The Great Pox: Syphilis
Then and Now
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Disclosures

• I have nothing to disclose.

Learning objectives

• Increase knowledge about the history of syphilis.
• Describe the epidemiology of syphilis in Texas.
• Identify the clinical presentation of primary & secondary syphilis, tertiary syphilis, neurosyphilis, and congenital syphilis.
• Identify treatment options for each stage of syphilis.
History

Two Theories

New World/Columbian
- Syphilis was endemic in present-day Haiti
- Acquired by Columbus and carried to Europe

Old World/Pre-Columbian
- Syphilis originated in Africa
- Transmitted to Europe before Columbus


The Epidemic Grows

- Europe in 1495
- India in 1498
- China in 1505
- On King Charles VIII of France’s army moving through Italy in 1494:
  On their flippancy way through Italy, the French carelessly picked up Genoa, Naples, and syphilis. Then they were thrown out and deprived of Naples and Genoa. But they did not lose everything syphilis went with them. Voltaire

**What to call this disease?**

- The Great Pox
- Lues venereum (venereal disease)
- Morbus gallicus (French disease)
- Italian disease
- Turkish disease
- Christian disease
- British disease
- Portuguese disease
- Chinese pox
- Gallic disease
- Grandgore
- Neapolitan disease
- Disease of Naples
- Polish disease
- Spanish disease
- German disease
- Syphilis
- Hieronymus Fracastorius, 1530 in Syphilis Sive Morbus Gallicus


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**Fracastoro. 1530**

A shepherd once (distrust not ancient fame)
Possest these downs, and Syphilus his name.
He first wore Buboes dreadful to the sight.
First felt strange pains, and sleepless passed the night.
From him the malady received its name.
The neighboring shepherds catch’d the spreading Flame


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- 1838: Syphilis & Gonorrhea are separate diseases
- 1838: Syphilis described in primary, secondary, and tertiary stages
- 1905: Treponema pallidum identified as the causative organism
- Mercury, holy wood, guaiacum, arsenic compounds, sweating and bismuth were treatments of choice
  - 1909: Salvarsan (arsphenamine) involved multiple injections over 18 months
- 1914: Malaria inoculation used as treatment
- 1943: Penicillin was used to successfully cure patients with syphilis
- The Tuskegee Syphilis Study

Syphilis in Texas

Nationwide

Total Syphilis Cases
- In 2013, the nationwide rate of all cases of syphilis was 18.0/100,000

Primary & Secondary Syphilis
- In 2012-2013, rate increased 10% to 5.5/100,000
- Texas is #13 in the nation for P&S Syphilis cases
- Bexar County is #9 in the nation, Harris County is #8

CDC Sexually Transmitted Disease Surveillance 2013, December 2014

Texas 2013

Total Syphilis Cases
- 7,019 reported cases
- 26.5/100,000 statewide
- Among men, rate was 40.9/100,000 in 2013, up from 27.9/100,000 in 2006
- Among 20-24 year olds of both sexes, the rate was 70.7/100,000
- The rate of syphilis infection among blacks was 77.3/100,000 compared to 13.4 for whites and 27.4 for Hispanics

Primary and Secondary Cases
- 1,468 total cases
- 5.6/100,000
- In 2013, the rate of P&S syphilis among men was 9.9/100,000
- Among 20-24 years olds of both sexes the rate was 17.2/100,000
- The rate of P&S syphilis among blacks was 16.1/100,000 compared to 3.3 for whites and 5.2 for Hispanics

Data from DSHS 2013 STD Surveillance Report
2013 Rates by Texas County

<table>
<thead>
<tr>
<th>Total Syphilis</th>
<th>Primary &amp; Secondary Syphilis</th>
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</thead>
<tbody>
<tr>
<td>• Bexar 61.4</td>
<td>• Bexar 16.6</td>
</tr>
<tr>
<td>• Dallas 55.8</td>
<td>• Dallas 10.0</td>
</tr>
<tr>
<td>• Harris 39.0</td>
<td>• Travis 12.1</td>
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<tr>
<td>• Travis 38.6</td>
<td>• Tarrant 7.9</td>
</tr>
<tr>
<td>• Tarrant 22.5</td>
<td>• Harris 7.1</td>
</tr>
<tr>
<td>• Webb 14.9</td>
<td>• Webb 0.8</td>
</tr>
</tbody>
</table>

Data from DSHS 2013 STD Surveillance Report; Rates per 100,000 population

Know syphilis in all its manifestations and relations, and all other things clinical will be added unto you.

