RhAPP

RHEUMATOLOGY ADVANCED PRACTICE PROVIDERS

Inaugural National Conference

December 3 – 5, 2020

VIRTUAL CONFERENCE

RhAPP
RHEUMATOLOGY ADVANCED PRACTICE PROVIDERS

The Derm ∞ Rheum Connection

Margaret Bobonich, DNP, FNP-C, DCNP, FAANP
Assistant Professor, Case Western Reserve University
Schools of Medicine and Nursing

Audrey Gibson, PA-C, MsPAS
Physician Assistant
Arthritis Center North Georgia

Disclosure

All faculty and staff involved in the planning or presentation of continuing education activities provided by the Annenberg Center for Health Sciences at Eisenhower (ACHS) are required to disclose to the audience any real or apparent commercial financial affiliations related to the content of the presentation or enduring material. Full disclosure of all commercial relationships must be made in writing to the audience prior to the activity. All staff at the Annenberg Center for Health Sciences at Eisenhower and Rheumatology Advanced Practice Providers (RhAPP) have no relationships to disclose.

Disclosures

Margaret Bobonich

- Lilly USA, AbbVie, UCB, Janssen,
  Center for Advanced Practice Dermatology

Audrey Gibson

- AbbVie, Sanofi-Genzyme

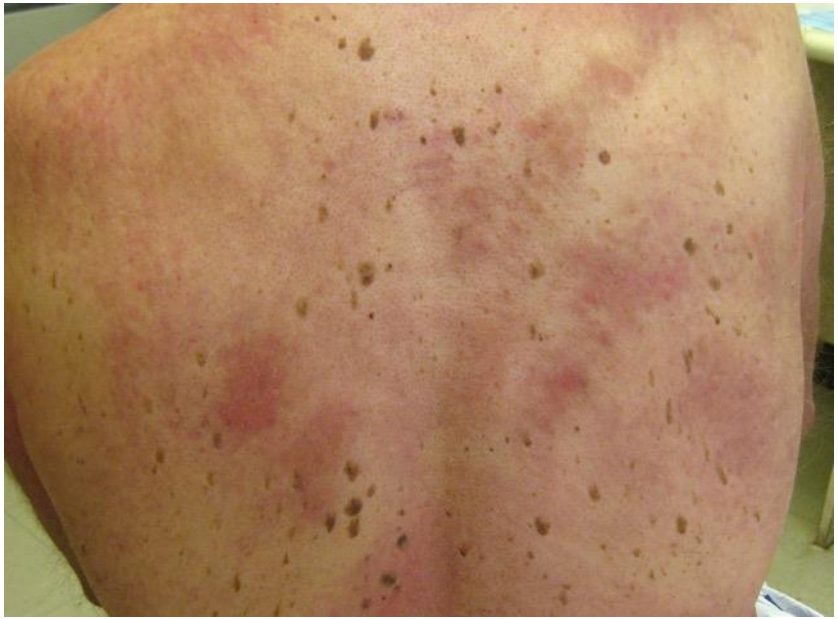
Case Study

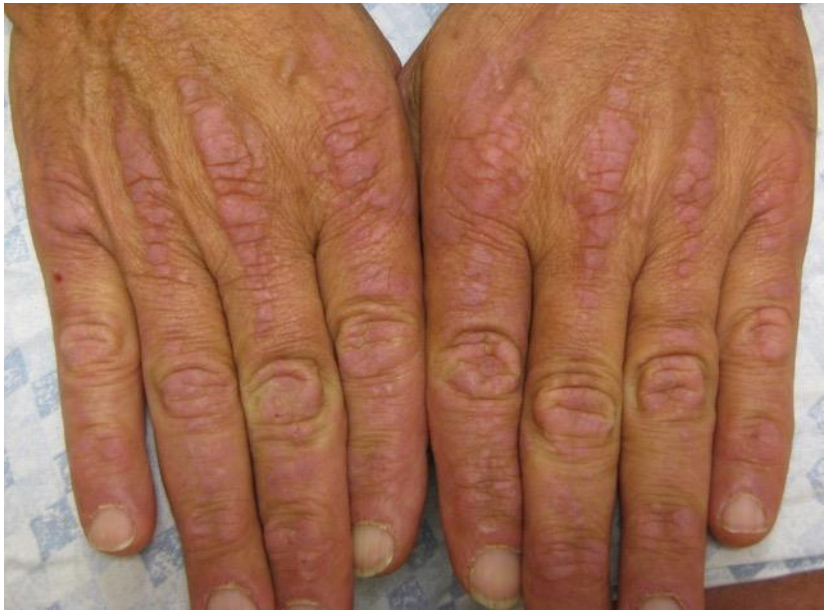
71 yr old male:

- History of red scaling rash, very pruritic
- Mostly on his back and arms/hands
- Worsen after vacation to Florida
- Now spreading to his scalp and neck
- ROS: unremarkable
- PMH: HTN (controlled) and hypercholesterolemia
- Meds: metoprolol and simvastatin
- Tx: Medrol dosepak by PCP with mild improvement initially, topical corticosteroids

Diagnostics: Punch biopsy (back)

Clinical Presentation





Diagnostic approach: Punch biopsy showing hyperkeratosis, vacuolar interface dermatitis, dermal edema and *mucin deposition*. Histology is similar to lupus erythematosus except negative lupus band (immunofluorescence)

Cutaneous Manifestations of DM

Adult

- Gottron papules
- Heliotrope rash
- Nailfold changes
- Shawl and holster sign
- “V” sign
- Scalp involvement
- VERY pruritic

Difference in juvenile dermatomyositis

- Similar to adults but rash more difuse
- Amyopathic is rare
- Calcinosis cutis
- Rare underlying malignancy & interstitial lung disease
- More ulcerative than adults

Dermatomyositis

- History
- Physical
- Imaging – CXR, PFTs, CT of lungs
- Labs-creatine kinase and aldolase, CBC with diff, CMP, ESR, CRP TSH
  - ANA, anti-Ro/SSA, anti-La/SSB, anti-ribonucleoprotein (RNP), and anti-Sm; anti-Jo-1
- Other Tests: Muscle biopsy, skin biopsy, EMG, MRI

Differential diagnosis

- Inflammatory myopathies – PM, DM, inclusion body, juvenile DM, vasculitis, overlap syndromes, RA, Sjogren's
- Inherited – acid maltase def., muscular dystrophy
- Drugs – cocaine, heroin, ETOH, corticosteroids, colchicine, antimalarial, penicillamine
- Endocrine – hypothyroidism, Cushing
- Electrolyte disorders – hypophosphatemia, hypocalcemia, hyper- or hyponatremia
- Infectious myopathies
  - Viral-flu, Coxsackie, HIV, adenovirus, EBV
  - Bacterial-lyme
  - Fungal
  - Parasitic-toxoplasmosis, trichinosis
- Rhabdomyolysis – crush traumas, seizures, ETOH, exertion, vascular surgery, malignant hyperthermia

Malignancy and Dermatomyositis

- Incidence: increased 5- to 7-fold compared with the general population
- Types: Adenocarcinomas of the cervix, lung, ovaries, pancreas, bladder, and stomach account for approximately 70% of the cancers associated with inflammatory myopathies
- Clinical risk factors: Evidence of capillary damage on muscle biopsy, Cutaneous necrosis, Cutaneous leukocytoclastic vasculitis, Older age at disease onset, Dysphagia
- Serum autoantibodies
  - Positive risk – "Cancer-associated myositis" antibodies to transcription intermediary factor (TIF)-1gamma and with antibodies to nuclear matrix protein (NXP)-2 (anti-MJ or anti-p140)
  - Negative risk – the presence of myositis-specific (anti-synthetase antibodies, anti-Mi-2, anti-SRP) and myositis-associated antibodies (anti-RNP, anti-PM-Scl, anti-Ku) appears to be associated with a decreased risk of malignancy but an increased risk of interstitial lung disease in DM

Approach to Screening

- Malignancy – All patients with DM should undergo a thorough H&P, with breast, rectal, and pelvic examinations; laboratory testing; and age-appropriate cancer screening tests
- Cardiac involvement – signs or symptoms of heart failure or of conduction abnormalities, ECHO and EKG
- Pulmonary disease – CXR, PFTs, CT
- Esophageal dysfunction – esophageal motility studies should be performed

Screening Continued

- CT of the chest/abdomen/pelvis
  - Older age at disease onset
  - Severe cutaneous disease, especially patients with the shawl sign or skin necrosis
  - Resistance to treatment
  - Prior history of malignancy with the risk of relapse
  - Absence of interstitial lung disease
  - Absence of myositis-specific and myositis-associated antibodies and the presence of the p155/140 and/or anti-NXP2 antibodies

Screening Continued

- CT of the chest/abdomen/pelvis
  - Older age at disease onset
  - Severe cutaneous disease, especially patients with the shawl sign or skin necrosis
  - Resistance to treatment
  - Prior history of malignancy with the risk of relapse
  - Absence of interstitial lung disease
  - Absence of myositis-specific and myositis-associated antibodies and the presence of the p155/140 and/or anti-NXP2 antibodies

Leatham, H., Schadt, C., Chisolm, S., et al. (2018). *Evidence supports blind screening for internal malignancy in dermatomyositis: data from 2 large US dermatology cohorts*. Medicine: Baltimore, 97(2):e9693. doi: 10.1097/MD.0000000000009639

