



Airway Emergencies in the Outpatient Clinic

Pediatric Emergency Medicine Update

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I do not plan to discuss any product which is still investigational or not labeled for the use under discussion.

Clinical examples are for illustrative purposes only, and no names, ages, other demographic data, or specific diagnoses of actual patients are contained in this lecture.



Objectives

- Brief review of pediatric physiology
- Discuss specific examples of airway emergencies presenting in the outpatient setting.
- Review treatments for each of these processes

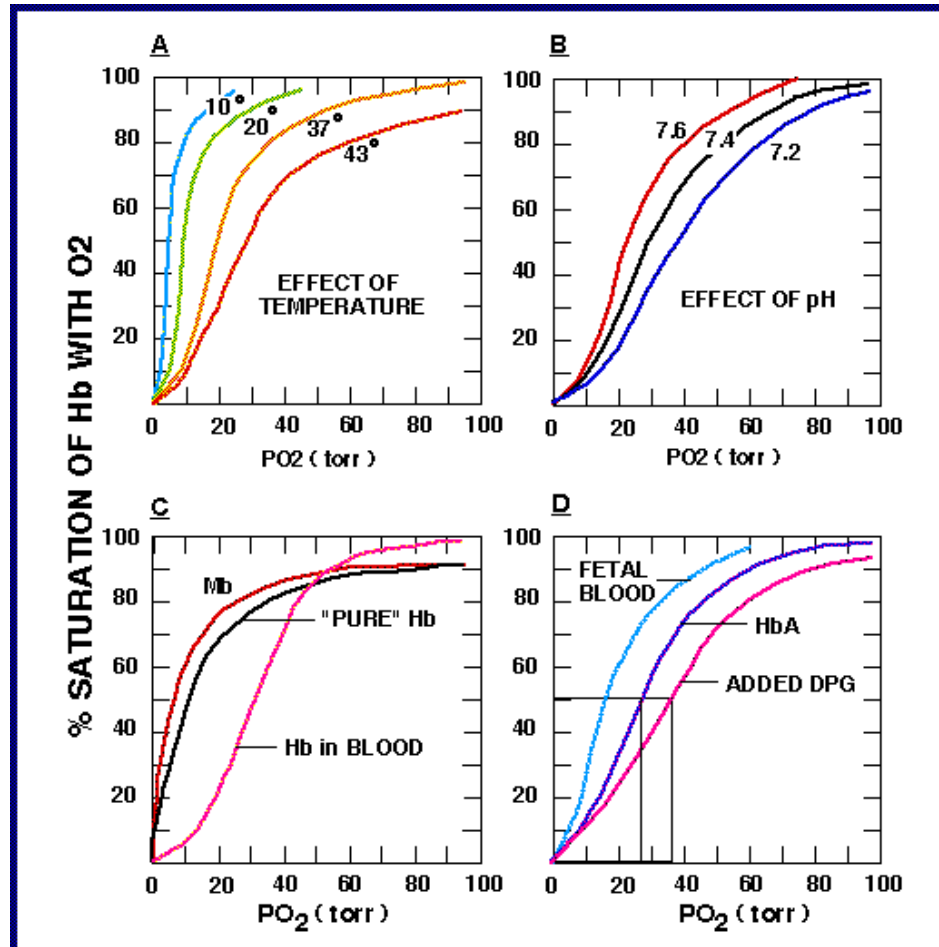


Topics for a Different Day...

- Rapid sequence intubation (RSI)
- Pediatric airway management
- Orotracheal, nasotracheal, and retrograde intubations
- Extracorporeal membrane oxygenation (ECMO)
- Asthma, bronchiolitis, community-acquired pneumonia, carbon monoxide poisoning...



