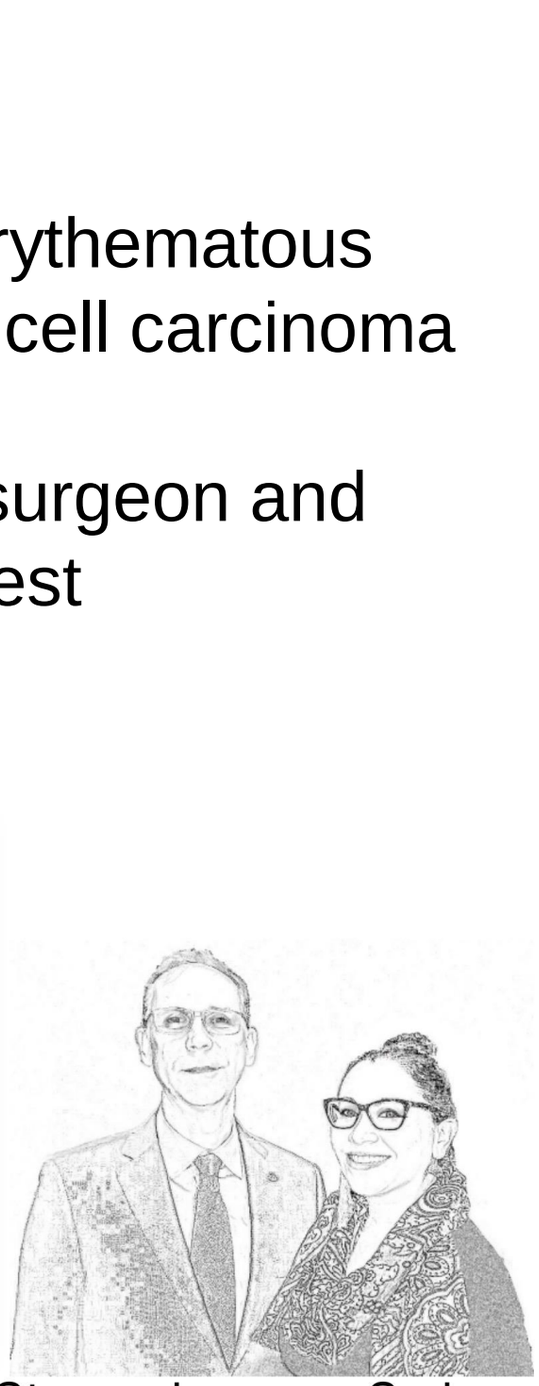
- 45 year old woman
- Works in construction
- History of systemic lupus erythematous
- Biopsy of arm = squamous cell carcinoma

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

# The "Red and Scaly” patient : Medium- size

- 45 year old woman
- Works in construction
- History of systemic lupus erythematous
- Biopsy of arm = squamous cell carcinoma
- Plan:
  - wide excision by plastic surgeon and
  - radiation therapy to the rest



Strasswimmer + Smirnov

Dermatology + Mohs Surgery

# The "Red and Scaly” patient : Medium- size

- 45 year old woman
- Works in construction
- History of systemic lupus erythematous
- Biopsy of arm = squamous cell carcinoma
- Plan:
  - wide excision by plastic surgeon and
  - radiation therapy to the rest

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

# The "Red and Scaly” patient : Medium- size

- 45 year old woman
- Works in construction
- History of systemic lupus erythematous
- Biopsy of arm = squamous cell carcinoma
- Plan:
  - wide excision by plastic surgeon and
  - radiation therapy to the rest

Re-biopsy= SCLE lupus

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

# The "Red and Scaly” patient : Medium- size

- 45 year old woman
- Works in construction
- History of systemic lupus erythematous
- Biopsy of arm = squamous cell carcinoma
- Plan:
  - Photoprotection
  - Emollients

Re-biopsy= SCLE lupus

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

40 yo Caucasian otherwise healthy male

Chronic “rash” x 9 months in groin

not responsive to antifungals, antibiotics, corticosteroids

admitted for altered mental status

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

40 yo Caucasian otherwise healthy male

Chronic “rash” x 9 months in groin

not responsive to antifungals, antibiotics, corticosteroids

admitted for altered mental status

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

# Ddx:

- Atopic dermatitis
- Necrolytic Migratory erythema (glucagonoma syndrome, pseudoglucagonoma syndrome)
- Acrodermatitis enteropathica (zinc deficiency)
- Pellagra (niacin deficiency)
- Cutanous T- Cell Lymphoma (“Mycosis fungicides”)
- Tinea

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

# Laboratory studies & Data

Labs: CBC – microcytic anemia, CMP – hypoglycemia, elevated LFTs (**alkp 340, AST 97, ALT 146**), **TSH 38**