—Sir Astley Cooper


P&S Syphilis

- Treponema Pallidum
  - Primary Syphilis
    - Incubation: 10-90 days
    - Signs & Symptoms
      - Chancre
      - Lymphadenopathy
  - Secondary Syphilis
    - Up to 6 months after chancre
    - Signs & Symptoms
      - Rash
      - Palmer/Pianer
      - Lymphadenopathy
      - Fever, Malaise, Arteria
      - Headache, Meningitis
      - Iris, Iridocyclitis
      - Condylomata lata
Tertiary Syphilis

- Occurs after latency period
  - Early latent <1 year
  - Late latent >1 year

Signs & Symptoms
- Lues maligna
- Gummas
- Leukoplakia
- Optic atrophy, CN palsies
- Gumma in respiratory tract, GI tract

McPhee & Papadakis, 2012

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Syphilis

- Neurosyphilis
  - Can occur at any point
  - Signs & Symptoms
    - Asymptomatic
    - Positive CSF serology, increased cell count and protein
    - Meningoencephalitis
      - Symptoms of acute or chronic meningitis
      - CSF abnormalities
      - Increased cells, protein
      - Positive VDRL
  - Tabes Dorsalis
    - Argyll Robertson Pupil

McPhee & Papadakis, 2012

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Congenital Syphilis

- Early congenital syphilis
  - Presentation before age 2
    - Thick, pale placenta & “Barbers Pole” umbilical cord
    - Hepatomegaly
    - Swollens
    - Fractures, “saw tooth metaphysis,” moth-eaten appearance on radiographs

- Late congenital syphilis
  - Presentation after age 2
    - Frontal bossing, saddle nose
    - Hearing loss
    - Hutchinson teeth
    - Saber shin

Up to Date, Congenital Syphilis: Clinical Features & Diagnosis, April 2013
**Syphilis**

- **Testing**
  - Darkfield Testing
  - Non-Treponemal Testing
    - VDRL
  - RPR (Rapid plasma reagin)
    - Usually positive 1-3 weeks after appearance of chancre
  - Treponemal Testing
    - T pallidum hemagglutination (TPHA)
    - T pallidum particle agglutination (TPPA)
    - Fluorescent treponemal antibody absorption test (FTA-ABS)
  - Proven, highly probable, presumed, at-risk congenital syphilis

McPhee & Papadakis, 2012; Up to Date, Congenital Syphilis: Clinical Features & Diagnosis, April 2013

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**RPR Interpretation**

- Titer value reported
  - 1:1, 1:4...
  - Value will increase with new or re-infection
  - May drop rapidly after treatment

- RPR or EIA first?

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**Adult Treatment:**

- Primary & Secondary: Benzathine Penicillin G 2.4 million units IM single dose
- Tertiary: Benzathine Penicillin G 2.4 million units IM weekly x 3 weeks
- Latent:
  - Early latent: Benzathine penicillin G 2.4 million units IM single dose
  - Late Latent or Latent of Unknown Duration: Benzathine Penicillin G 2.4 million units IM weekly x 3 weeks
- Neurosyphilis: Aqueous crystalline penicillin G 18-24 million units per day: 3-4 million units IV q 6 hours or continuous infusion x 10-14 days
  - Alternative: Procaine penicillin 2.4 million units IM once daily PLUS probenecid 500 mg PO QID, both x 10-14 days

- Jarisch-Herxheimer Reaction

- Partners need to be tested and treated

- Refer to CDC for treatment of special populations

Syphilis & HIV

- Syphilis may increase the transmission of HIV and affect CD4 and viral load
- Atypical presentation
- Widespread rash
- Neurosyphilis occurs rapidly
- Diagnosis and treatment are the same for persons with and without HIV

Information From: http://www.dshs.state.tx.us/hivstd/healthcare/reporting.shtm

• Diagnosis of Primary and Secondary Syphilis must be phoned into the local health department
• For questions, Visit: http://www.dshs.state.tx.us/hivstd/healthcare/reporting.shtm, contact your local health department or call 1-800-708-8868.

Texas Department of State Health Services STD Surveillance Report, 2012