Pediatric Physiology



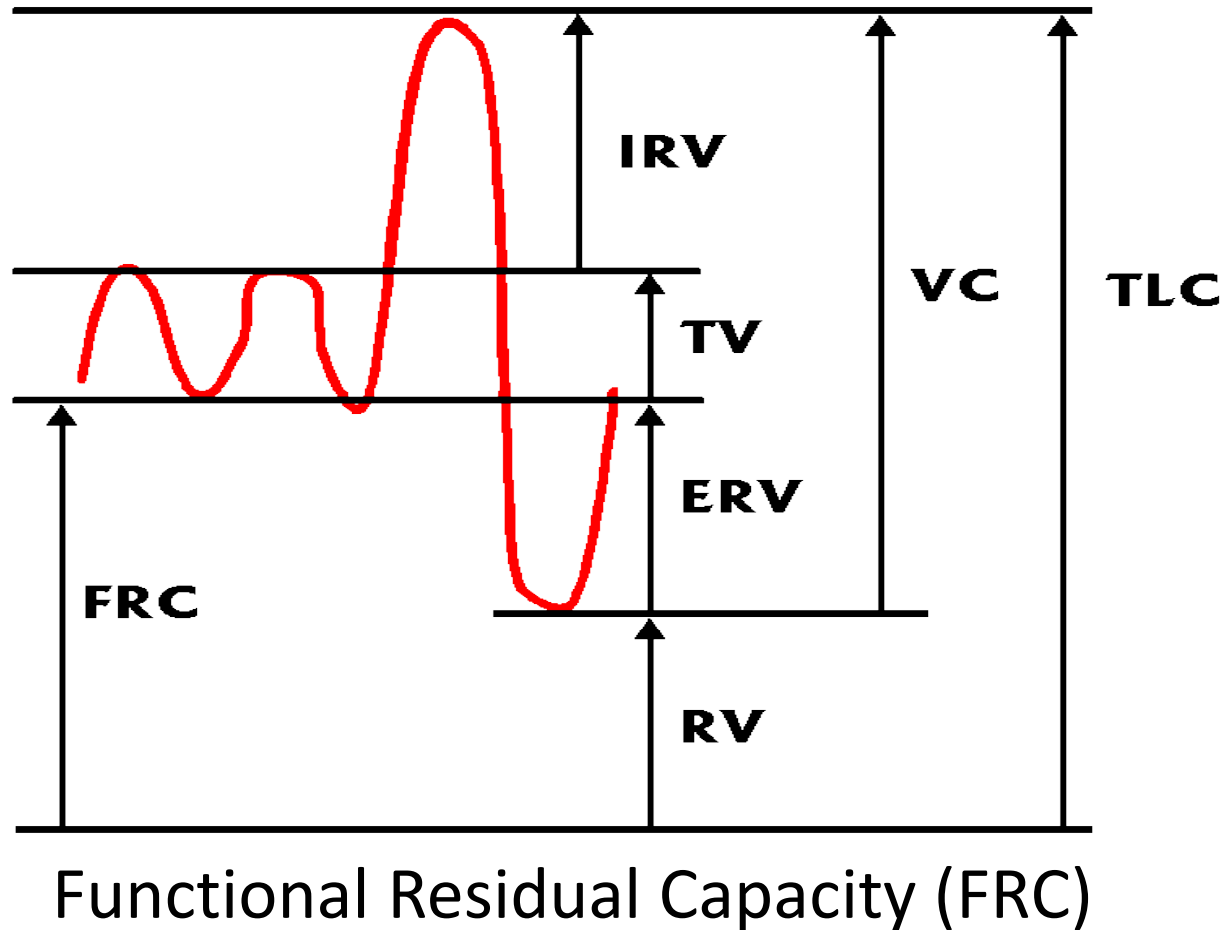


Decreased Physiologic Reserve

1. Oxygen consumption
2. Functional residual capacity



Pediatric Physiology





Clinical Vignettes

3 y.o. female with rhinorrhea for 5 days. Nasal discharge is unilateral and opaque, although not malodorous.

PMH: None

Meds: None.

VSS.

HEENT: NCAT, PERRL, no conj. Injection, TMs clear...



Nasal Foreign Body





Nasal Foreign Body

- Usually in infants and young children
- Right-sided > left-sided
- Organic or inorganic
- Lack of history
- Variable clinical presentation



Foreign Body Removal

- Curette
- Alligator forceps
- Suction
- Balloon catheter



Foreign Body Complications

- Infection
- Direct tissue damage
- Aspiration



Treatment of Complications

- Amoxicillin
- Amoxicillin-clavulanate
- Clindamycin
- +/-Vancomycin



Foreign Body Pitfalls

- Multiple attempts
- Topical vasoconstrictors
- Addition of liquids in proximity of a button battery

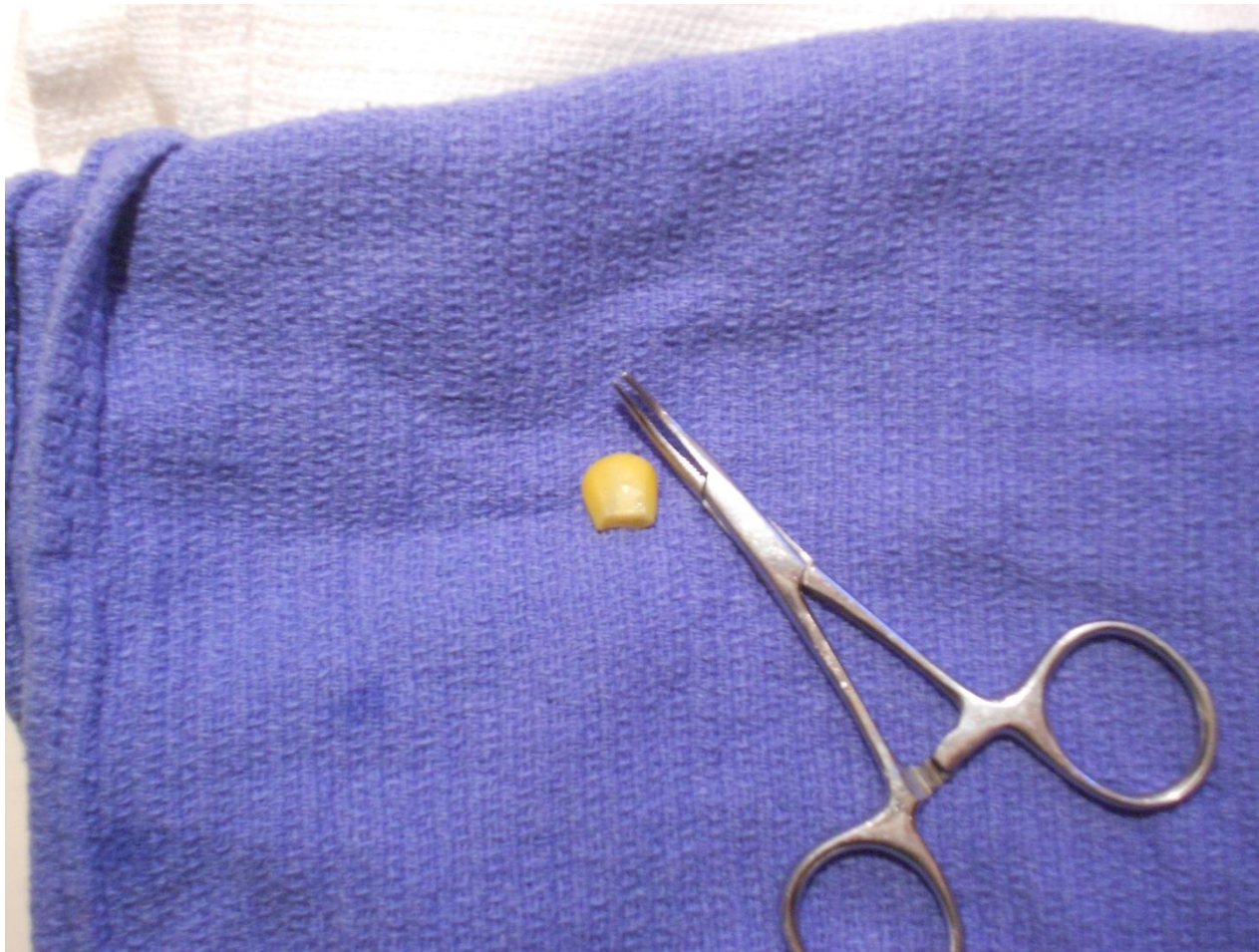


Case Progression...