Specialty labs:

Zinc level wnl, Vitamin C wnl

Insulin- **41.2** (2.0-19.6), c-peptide- **4.48** ng/ml (0.8-3.85)

Chromogranin A- **682** (1.9-15)

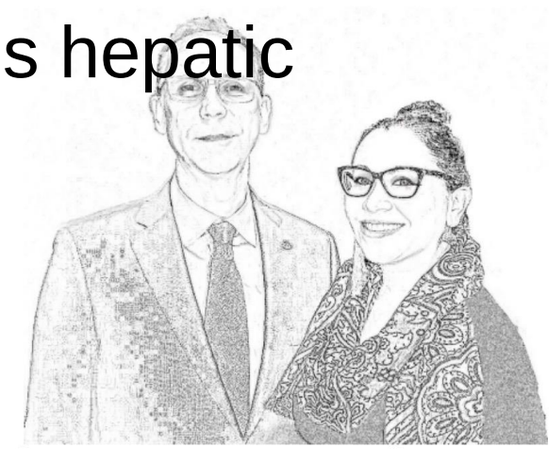
**AFP 55.22**, **Ca 19-9 89**

5HIAA wnl

Radiologic studies:

Portable abd x-ray: hepatomegaly with no obstruction

CT abd w/contrast: massively enlarged liver with numerous hepatic masses.



Strasswimmer + Smirnov

Dermatology + Mohs Surgery

Confluent parakeratosis

Buckshot dyskeratosis

Strasswimmer + Smirnov

Dermatology + Mohs Surgery

# Diagnosis

- Atopic dermatitis
- **Necrolytic Migratory erythema** (glucagonoma syndrome, pseudoglucagonoma syndrome)
- Acrodermatitis enteropathica (zinc deficiency)
- Pellagra (niacin deficiency)
- Cutanous T- Cell Lymphoma (“Mycosis fungicides”)
- Tinea

