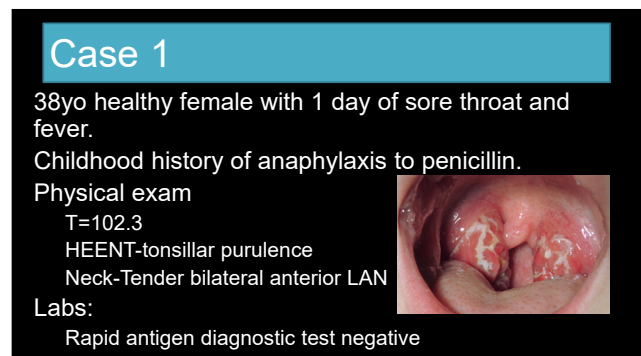
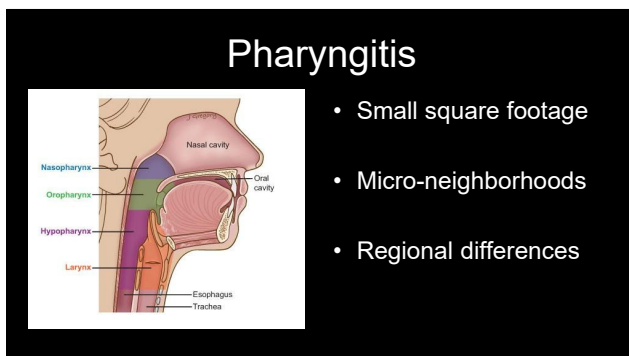
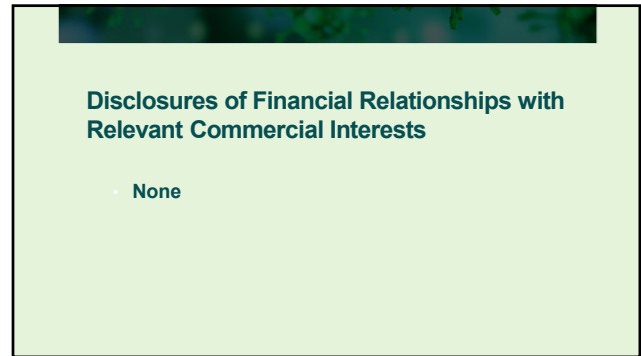
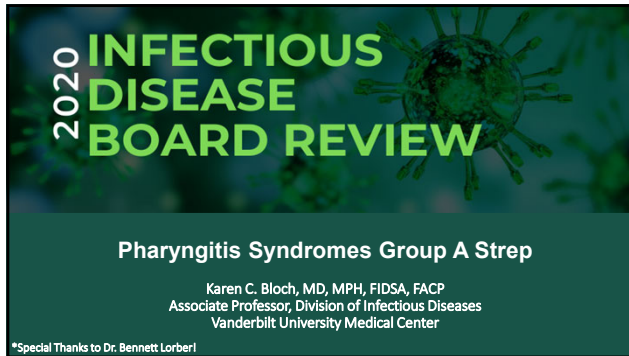


11 - Pharyngitis Syndromes and Group A Strep

Speaker: Karen C. Bloch, MD, MPH, FIDSA, FACP



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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 vs 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

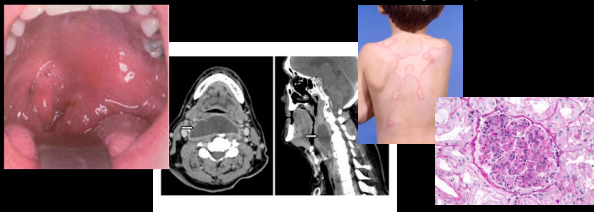
Persistence vs Recurrence

- Asymptomatic carriers (5% adults, $\geq 20\%$ peds)
- When to screen:
 - Community outbreaks of strep (eg, dorm, barracks)
 - Family or personal rheumatic fever
 - To avoid tonsillectomy
- Eradication regimens:
 - PCN or amoxicillin monotherapy high rate of failure
 - amoxicillin-clavulanate, clindamycin or PCN plus rifampin (4 days)



Secondary Complications

- Infectious complications
- Immunologic complications



Pharyngitis and....



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Pharyngitis & Rash

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



Arcanobacterium haemolyticum

Arcanobacterium haemolyticum

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



Pharyngitis & Rash

- Acute HIV
- Secondary syphilis

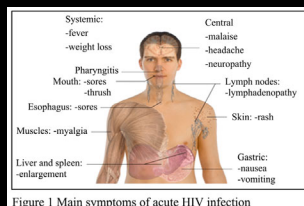


Figure 1 Main symptoms of acute HIV infection



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
- Oral 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)

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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.



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



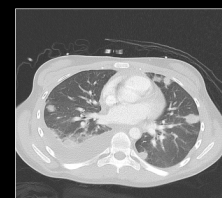
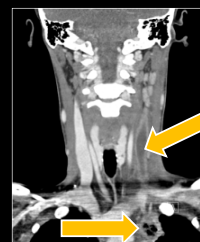
Pharyngitis and Chest Pain

- 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



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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



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 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: 1st 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

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Buzz words and Visual Associations

Bull neck:



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



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