Nasal Foreign Body



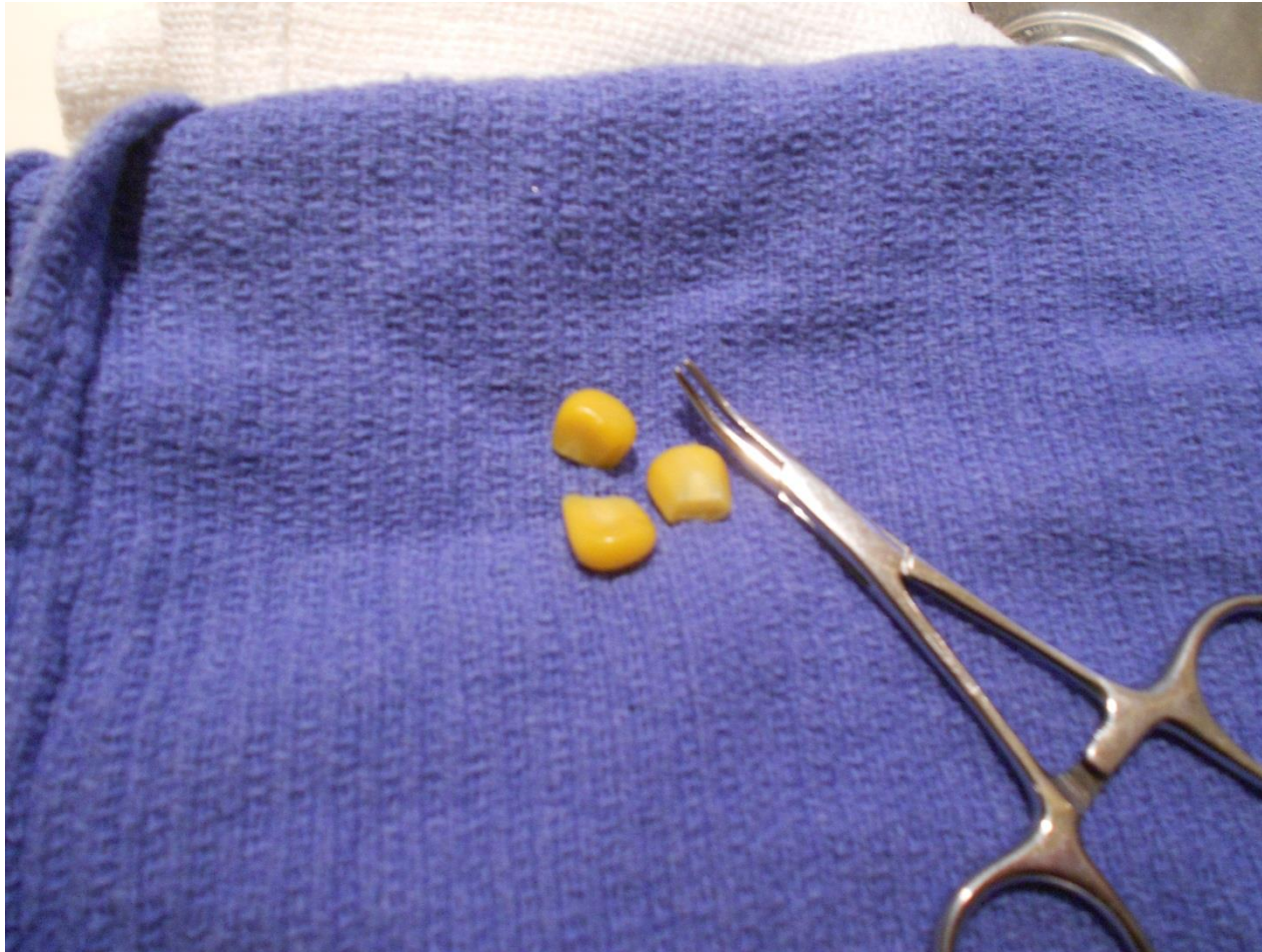


Nasal Foreign Body



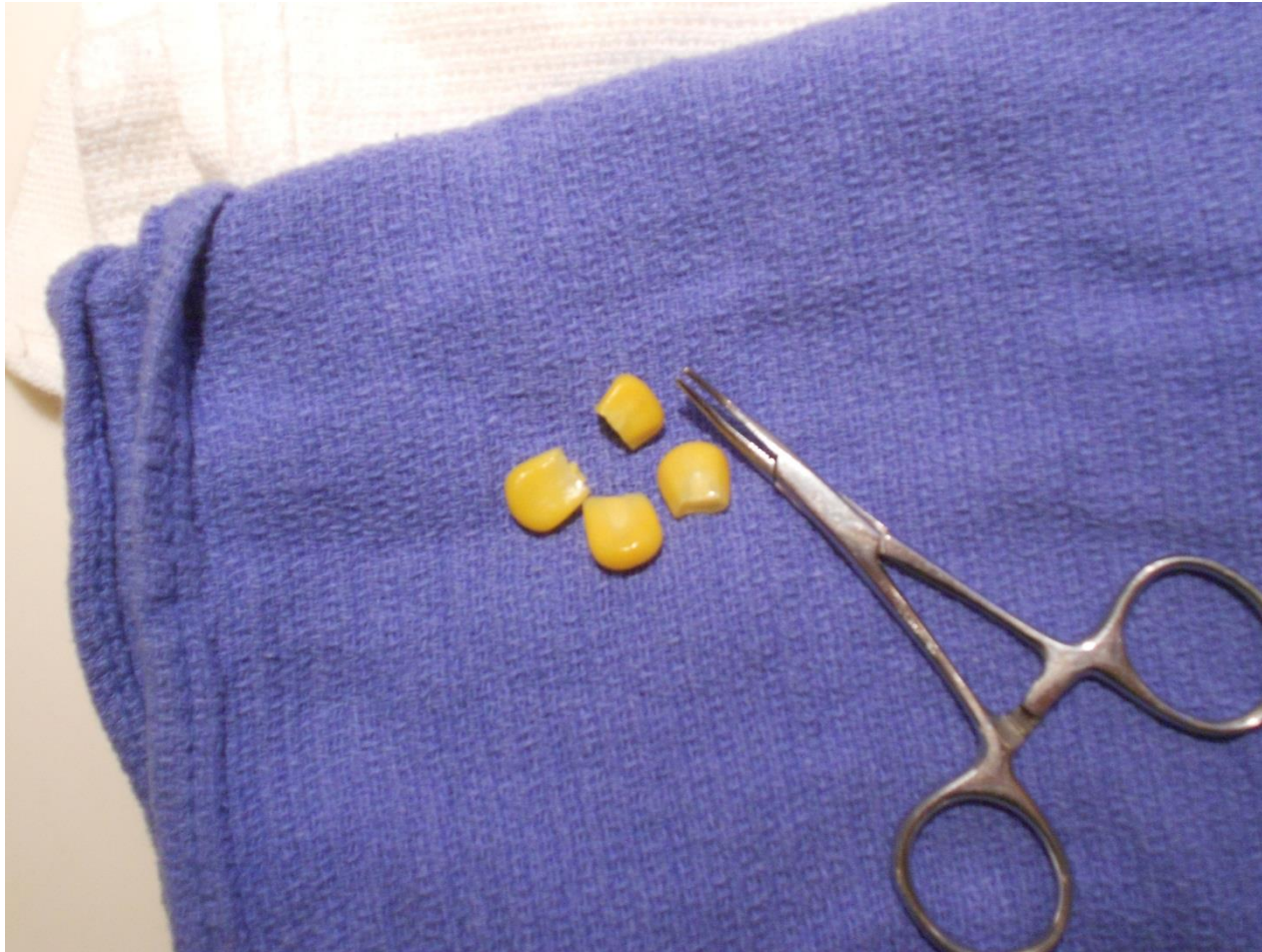


Nasal Foreign Body





Nasal Foreign Body





Clinical Vignette

- 5 y.o. male with sore throat for the past 7 days, associated with fever, neck pain.
- PMH: none
- Meds: acetaminophen