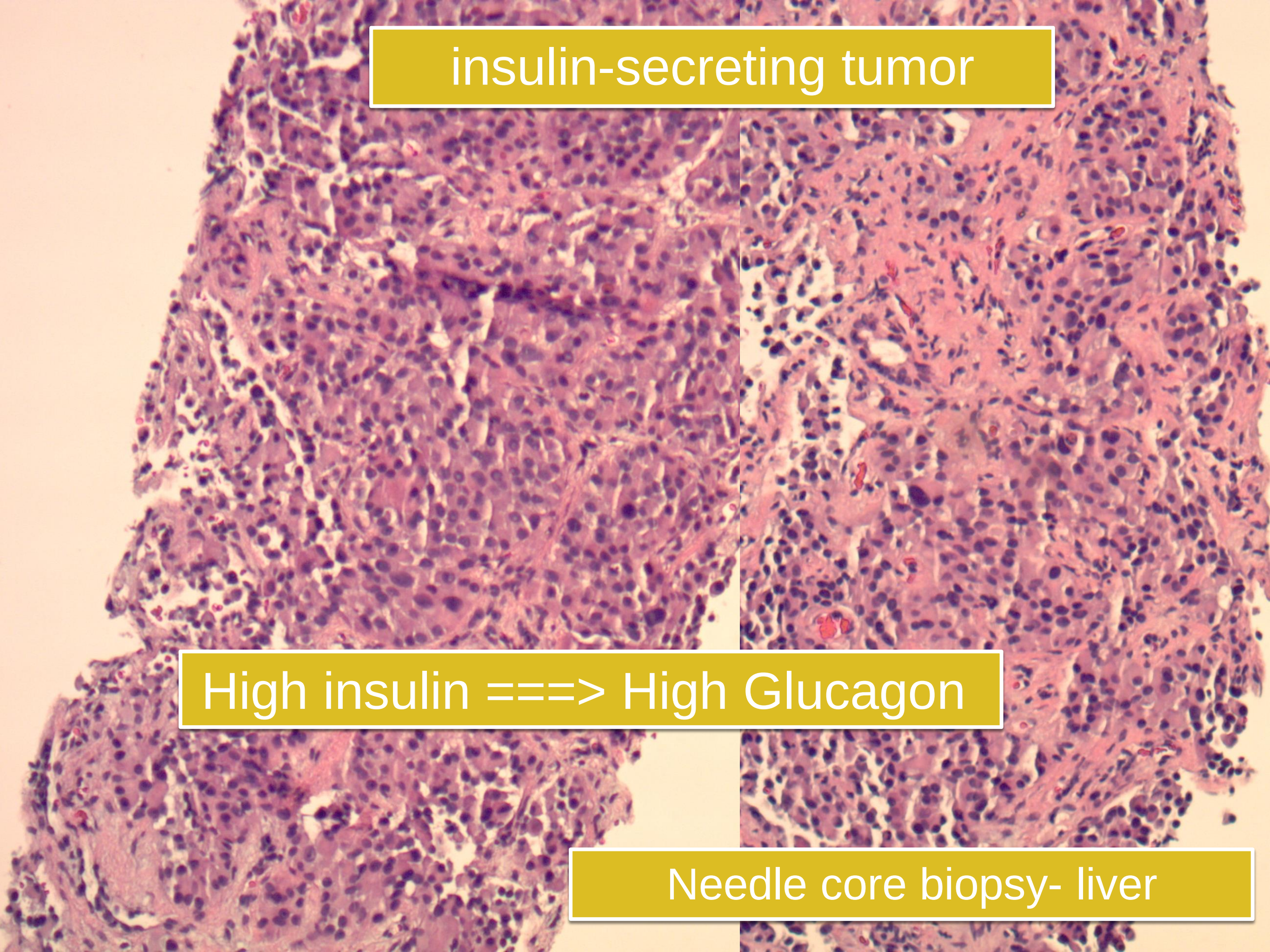
Strasswimmer + Smirnov

Dermatology + Mohs Surgery

Needle core biopsy- liver

insulin-secreting tumor

Needle core biopsy- liver


insulin-secreting tumor
High insulin ===> High Glucagon
Needle core biopsy- liver

# Medical Student & Resident Teaching

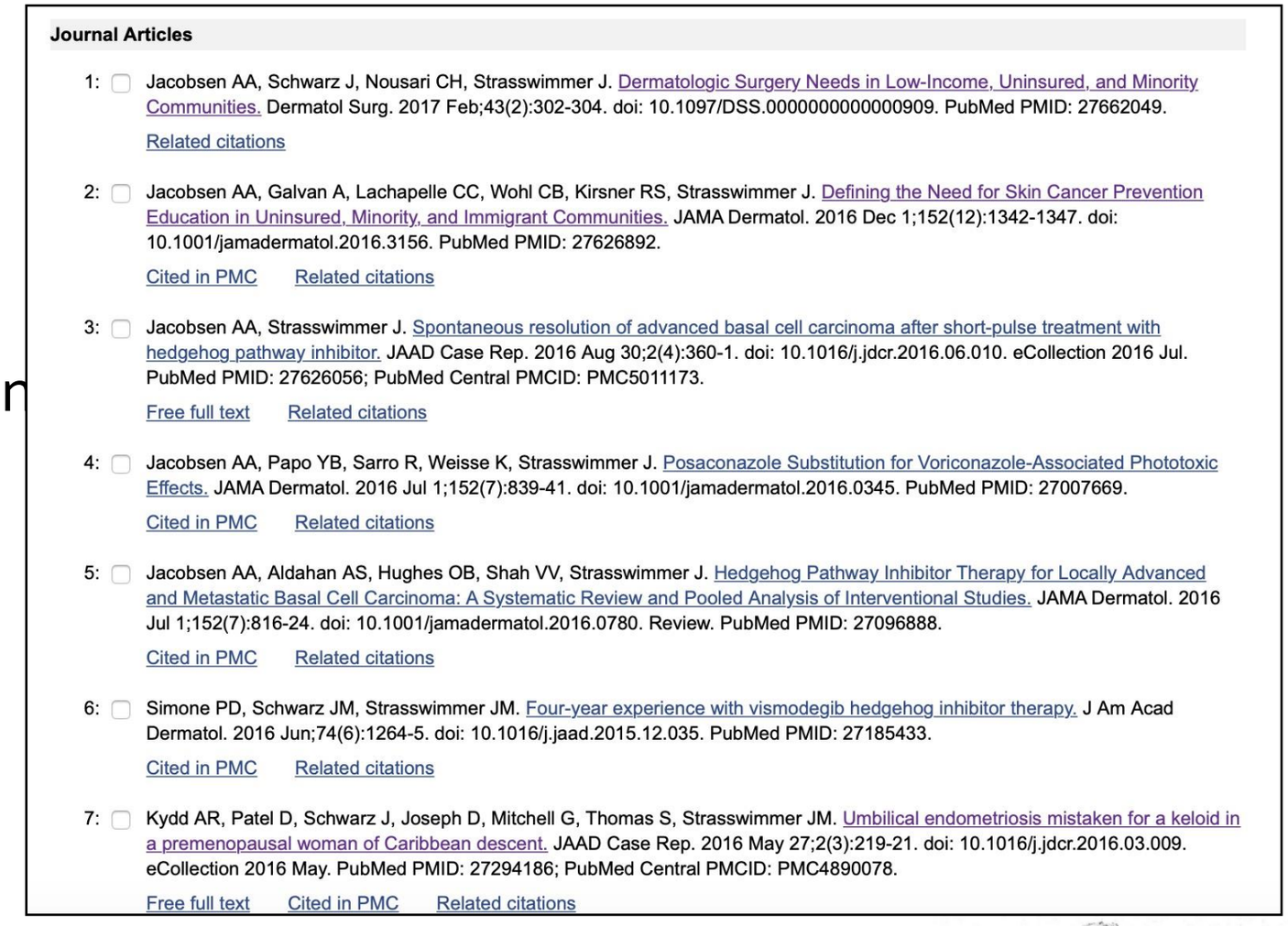
U. Miami: MD/MPH Dual Degree Curriculum]
FAU: MD program and Internal medicine residents

