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 maybe observed, the organism can gain access to the CNS and maintain a population within lymph nodes that will not be affected by drugs administered