

## 54 – Pharyngitis Syndromes and Group A Strep

Speaker: Karen Bloch, MD



### Pharyngitis Syndromes Including Group A Strep Pharyngitis

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### Disclosures of Financial Relationships with Relevant Commercial Interests

- None

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### Think Like a Realtor

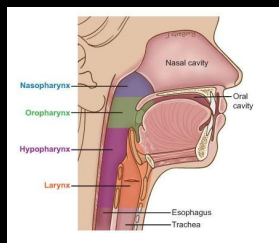


### Think Like A Realtor



Location  
Location  
Location

### Pharyngitis



- Small square footage
- Micro-neighborhoods
- Regional differences

### Case 1

38yo female with 1 day of sore throat and fever.

Childhood history of anaphylaxis to penicillin.

Physical exam

T=102.3

HEENT-tonsillar purulence

Neck-Tender bilateral anterior LAN

Labs:

Rapid strep antigen test negative



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### Question 1

What is the most appropriate antimicrobial treatment?

- A. Cephalexin
- B. None
- C. Doxycycline
- D. Clindamycin
- E. Levofloxacin

### Group A streptococcus

- AKA *Streptococcus pyogenes*
- 5-15% sore throats in adults.
- Usually self-limited infection (even untreated)
- Viral and bacterial pharyngitis clinically similar



### Differentiating Pharyngitis

#### GAS

- Sudden onset
- Fever
- Onset in winter and early spring
- Lymphadenopathy
- Exposure to close contact with streptococcal pharyngitis

#### Viral pharyngitis

- The 3 C's
  - Conjunctivitis
  - Coryza
  - Cough
- Hoarseness
- Diarrhea
- Ulcerative stomatitis
- Tonsils red, but rarely enlarged or purulent

### Differentiating Pharyngitis

#### GAS



#### Viral pharyngitis



VS

### Modified Centor Score

Points	Strep probability	Management
0 or 1	< 10%	No antibiotic or culture
2	11 -17%	Antibiotic if RADT or culture +
3	28 -35%	Antibiotic if RADT or culture +
4 or 5	35-50%	Antibiotic if RADT or culture +

- Centor criteria useful for negative predictive value to exclude streptococcal pharyngitis.
- IDSA guidelines recommend antibiotics only following a positive testing.

### Streptococcal Clues

- Palatal petechia



- Scarletina



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### Strawberry tongue

- Group A strep
- Staph toxic shock
- Kawasaki disease

### Laboratory Diagnosis

- Adults:
  - RADT screen, if negative, culture optional
- ASO titer or Anti-DNAse B antibodies
  - helpful in diagnosis of rheumatic fever and post-streptococcal glomerulonephritis, but **not** for strep pharyngitis.

### Treatment for GAS Pharyngitis

- First line:
  - Oral Penicillin or amoxicillin x 10 days

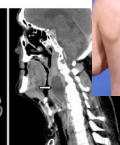
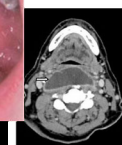
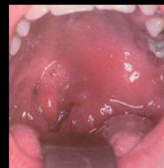


#### PCN Allergic:

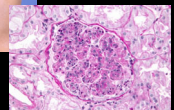
- cephalosporin, clindamycin, macrolides
- Not recommended: tetracyclines, sulfonamides, fluoroquinolones

### Secondary Complications

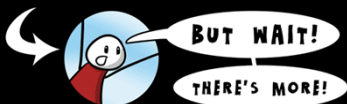
- Infectious complications



- Immunologic complications



### Pharyngitis and....



### Pharyngitis & Rash

- Young adult with fever, sore throat, tonsillar exudate, scarlet fever-like rash
- Negative RADT and culture.



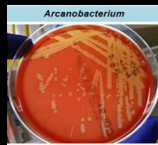
**Arcanobacterium haemolyticum**

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### *Arcanobacterium haemolyticum*

- Gram positive rod.
- Scarletiform rash in ~50%.
- Treatment: azithromycin (clinda, PCN).
- Rarely life-threatening sequelae.



### Pharyngitis & Rash

- Acute HIV
- Secondary syphilis

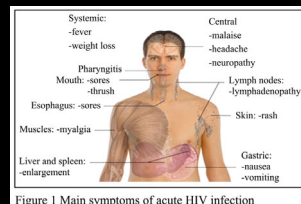


Figure 1 Main symptoms of acute HIV infection



### Pharyngitis after Receptive Oral Intercourse

#### **Neisseria gonorrhoeae**

- Highest risk MSM
- Most asymptomatic
- Nonspecific presentation
- Diagnose by nucleic acid amplification test of pharyngeal swab

#### **Herpes simplex virus**

- HSV 1 or 2
- Usually with acute infection
- Nonspecific presentation
- Labial or genital ulcers variably present

### Pharyngitis & Conjunctivitis

- College freshman with sore throat, fever, and conjunctivitis.
- Roommate and 3 others in her dorm with similar syndrome

#### **Adenovirus**



Epidemics in group living situations—barracks, dorms, camps, etc

### Pharyngitis and Vesicles

- 35 yo man with sore throat, low grade fever, and lesions on palms & soles. His 3 yo son is sick with a similar illness.