- Vitals: T 39.4°; HR 120; RR 18; BP 110/85; 98%
- Gen: ill-appearing, not in respiratory distress

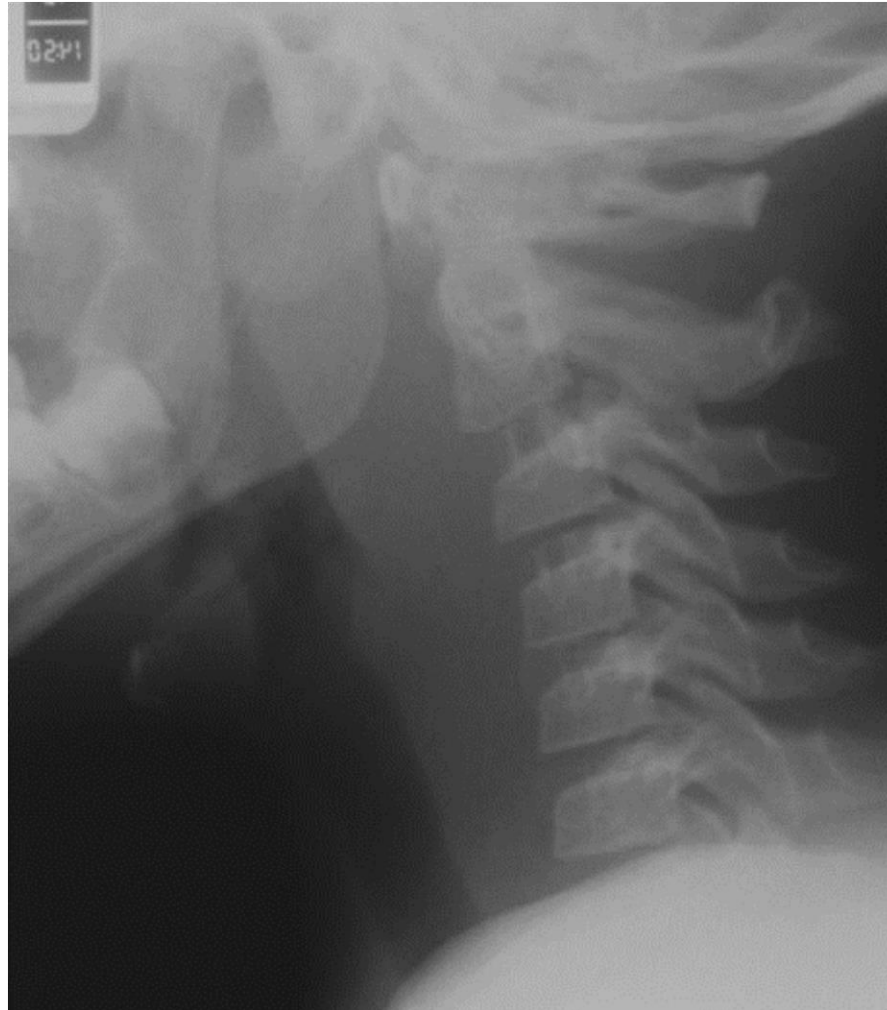


Clinical Vignette

- Vitals: Temp 39.4°; HR 120; RR 18; BP 110/85
- Gen: ill-appearing, not in respiratory distress
- HEENT: Trismus. Otherwise unremarkable.
- Neck: will flex but not extend. +Cervical LAD

