35- Hidradenitis Suppurativa

Background:

- HS (aka acne inversa) is a chronic, inflammatory skin disorder beginning after puberty with painful papules, nodules, and draining abscess-like lesions that may progress to sinus tracts and disfiguring scarring
  - Most commonly in armpits, inframammary areas, and groin
  - HS with lesions outside of typical areas is referred to as "*ectopic HS*"
- Risk factors:
  - Female
  - African ancestry
  - Lower socioeconomic status
- HS is a clinical diagnosis
  - Wound cultures not recommended unless signs of secondary infection
- Many different staging criteria including Hurley, Sartorius staging, and the HS Clinical Response (HiSCR) staging used in clinical trials
  - Hurley staging system (most common)
    - Stage 1: isolated papules, nodules, and abscesses of the intertriginous areas with *minimal scarring*
    - Stage 2: similar lesions to stage 1 with a *limited number* of scarring lesions and sinuses that are *NOT interconnected*
    - Stage 3: similar lesions to previous stages with *diffuse and interconnected scarring sinuses*
- PEARL: Other clues for diagnosis
  - Double comedones
  - Cycles of flares and remissions
    - Severe pain and odorous drainage possible

Pathogenesis:

- Influenced by genetics, an over-active immune system, hormones, and various triggers such as obesity and smoking
- NOT caused by infection or poor hygiene
  - Bacteria can instead enter pre-existing wounds and lesions and overgrow
- Comorbidities (ADIOS PAPI)
  - **A**- Arthritis (up to 50% of HS patients)
  - **D**- Diabetes (up to 30% of HS patients, 3x increased risk)
  - **I**- Inflammatory bowel disease (2x increased risk for Crohn's, 1.5x increased risk for UC)
  - **O**- Obesity (approximately 75% of HS patients)
  - **S**- Smoking (approximately 75% of HS patients) or squamous cell carcinoma
  - **P**- PCOS (up to 10% of HS patients, 3x increased risk)
  - **A**- Anxiety or depression, acne tetrad
  - **P**- Pyoderma gangrenosum
  - **I**- Insulin resistance or metabolic syndrome
- HS is part of the follicular occlusion tetrad (patients may have 2-3 of these conditions in lifetime, can potentially have all 4)
  - Dissecting cellulitis of the scalp
  - Acne congloblata
  - Hidradenitis suppurativa
  - Pilonidal cysts
- Other possible HS triggers
  - Dairy
  - Brewer's yeast
  - Friction
  - Deodorant
  - Shaving
  - Vitamin D deficiency
    - Supplementation may decrease inflammatory nodules
    - Zinc supplementation may be also be helpful
      - Zinc is available as zinc gluconate and zinc sulfate, remember that zinc **g**luconate is the "**g**ood" to buy

Treatment

- Treatments for HS target four main factors: follicular occlusion, chronic inflammation, hormones, and secondary infection

1) Trigger avoidance

- Smoking cessation and weight loss may induce remission in applicable patients
  - Consider referral to nutrition specialist
  - Patients should be followed by a PCP for management of comorbidities
- Can reduce or eliminate wearing of tight-fitting clothes, close shaving of affected areas, and ingestion of brewer's yeast found in beer, breads, and other supplements

2) Washes and topical treatments
   - Antibacterial washes (benzoyl peroxide or chlorhexidine (Hibiclens), zinc pyrithione)
   - Topical antibiotic gels (clindamycin 1% solution for pustules)

3) Systemic oral agents
   - Oral antibiotics
     - Doxycycline 100 mg BID
     - Clindamycin 300 mg BID with rifampin 300 mg BID
       - Check for drug-drug interactions with rifampin and warn patients about orange discoloration of bodily fluids with rifampin use
     - 2nd to 3rd line: Rifampin 300 mg BID with moxifloxacin 400 mg daily and metronidazole 500 mg BID to TID
     - Less commonly: Dapsone 50-200 mg daily, other oral antibiotics such as Bactrim
     - Rescue treatment or bridge to surgery: IV ertapenem at 1g daily
   - Retinoids
     - Isotretinoin 0.5 to 1 mg/kg/day
       - This regimen may be especially beneficial in HS patients with bad acne
     - Acitretin 0.5 mg/kg/day
       - Not for women of childbearing age
   - Hormonal therapies
     - Spironolactone 100-150 mg daily
     - Metformin 500 mg BID or TID
       - Beneficial in HS patients with PCOS
       - Avoid in patients with liver and kidney disease
       - Common AEs include headaches, GI upset, and taste disturbance
       - Caution patients about alcohol use- increased risk of lactic acidosis
     - Oral contraceptives with ethinyl estradiol
       - Progestin-only minipill can worsen HS
   - Immunomodulators
     - Prednisone 0.5 to 1 mg/kg/day tapered over days to weeks for flares and/or to bridge to other treatments
       - AEs include hypertension, hyperglycemia, peptic ulcers, cataracts, glaucoma, osteoporosis, serious infections, etc
     - Other immunomodulators include cyclosporine, colchicine with minocycline, and apremilast (Otezla)

4) Biologics
   - TNF-alpha inhibitors
     - Adalimumab (Humira)
       - *Onl*y FDA approved treatment for HS
       - Dosing typically higher than what is used for psoriasis patients
         a. For HS dosed at 160 mg at onset, 80 mg at week 2, 40 mg **weekly** at week 4
            i. Dosing for psoriasis is 80mg

day 1 and 40 mg **every two weeks** starting day 8

b. Maintenance is *weekly* for HS compared to every *two weeks* for psoriasis

- Infliximab (Remicade)
  - 5 to 10 mg/kg at weeks 0, 2, 6 and then every 4 to 8 weeks after
- IL-12/IL-23
  - Ustekinumab (Stelara)
- IL-1 inhibitor
  - Anakinra (Kineret) for unresponsive patients

5) Surgery
- After failure of topicals, oral agents, and biologics
- Multiple options including incision and drainage, deroofing, excision, CO2 laser excision, marsupialization, cryotherapy
- Incision and drainage
  - Provides pain relief, but has 100% recurrence rate
    - Only recommended for acute abscesses for discomfort relief
- Deroofing
  - Recurrence rate of 25% or less
  - Involves removing the "roof" or overlying skin above an abscess or sinus tract
    - Area to be treated is numbed and prepped, then probing is performed through a draining sinus opening or through a small incision
      a. After probing for the depth of the sinus tract, the overlying skin is surgically removed so that the floor of the tract can heal by secondary intention
- Surgical excision
  - Variety of healing approaches including primary closure, secondary intention, flaps, and grafts
- Lasers
  - Nd:YAG
  - Ablation with CO2 laser
- Medical treatments can and should be continued at time of procedures
  - Surgical complications are more likely during an acute flare compared to when a patient is well controlled

- Other important points
  - Always address pain control with patients
  - Can consider complementary and alternative treatments
  - All treatments work much better for patients with stage 1 or 2 disease
    - Once disease has progressed to stage 3, systemic treatments are not as effective