Syphilis the Great Masquerader...What to Look for and Why

Presented by Paras Patel, DDS

What is Syphilis?

- Is an infectious disease that is bacterial in origin caused by *Treponema pallidum*
- Most often transmitted through direct sexual contact
  - Can be vertically transmitted from mother to child

Epidemiology

- The rates of sexually transmitted infections/diseases have been increasing over the last half decade
- Primary and secondary syphilis has increased 71% since 2014
  - Texas #’s: 2,528 cases (2018)
    - 8.8/100K residents
- Congenital syphilis has increased 185% since 2014
  - Texas #’s: 368 cases (2018)
    - 91.0/100K residents
- Males > Females
  - MSM (men who have sex with men only) account for the highest rates
- Blacks >>> Hispanic >> White
- Age 15-44 most common
- Highest rates in mid 20’s -30’s

Syphilis Through The Stages

- Once an individual is infected the infection progresses through 3(4) classic phases of disease:

  - **Primary: 3-90 days after initial infection**
    - Classic clinical manifestation is the chancre
      - Small ulcerated lesion somewhat raised in its appearance and typically painless
      - Most common oral site is the lip, but can affect any mucosal surface
    - Rarely can present as an exophytic lesion mimicking a vasoproliferative process, such as a pyogenic granuloma
    - Regional lymphadenopathy (LAD) may be present
    - Organism is spreading through the lymphatics at this point
    - Lesions typically heal within 3-8 weeks
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- **Secondary: 4-10 weeks after initial infection**
  - Characteristic lesions:
    - Mucous patch:
    - Sensitive whitish patches affecting the oral mucosa
    - Multiple patches may coalesce
    - Necrosis often observed leading to sloughing
    - Tongue, lip, buccal mucosa and palate most often affected
  - Condyloma lata:
    - Papillary lesions mimicking viral papillomas
    - More common in anogenital region
  - May arise prior to resolution of lesions associated with primary syphilis
  - Evidence of systemic involvement is noted:
    - Painless LAD
    - Sore throat
    - Malaise
    - Headache
    - Fever
    - Weight loss
    - Musculoskeletal pain
    - Maculopapular rash
    - Affecting palms and soles
  - Resolution can be seen 3-12 weeks
  - Occasional lesions may recur

- **Latent: 1-30 years**
  - Period of asymptomatic infection that follows secondary syphilis
  - Latency can span from 1-30 years prior to progression to tertiary syphilis

- **Tertiary: follows latent phase**
  - Variable onset depending on duration of latency
  - Characteristic lesions:
    - Vascular affects as a result of prior arteritis:
      - Aneurysm of ascending aorta, aortic regurgitation
    - CNS involvement:
      - Tabes dorsalis, dementia, paresis
    - Ocular lesions:
      - Iritis, Argyll Robertson pupil
    - Gumma
      - Nodular ulcerative lesions with extensive destruction of surrounding tissues
      - Due to granulomatous inflammation
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- With palatal involvement perforation into nasal cavity can be observed
  - Interstitial and Luetic glossitis:
    - Multifocal granulomatous inflammation of tongue with areas of contracture and atrophy

- **Congenital syphilis**
  - Refers to fetal infection
  - Mother has the potential to transmit infection during any stage of disease
    - Pregnant women with untreated or inadequately treated primary or secondary infection are more likely result in transmission to fetus
    - 40-50% of babies from mothers with untreated syphilis will be either stillborn or die within the neonatal period
  - Clinical signs and symptoms:
    - Hutchinson Triad:
      - Hutchinson teeth:
        - Hutchinson incisors: notched incisors with greatest mesiodistal width in middle third of crown (Screwdriver-shaped)
      - Mulberry molars: Occlusal taper with numerous globular occlusal enamel cusp-like projections
      - Ocular interstitial keratitis:
        - Corneal inflammation and eventual scarring
    - 8th nerve deafness
    - Frontal bossing
    - Saddle-nosed deformity
    - Higoumenaki sign:
      - Clavicular enlargement near sternum
    - Rhagades:
      - Perioral fissuring
    - Saber shin:
      - Anterior bowing of tibia as a result of periostitis
    - Clutton joint:
      - Painless synovitis and enlargement of joints

- Texas law requires testing for syphilis at first prenatal visits, during the third trimester and at delivery
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Diagnosis

- Various methods of detection including tissue biopsy/smear with additional staining for bacterial organisms as well as non-specific and specific serologic studies.

  - Non-specific:
    - VDRL: venereal disease research laboratory
    - RPR: rapid plasma reagin
      - After first 3 weeks of infection strong positivity, which dissipates with latency
      - False negative with HIV positive individuals
    - Tissue sampling may be necessary

  - Specific:
    - FTA-ABS: fluorescent treponemal antibody absorption
    - TPHA: T. pallidum hemagglutination assay
    - TPPA: T. pallidum particle agglutination assay
    - MHA-TP: Microhemagglutination assay for antibody to T. pallidum
    - Antibody testing that is highly sensitive
      - Positivity remains for life and therefore reinfection will require tissue sampling

Treatment

- Can vary depending on patient situation
- First line treatment of choice is Penicillin
  - Doxycycline is typically second-line
- While a clinical and serologic cure may be observed, the organism can gain access to the CNS and maintain a population within lymph nodes that will not be affected by drugs administered