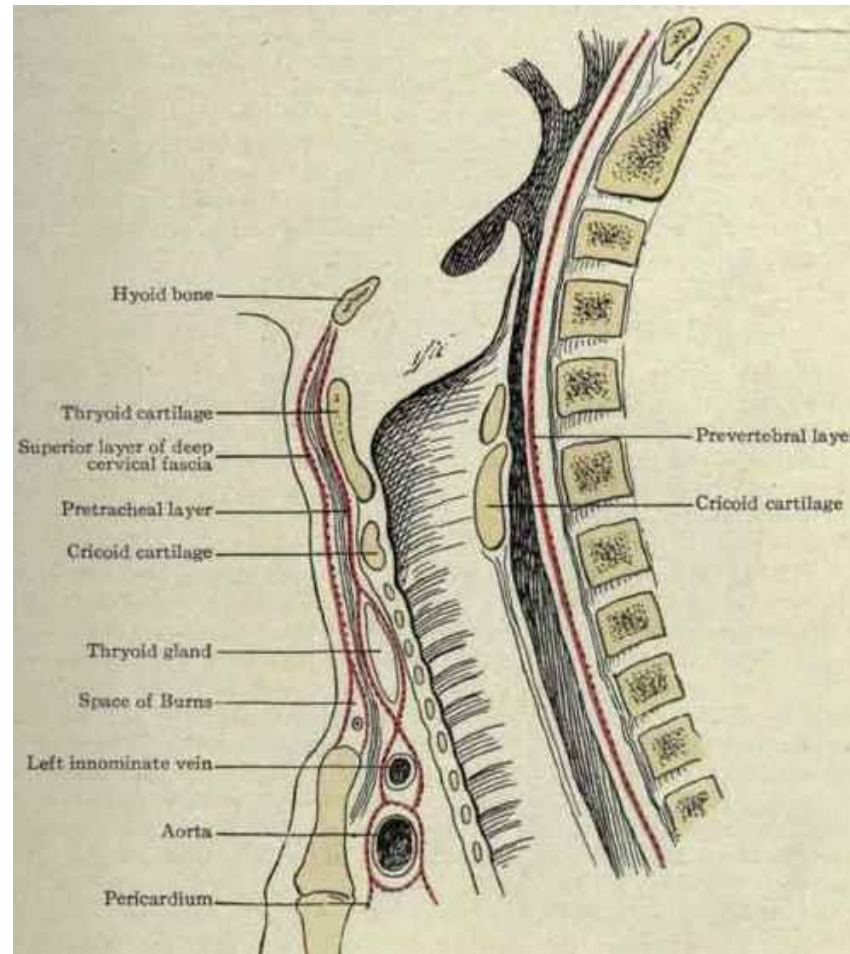


Retropharyngeal Abscess





Retropharyngeal Abscess





Retropharyngeal Abscess

Microbiology

Streptococcus pyogenes

Streptococcus viridans

Staphylococcus aureus

Bacteroides

Fusobacterium

Prevotella

Peptostreptococcus



Retropharyngeal Abscess

- Usually less than 6 years of age
- May be secondary to other local infection
- Trauma
- “Shotgunning” crack cocaine



Retropharyngeal Abscess

Classic Presentation

- Fever
- Trismus
- Drooling
- Neck swelling
- Neck pain with limitation of movement



Retropharyngeal Abscess

Treatment Controversy

- Medical
- Surgical
- Dual Therapy



Retropharyngeal Abscess

Complications

- Airway compromise
- Venous thrombosis
- Mediastinitis
- Aspiration pneumonia
- Sepsis