- Dermatology Rotation for students or residents
- Comprehensive self-instruction online
- Rotations in a variety of dermatology settings
- Publications:
  - with student or resident as primary author
  - collaborations with BRRH faculty
  - collaboration with FAU college fo science


Strasswimmer + Smirnov
Dermatology + Mohs Surgery

# Medical Student & Resident Teaching

- Dermatology Rotation for students or residents
- Comprehensive self-instruction online
- Rotations in a variety of dermatology settings
- Publications:
  - with student or resident as primary author
  - collaborations with BRRH faculty
  - collaboration with FAU college fo science



**Journal Articles**

1: Jacobsen AA, Schwarz J, Nousari CH, Strasswimmer J. Dermatologic Surgery Needs in Low-Income, Uninsured, and Minority Communities. Dermatol Surg. 2017 Feb;43(2):302-304. doi: 10.1097/DSS.0000000000000909. PubMed PMID: 27662049.
Related citations

2: Jacobsen AA, Galvan A, Lachapelle CC, Wohl CB, Kirsner RS, Strasswimmer J. Defining the Need for Skin Cancer Prevention Education in Uninsured, Minority, and Immigrant Communities. JAMA Dermatol. 2016 Dec 1;152(12):1342-1347. doi: 10.1001/jamadermatol.2016.3156. PubMed PMID: 27626892.
Cited in PMC Related citations

3: Jacobsen AA, Strasswimmer J. Spontaneous resolution of advanced basal cell carcinoma after short-pulse treatment with hedgehog pathway inhibitor. JAAD Case Rep. 2016 Aug 30;2(4):360-1. doi: 10.1016/j.jdcr.2016.06.010. eCollection 2016 Jul. PubMed PMID: 27626056; PubMed Central PMCID: PMC5011173.
Free full text Related citations

4: Jacobsen AA, Papo YB, Sarro R, Weisse K, Strasswimmer J. Posaconazole Substitution for Voriconazole-Associated Phototoxic Effects. JAMA Dermatol. 2016 Jul 1;152(7):839-41. doi: 10.1001/jamadermatol.2016.0345. PubMed PMID: 27007669.
Cited in PMC Related citations

5: Jacobsen AA, Aldahan AS, Hughes OB, Shah VV, Strasswimmer J. Hedgehog Pathway Inhibitor Therapy for Locally Advanced and Metastatic Basal Cell Carcinoma: A Systematic Review and Pooled Analysis of Interventional Studies. JAMA Dermatol. 2016 Jul 1;152(7):816-24. doi: 10.1001/jamadermatol.2016.0780. Review. PubMed PMID: 27096888.
Cited in PMC Related citations

6: Simone PD, Schwarz JM, Strasswimmer JM. Four-year experience with vismodegib hedgehog inhibitor therapy. J Am Acad Dermatol. 2016 Jun;74(6):1264-5. doi: 10.1016/j.jaad.2015.12.035. PubMed PMID: 27185433.
Cited in PMC Related citations

7: Kydd AR, Patel D, Schwarz J, Joseph D, Mitchell G, Thomas S, Strasswimmer JM. Umbilical endometriosis mistaken for a keloid in a premenopausal woman of Caribbean descent. JAAD Case Rep. 2016 May 27;2(3):219-21. doi: 10.1016/j.jdcr.2016.03.009. eCollection 2016 May. PubMed PMID: 27294186; PubMed Central PMCID: PMC4890078.
Free full text Cited in PMC Related citations

Strasswimmer + Smirnov
Dermatology + Mohs Surgery

# Medical Student & Resident Teaching

## Dermatology Medical Missions, Inc

### local & overseas medical mission program

International Medical Missions: 2008
AlbinoCare
Africa

Comprehensive Dermatology
& Cancer Care 2005
Caridad Center

International Medical Missions: 2012
CommunityCare
Grenada

Healthy Skin Head to Toe 2016
Education Project for
Community Health Workers

TeleDermatology Service for Free Clinics 2019

# Thank you

Child with albinism in Africa

Strasswimmer + Smirnov
Dermatology + Mohs Surgery