Screening Continued

- Repeat cancer screening in patients is not well-established. Increased risk of cancer for at least five years in patients with DM (but not PM), although the risk declines annually
- Pediatrics – children with JDM or JPM do not have an increased risk of malignancy. Thus, a search for malignancy does not need to be made when children present with idiopathic inflammatory myopathy, unless the presenting features are unusual

Dermatomyositis Management

- Skin vs musculosketal
- Initially high dose steroid – 1 mg/kg per day and generally do not exceed 80 mg daily
- Azathioprine
- Methotrexate
- IVIG
- Antimalarials
- Other treatments – Rituximab, MMF, Calcineurin inhibitors, Cyclophosphamide, JAKs

Dermatomyositis Management

- Exercise
- Aspiration risk
- Sunlight avoidance
- Osteoporosis
- Opportunistic infections
- Immunizations

Case Study

62 yr old female

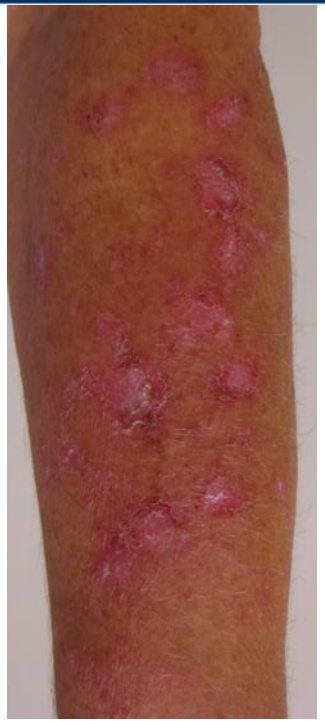
- Rash on arms, chest, shoulders and chest.
- Initially sunburn after outdoors but won't resolve

PMH: hypertension, hypothyroidism, GERD

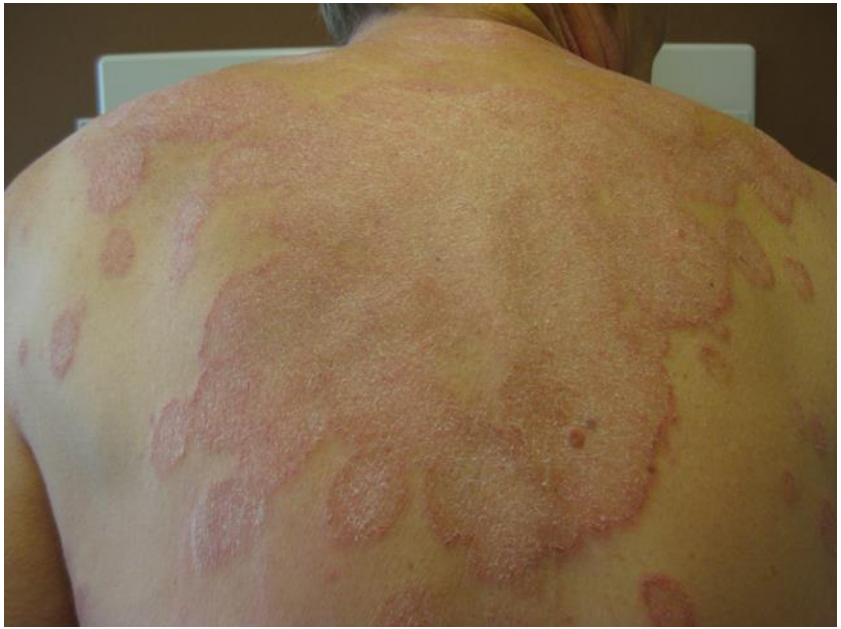
Meds: metoprolol, omeprazole, HCTZ, Synthroid

DDX: photodrug eruption, SCLE, drug-induced lupus, DM, porphyria, psoriasis

Diagnostics: punch biopsy showing hyperkeratosis, vacuolar interface dermatitis, dermal edema and *mucin deposition*. Add'l direct immunofluorescence shows positive lupus band



Lupus Erythematosus



Cutaneous disease	Systemic disease
	Acute lupus erythematosus
Subacute lupus erythematosus	
Discoid lupus erythematosus	

Subacute Cutaneous Lupus

- Highly photosensitive annular-polycyclic or papulosquamous eruption distributed symmetrically on sun-exposed areas
  - Upper back, chest, shoulders and extensor arms
  - Typically heal without scarring
  - Dyspigmentation can occur and persist for months
- Psoriasiform
  - more common, appears as psoriasiform plaques and can be misdiagnosed as photosensitive psoriasis
- Annular-polycyclic
  - Confused with figurate erythema or a superficial
  - dermatophyte infection

Diagnostics

Diagnostic workup

- KOH scraping
- Skin biopsy and labs can help differentiate
- Mild systemic disease, joint pains and lab abnormalities are common
  - +ANA (CAUTION)
  - +Ro/SSA, less frequent La/SSB

Diagnostics

- Nearly ½ of patients with SCLE have sufficient criteria for a diagnosis of SLE
- Yet only 10% go on to develop severe SLE disease.
- Screening for underlying SLE.
- ANA, CBC and UA is sufficient for those without other symptoms.
- If the ANA is elevated (> 1:160) or a patient has symptoms suggestive of systemic lupus, further testing is warranted.
  - Anti-dsDNA, anti-Smith, CMP, ESR,C3,C4.