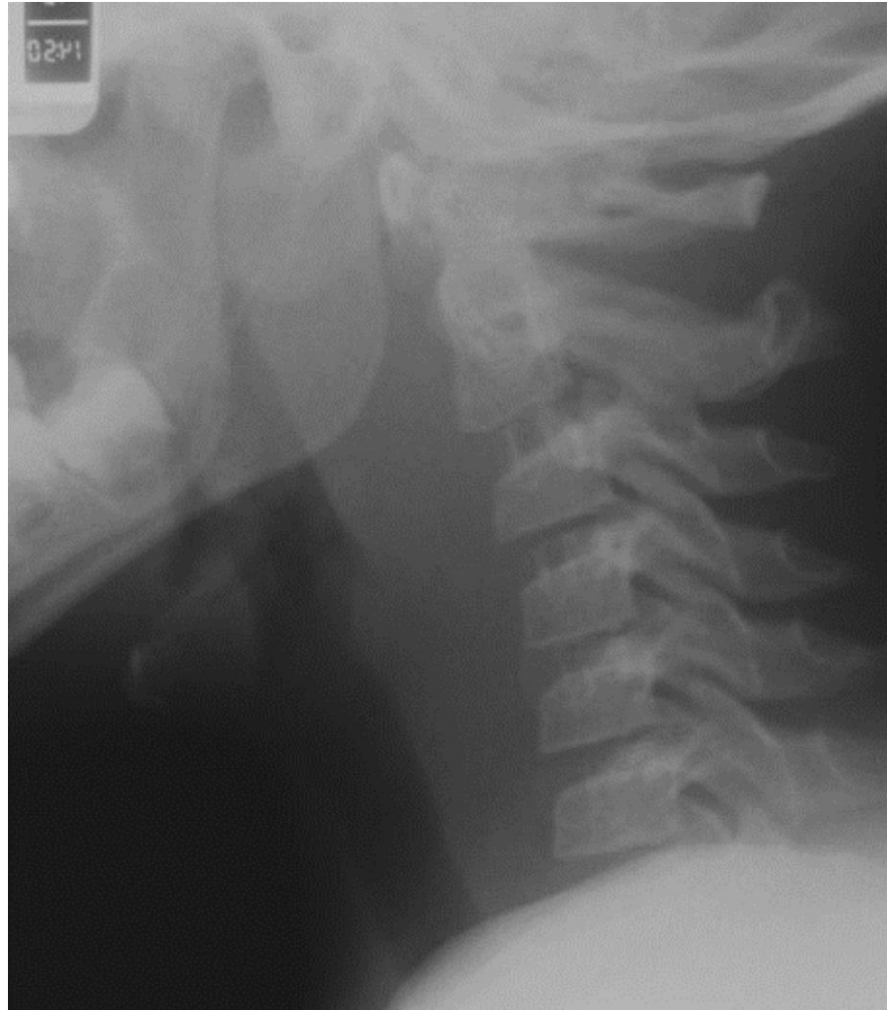
Retropharyngeal Abscess

Pitfalls

- Nonspecific prodrome
- Lack of visible bulge in the oropharynx
- Lack of dyspnea
- Rupture of abscess
- Recurrence



Case Progression





Case Vignette

13 y.o. male with sore throat for 10 days, increasing for the last 2 days. Associated with fever to 101°F, but without cough, coryza, dyspnea, neck stiffness, or altered mental status.

PMH: none

VSS

HEENT: NCAT, PERRL, EOMI, TMs clear, Nose clear...



Peritonsillar Abscess



<http://www.norwestent.com/services/tonsillitis.php>



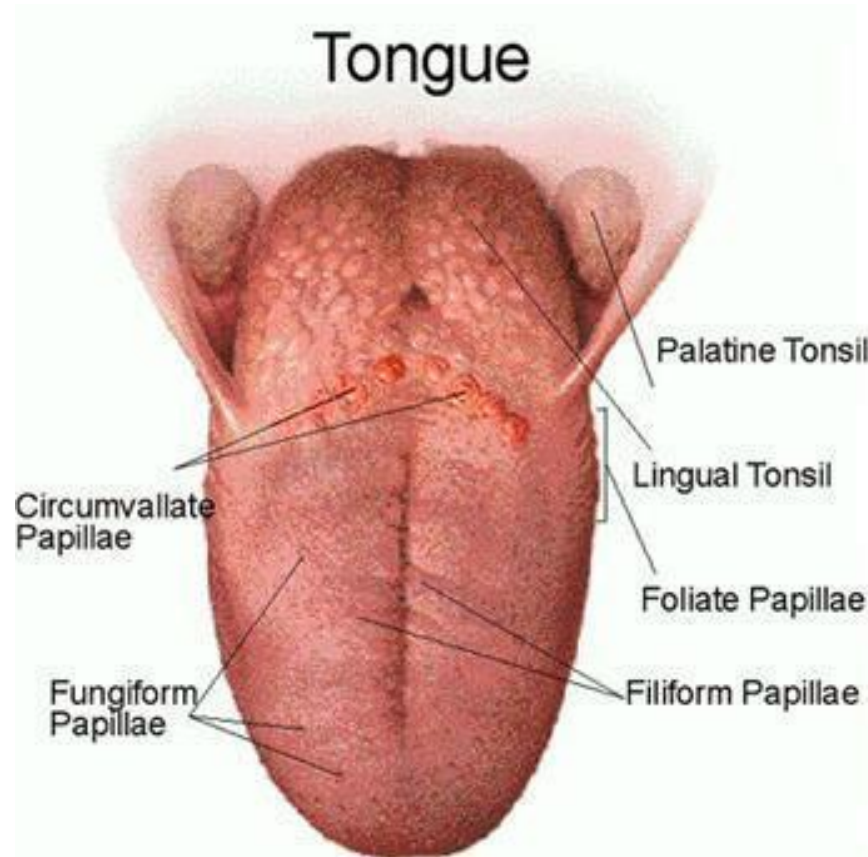
Peritonsillar Abscess

History

- 18th and 19th centuries
- Celsus
- Ebers Papyrus



Peritonsillar Abscess



http://doctorspiller.com/Oral_Anatomy.htm



Peritonsillar Abscess

Epidemiology

- Incidence
- Seasonality
- Peak age range
- Ethnicity/Gender



Peritonsillar Abscess

Microbiology

Streptococcus pyogenes

Staphylococcus aureus

Bacteroides

Fusobacterium

Prevotella

Peptostreptococcus

Veillonella



Peritonsillar Abscess

Clinical Presentation

- +/- antecedent pharyngitis
- Fever
- Odynophagia
- Voice changes
- Difficulty with secretions/drooling



Peritonsillar Abscess

Clinical Presentation

- Trismus
- Tonsillar asymmetry
- Uvular deviation
- Palpable fluctuance and tenderness*



Peritonsillar Abscess

Treatment

- Broad-spectrum antibiotics
- Needle aspiration
- Incision and drainage
- Steroids and analgesics

Peritonsillar Abscess



Complications

- Airway obstruction
- Hemorrhage
- Mediastinitis
- Thrombophlebitis
- Recurrence



Case Progression



<http://www.norwestent.com/services/tonsillitis.php>



Clinical Vignette

- 2½ y.o. female with acute onset of suspected “croup” with respiratory distress, associated with fever, and extreme anorexia. No cough.
- PMH: none but completely unvaccinated
- Vitals: T 39.6°; HR 186; RR 46; BP 85/61; 91%
- Gen: Toxic, severe distress, TRIPOD position
- HEENT: NCAT, drooling.