#### **Hand, Foot, and Mouth disease**



- Caused by enteroviruses (most common Coxsackie virus)
- Overlap with herpangina (oral lesions only)
- More common in kids (often serve as vector)

### Case 2

- A 62 yo man presents with 24hr of fever, chills, odynophagia and diarrhea.
- He works on a vineyard in Napa Valley, and last week participated in the grape harvest. He admits to sampling the grape must.
- His cat recently had kittens



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### Case 2

- PE:  
T=102.4, HR=122, BP=97/52  
Ill-appearing, left tonsil swollen and erythematous  
Left suppurative lymph node tender to palpation



WBC=12.3

CMAJ 2014;186:E62

### Question 2

What is the most likely cause of this patient's illness?

- A. Toxoplasmosis
- B. Bartonellosis (Cat Scratch Fever)
- C. Tularemia
- D. Epstein Barr virus
- E. Scrofula (mycobacterial lymphadenitis)

### Oropharyngeal Tularemia

- Uncommon in the US
- Typically through ingestion (or rarely inhalation)
  - Inadequately cooked game
  - Contaminated tap water (Turkey)
  - Rodent contamination
- Exudative tonsillitis, ulcers, **swollen LAN**
- Diagnosis: culture (alert lab), serology
- Treatment: streptomycin, doxycycline or quinolone



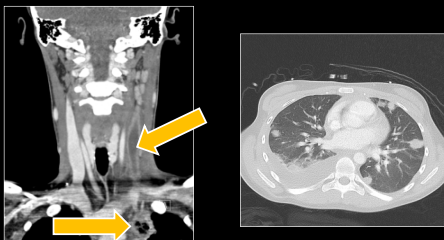
### Pharyngitis and Chest Pain

- 20 yo college student with sore throat, chills, GI upset. Despite oral amoxicillin, develops new onset of cough and pleuritic CP.

#### Lemierre syndrome

- Septic phlebitis of internal jugular vein
- Often follows Streptococcal pharyngitis or mononucleosis
- Classic cause is *Fusobacterium necrophorum*
- Anaerobic gram-negative rod
- Causes septic pulmonary emboli

### Lemierre Syndrome



### Extra-Tonsillar Infections: 1

- Epiglottitis
  - Fever, sore throat
  - Hoarseness, drooling, muffled voice, stridor
  - Examine with care!
  - Lateral neck x-ray: Thumb sign
  - H. influenzae* type B, pneumococcus



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### Extra-Tonsillar Infections: 2

- Vincent Angina
  - AKA Trench mouth
  - AKA acute necrotizing ulcerative gingivitis
  - Oropharyngeal pain, bad breath
  - Sloughing of gingiva
  - Mixed anaerobes



### Extra-Tonsillar Infections: 3

- Ludwig Angina
  - Bilateral cellulitis of floor of the mouth
  - Often starts with infected molar
  - Rapid spread with potential for airway obstruction
  - Fevers, chills, drooling, dysphagia, muffled voice, **woody induration of neck**
  - Mixed oral organisms (viridans strep, anaerobes)



### Case 3

- A 42-year-old, previously healthy woman is seen for a bad “sore throat” that began 4 days earlier while attending her sister’s wedding in southern Ukraine.
- She c/o malaise, odynophagia, and a low-grade fever. Today, she noted a choking sensation, prompting medical evaluation.

- T 100.2F; P 126; BP 118/74.  
HEENT: Submandibular swelling with gray exudate coating posterior pharynx.  
An S3 gallop is heard.



- CBC is normal.  
EKG shows: 1<sup>st</sup> degree AV nodal block, QT prolongation, and ST-T wave changes.

### Question 3

The most likely diagnosis is?

- A. Streptococcal pharyngitis
- B. Kawasaki disease
- C. Vincent angina
- D. Diphtheria
- E. Lemierre syndrome

### Buzz words and Visual Associations

Bull neck:



Grey pseudomembrane: extends onto palate or uvula; bleeds when scraped



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### Other clues

- Location, location, location
  - Almost unheard of in developed countries (vaccination)
  - Large outbreak in former Soviet Union 1990s
  - Still an issue (high mortality) in developing world
- Sore throat and myocarditis (~25%).
- Sore throat and neuropathies (~5%).
- Sore throat and cutaneous ulcer



### Noninfectious Mimics

- PFAPA (periodic fever, aphthous stomatitis, pharyngitis, and adenitis)
- Still's disease
- Lymphoma
- Kawasaki disease
- Behçet disease



THANK  
YOU!

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### Modified Centor Criteria

- C-"can't" cough +1
- E-exudate +1
- N-neck adenopathy +1
- T-temperature elevation +1
- OR
  - Age less than 15 +1
  - Age >44 -1