Who’s at Risk

- SCLE is more female predominant than discoid lupus. The female to male ratio is 8:1 in SCLE compared with nearly 1:1 in discoid lupus.
- Early as 18 months to the elderly.
- However, it most commonly occurs in the 40 to 60 years age range.
- Unlike DLE, SCLE is uncommon in African Americans.

What Causes

- Autoimmune disease felt to be due to an interplay of genetics, hormones and environment
- SCLE is associated with the extended haplotype HLA DRB1*0301-B08
- Complement deficiencies
- Environment – the most well-known environmental trigger is ultraviolet light

Drug induced SCLE

As many as 1/3 are drug induced (prescription and OTC!)

- HTN
- Lipid lowering
- PPI
- Antifungals
- TNF-
- Newer agents
- Indistinguishable from idiopathic SCLE
- Ro/La antibodies
- Anti-histone
- ds-DNA may be positive

Management

- Sun avoidance and sun protection is the first step to therapy
  - UVA and UVB
  - Physical sunscreens
- SMOKING cessation!
- Topical therapy with steroids can be initiated as first-line therapy
- Antimalarials (hydroxychloroquine and quinacrine)
  - First-line systemic therapy (when to start?)
  - Up to 2/3 of patients with SCLE respond to single-agent or combination antimalarial therapy
  - Pregnancy
- Thalidomide, dapsone, methotrexate, mycophenolate mofetil, azathioprine, prednisone
- Emerging therapies: belimumab, rituximab, abatacept, baricitinab, ustekinumab

Resources

Tansley SL, McHugh NJ, Wedderburn LR. Adult and juvenile dermatomyositis: are the distinct clinical features explained by our current understanding of serological subgroups and pathogenic mechanisms?. *Arthritis Res Ther*. 2013;15(2):211. Published 2013 Apr 8. doi:10.1186/ar4198

Leatham, H., Schadt, C., Chisolm, S., et al. (2018). *Evidence supports blind screening for internal malignancy in dermatomyositis: data from 2 large US dermatology cohorts*. Medicine:Baltimore, 97(2):e9693. doi: 10.1097/MD.0000000000009639

Bogdanov, I., Kazandjieva, J., Darlenski, R., & Tsankov, N. (2018). Dermatomyositis: Current concepts. *Clinics in dermatology*, *36*(4), 450–458. https://doi.org/10.1016/j.clindermatol.2018.04.003

O'Brien, J. C., & Chong, B. F. (2017). Not Just Skin Deep: Systemic Disease Involvement in Patients With Cutaneous Lupus. *The Journal of Investigative Dermatology. Symposium Proceedings*, *18*(2), S69–S74. https://doi.org/10.1016/j.jisp.2016.09.001

Selva-O'Callaghan, A., Martinez-Gomez, X., Trallero-Araguas, E., & Pinal-Fernandez, I. (2018). The diagnostic work-up of cancer-associated myositis. *Curr Opin Rheumatology*, *30*(6):630-636.

Resources

Biazar C, Sigges J, Patsinakidis N, Ruland V, Amler S, Bonsmann G, et al. Cutaneous lupus erythematosus: first multicenter database analysis of 1002 patients from the European Society of Cutaneous Lupus Erythematosus (EUSCLE). Autoimmun Rev. 2013 Jan. 12(3):444-54.

Tiao J, Feng R, Carr K, Okawa J, Werth VP. Using the American College of Rheumatology (ACR) and Systemic Lupus International Collaborating Clinics (SLICC) criteria to determine the diagnosis of systemic lupus erythematosus (SLE) in patients with subacute cutaneous lupus erythematosus (SCLE). J Am Acad Dermatol. 2016 Feb 18.

Dalakas MC, Hohlfeld R. Polymyositis and dermatomyositis. Lancet 2003; 362:971.

Yang Z, Lin F, Qin B, et al. Polymyositis/dermatomyositis and malignancy risk: a metaanalysis study. J Rheumatol 2015; 42:282.

Oldroyd A, Sergeant JC, New P, et al. The temporal relationship between cancer and adult onset anti-transcriptional intermediary factor 1 antibody-positive dermatomyositis. Rheumatology (Oxford) 2019; 58:650.

RhAPP
RHEUMATOLOGY ADVANCED PRACTICE PROVIDERS

Thank You!