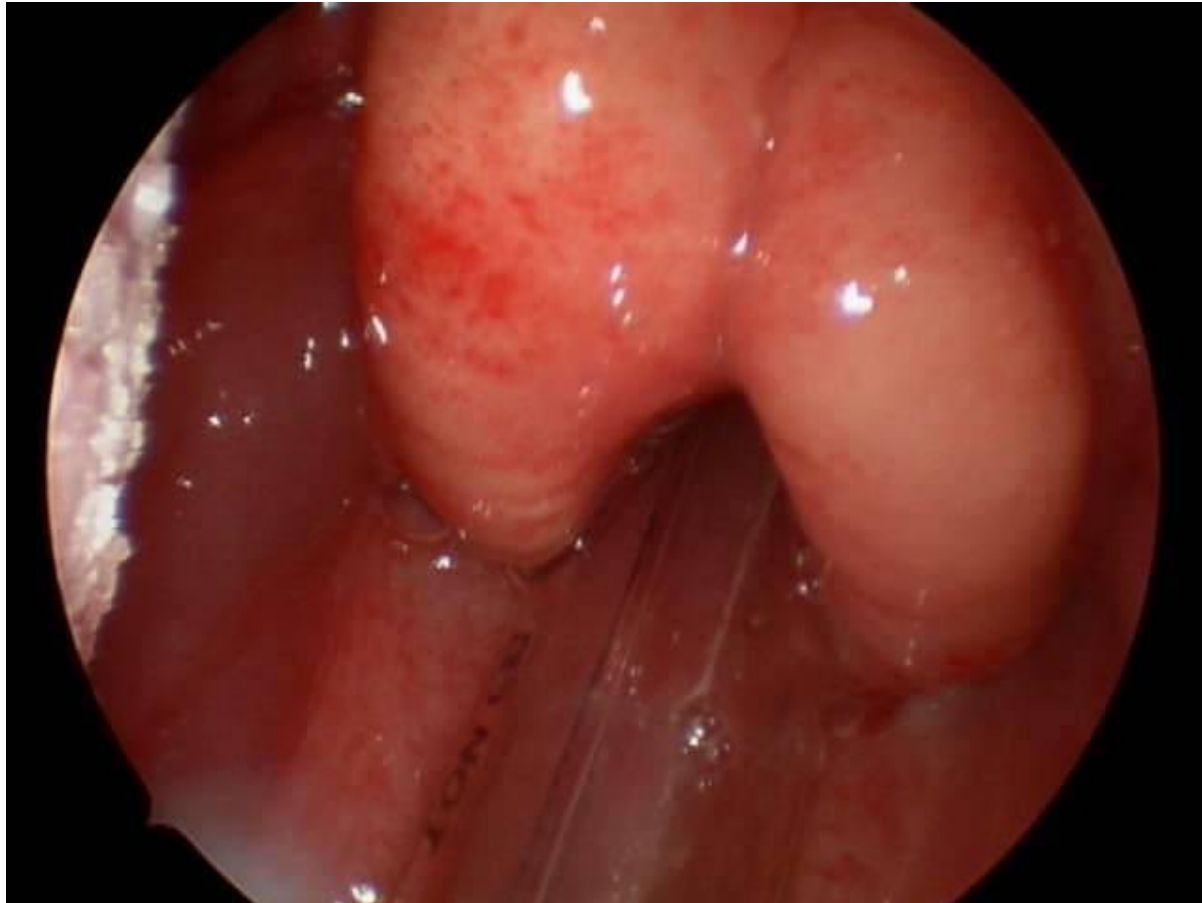


Clinical Vignette

- Vitals: T 39.6°; HR 186; RR 46; BP 85/61; 91%
- Gen: Toxic, severe distress, TRIPOD position
- HEENT: NCAT, drooling.
- Neck: extended
- Lungs: stridor, increased work of breathing
- EMS activated...



