Cutaneous Manifestations of Sarcoidosis Study Guide

- Case of Lupus Perino
    - Differentials
        - Lupus pernio
        - Tuberculosis
        - Discoid lupus erythematosus
    - Introduce Sarcoidosis
        - Idiopathic non-infectious granulomatous disease that primarily involves the lungs
            - Due to hyperactivity of cell mediated immunity-> activation of macrophages and T cells-> granuloma formation
            - Increased Th1 cytokines- IL-2, IL-12, IL-18, and IFN-gamma and TNF-alpha by macrophages-> persistent TH1 and TNF activation;
            - Hyperactivity of macrophages and hypergammaglobulinemia
            - Cutaneous manifestations of sarcoid can be seen in ⅓ of patients and can be 1st sign of disease
            - Histologically- noncaseating epithelioid granulomas w/ sparse or absent surrounding lymphocytic inflammation
            - “Giant” langhans cells w/ asteroid bodies or schaumann bodies
            - Typical findings of:
                - **Bilateral hilar adenopathy**
                - Pulmonary reticular opacities-> Interstitial LD
                - Skin, joint, and/or eye lesions
            - Combination of fever, polyarthralgia, bilateral hilar adenopathy, and cutaneous lesions -> Lofgren Syndrome
            - Cutaneous sarcoidosis is “the great mimicker”
                - Wide variety of presentations: papules, plaques, nodules, infiltrative scars, annular, angiolupoid, psoriasiform, hypopigmented, atrophic, ulcerative lesions, scarring and nonscarring alopecia, erythroderma, and ichthyosiform lesions
        - Systemic Sarcoidosis
            - Pulmonary vs Extrapulmonary findings
            - Diffuse interstitial lung disease
        - Epidemiology
            - Bimodal: 25-35 and 45-65
            - Female>Male
            - More prevalent in African Americans and can have 10 year earlier disease onset than White Americans
                - Geographic relation
    - Cutaneous Manifestations of Systemic Sarcoidosis
        - Cutaneous
            - Skin involvement in up to 20-30% of disease

- Most common presentation is symmetric on face, neck, upper trunk, extremities
- Associated with systemic sarcoidosis, drug induced (TNF-alpha inhibitors) or from underlying lymphoma
- Prone to develop in sites of trauma- scars and tattoos

■ Spectrum of cutaneous manifestations
- Papules around the mouth
  - Can be red, brownish-red, and brown to violet and may signify acute disease
  - Important to investigate sudden onset of lymphadenopathy, acute arthritis, acute uveitis, and parotid gland enlargement if have new maculopapular eruption
- Tattoos/Scar associated
  - favor red and yellow pigments
  - "Infiltrative sarcoidosis" can form in incisions
  - Can signify reactivation of dz process
- Plaques- trunk and extremities
  - round, oval, or annular, discrete plaques which are flesh-colored, erythematous, or red-brown
  - Favor extensor surfaces
  - Can be a sign of chronic systemic diseases, such as pulmonary disease, uveitis, and lymphadenopathy
  - Can mimic discoid lupus erythematosus (sarcoid like reaction)

○ Workup

■ Labs: CBC, CMP, LFTs, Cr, Ca, 24 hr Urine Ca, ACE level
- Look for
  - Leukopenia (anemia uncommon)
  - Hypercalcemia (hypercalcuria more common)
  - BUN/CR to evaluate for kidney disease; LFTs for liver disease (eg elevated alk phos can signify liver involvement)
  - Elevated ACE in 60% of patients (associated with high granuloma burden), but poor sensitivity
  - Controversial diagnostic test
  - Ask about kidney stones

■ TB skin test to rule out infection ->quantiferon (skin test can be false positive d/t pathergy)

■ Skin Biopsy
- Noncaseating granuloma

■ Chest Imaging
- CXR-
  - **bilateral hilar adenopathy**

            - parenchymal dz- normal, diffuse reticular or ground glass opacities, nodular consolidation, and cystic scarring
            - Important for staging
        - High res CT Scan- allow for better imaging of parenchyma and mediastinum
            - Characteristic small nodules in a perilymphatic distribution predominantly in the peribronchovascular interstitium, near fissures, and in the centrilobular regions
    - PFTs
        - DLCO, spirometry to establish baseline and track lung function
    - EKG
        - Screen for cardiac symptoms to r/o cardiac involvement
    - Eyes
        - Ask about vision syx; eye exam every 6 months
    - Brain
        - Ask about numbness tingling
    - Referral to Rheumatology, Pulmonology, Dermatology
- Lupus pernio
    - Papules and plaques in areas that get cold (name-pernio) like the nose, ears, and cheeks
    - Can be a sign of lung involvement
- Nail
    - Clubbing, subungual hyperkeratosis, onycholysis
- Oral
    - Soft mucous, gingival tissue, salivary glands
- Cutaneous (tattoo)
    - Predilection for red/yellow ink
- Hair manifestations
- Lofgren Syndrome
    - Erythema nodosum, hilar adenopathy, fever, arthritis
    - Higher incidence in pregnant females
    - Can resolve in 2 years
- Heerfodt syndrome
    - Parotid gland enlargement, uveitis, fever, cranial nerve palsy
    - pathognomic
- Treatment
    - Cutaneous Sarcoid is managed w/ intralesional or topical corticosteroids on pt concerns (watch for septal perf/airway with lupus pernio)
    - Monitoring depends on disease severity and can very from 3-4 months with active disease to 1-2 years

- Case of Erythema Nodosum (parasarcoid)
    - Associations
        - Sarcoidosis
        - Inflammatory Bowel Disease

        - Behcet Syndrome:
        - Sweet Syndrome
        - Histoplasmosis/Coccidioidomycosis
        - Tuberculosis
        - PSGN; medications
    - Erythema Nodosum
        - Inflammatory panniculitis/acute nodular hypodermis
        - Type IV hypersensitivity reaction precipitated by infection, pregnancy, medications, connective tissue disease, or malignancy
        - Histology
            - Septal panniculitis with prominent mixed inflammatory infiltrate consisting of lymphocytes, histiocytes, eosinophils, and numerous neutrophils, infiltrating from the septa to the periphery of the adjacent lobules
        - Pathophysiology
        - Idiopathic or triggered by medications/infection
        - May be due to deposition of immune complex in the venules of subcutaneous fat, production of oxygen free radicals, TNF-alpha and granuloma formation
    - Epidemiology
        - Ages 25-40
        - Women > Men (3-6:1)
    - Social Determinants of Health
        - More common in white patients than Black patients; but may be an artifact of poor diagnostic accuracy/recognition of erythema in patients with skin of color
    - Workup
        - Generally a clinical diagnosis, but does not determine underlying cause
        - Must perform adjunctive thorough medical history, ROS, and review of medications
        - Additional labs (based on presentation & history)
            - Blood count, C-reactive protein
            - Mantoux/TST + chest x-ray + interferon-gamma blood test (if suspect TB)
                - Throat smear + culture + rapid test - serology: anti-streptolysin O and streptodornase (if streptococcal suspicion)
            - Viral serologies
            - Stool studies (if GI syx)
        - Cutaneous biopsy (rarely indicated)

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