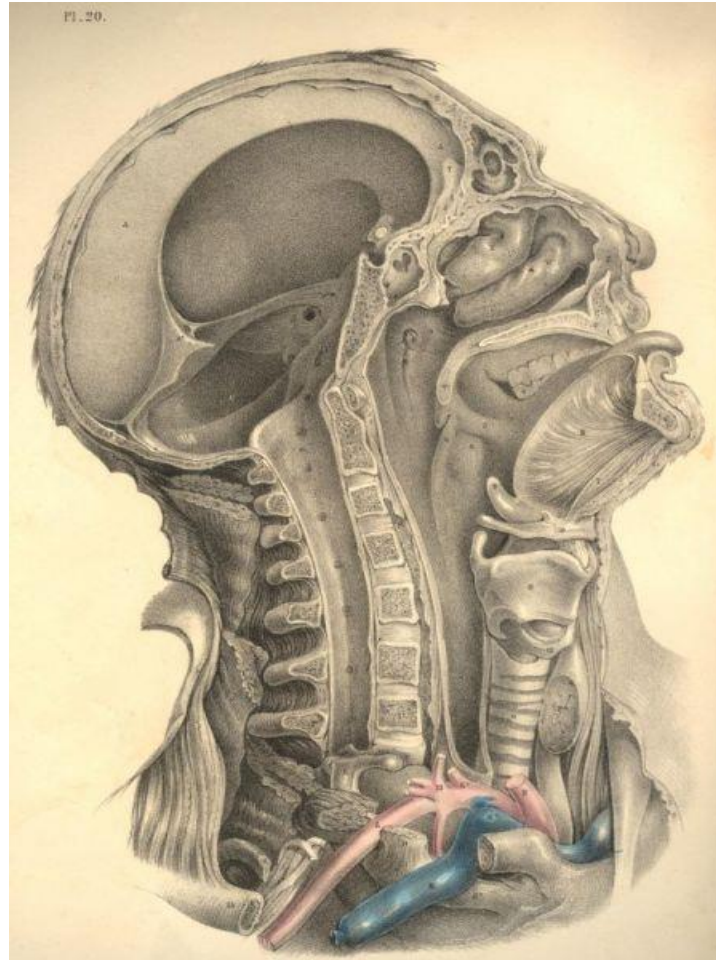
Epiglottitis



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Epiglottitis



<http://www.web-books.com/Classics/ON/B0/B575/11MB575.html>



Epiglottitis

Microbiology

- *Haemophilus influenzae* (type B)
- *Streptococcus pneumoniae*
- *Staphylococcus aureus*
- *Moraxella catarrhalis*
- *Candida*

Epiglottitis



Noninfectious Etiologies

- Chemical burns
- Thermal burns
- Physical trauma
- Graft-versus-host disease



Epiglottitis

Clinical Presentation

- Sudden onset
- Fever
- Stridor and Dyspnea
- Drooling



Epiglottitis

Clinical Presentation

- Odynophagia
- “Tripodding”
- Anxiety
- Cyanosis



Epiglottitis

Pediatric Clinical Presentation

- Rapid progression
- Increased severity of respiratory distress
- Lack of oropharyngeal findings
- Extreme tenderness over the hyoid



Epiglottitis

Management

- Preparations for definitive airway
- Lateral neck film
- Defer noxious stimuli if tenuous respiratory status
- IV abx



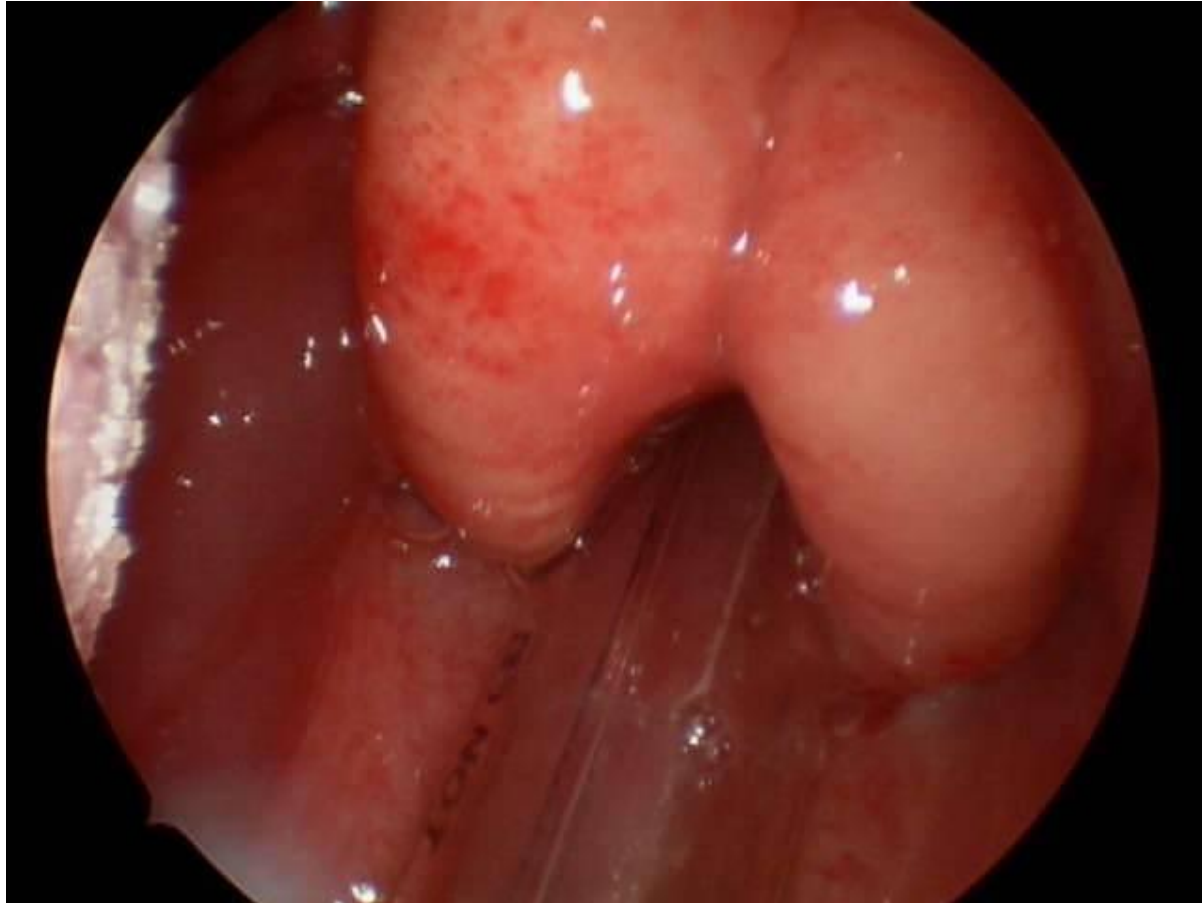
Epiglottitis

Complications

- Pneumonia
- Lymphadenitis
- Epiglottic abscess



Case Progression



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Summary

- Pediatric physiology
- Nasal foreign bodies
- Retropharyngeal abscess
- Peritonsillar abscess
- Epiglottitis



Thank you!



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