15-month-old female with fever

Keith Murphy, MD
Med/Peds
(originally for HCMC December 2011)

In the ED

CC: 15-month-old female presenting with fever

- Fevers to 103F x 2 days
- Improved with Tylenol, but requiring it q4hrs
- Has cough, rhinorrhea, nasal congestion
- Doesn't want to eat solids, drinking some (mostly juice)
- Mom noticed today that her neck seemed swollen and tender
- No vomiting, no diarrhea, no rash

- Daycare
- Immunizations UTD
- No PMH

In the ED

Temp 39.6 C, HR 147, RR 24, Sat 98% RA, Wt 10.3 kg
Gen: Alert, crying, ill appearing
HEENT: NCAT, TMs appear normal. Nose with crusted yellow drainage. OP without lesions. MMM, tonsils mildly erythematous but without exudate.
Neck: Supple, full ROM, no obvious swelling over neck although there is a prominent fat roll
CV: RRR no m/r/g, Cap refill < 2 sec, good peripheral pulses
Pulm: Crying, no retractions or wheezing
Abd: Soft, NT/ND. +BS
Skin: No rash
Ext: WWP, MAEE
Lymph: No LAD

What is your differential diagnosis?

What labs/imaging are you considering?

Should this child be observed longer in ED, admitted to Pediatrics service, or discharged to home?

In the ED

DDx includes: viral URI, pneumonia, UTI, influenza, RSV.

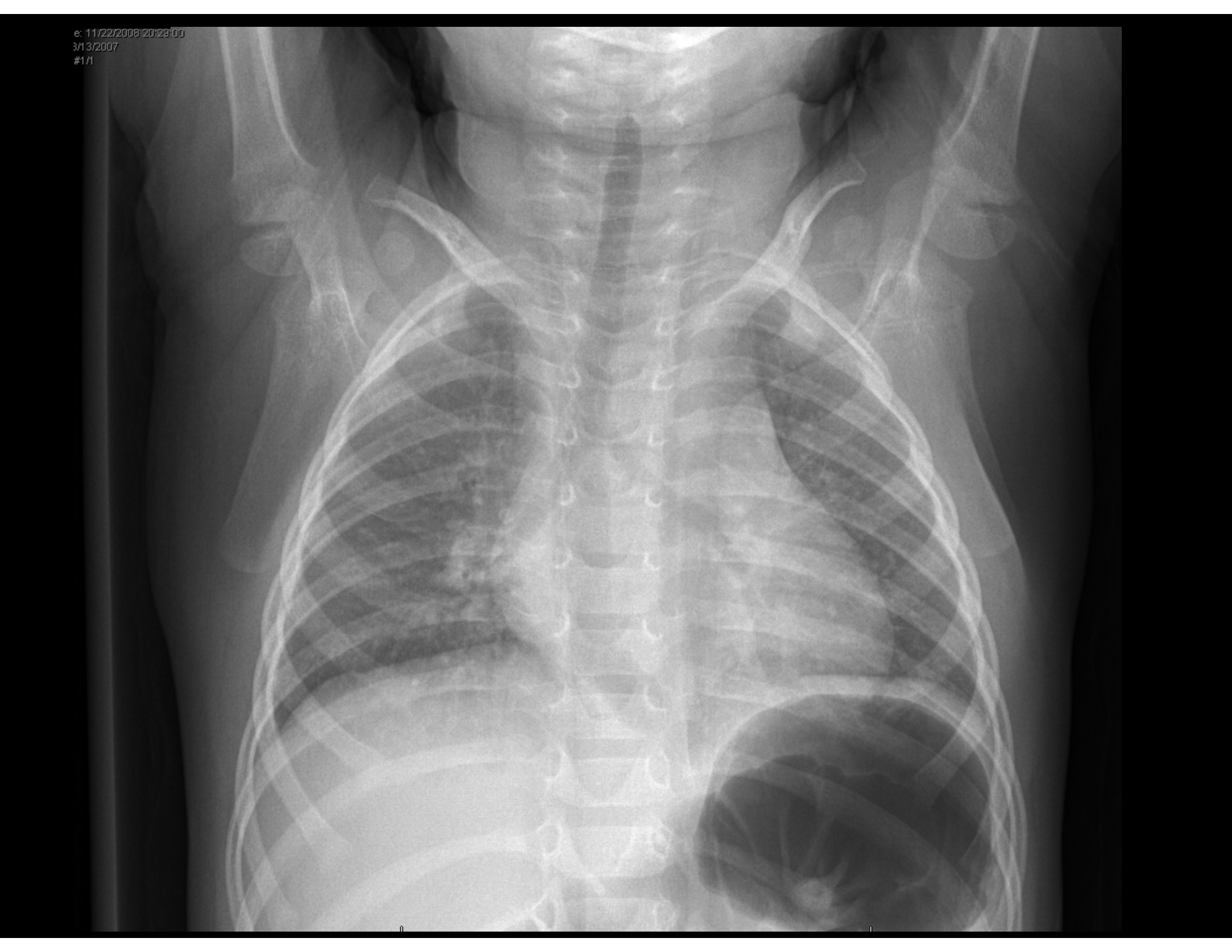
Plan:

- Ua/Uc
- Rapid viral panel
- CXR
- NS IV bolus 20 mL/kg x2

Color	ORANGE
Appearance	CLOUDY
Urine Glucose	NEGATIVE
Bili UA	NEGATIVE
Ketones	**15 (A)**
Specific Gravity	**>=1.030 (A)**
Blood Ur	TRACE
PH Urine	5.5
Protein Ur	**>=300 (A)**
Urobilinogen	1.0
Nitrite Ur	**POSITIVE (A)**
Leuk Est	NEGATIVE
Microscopic	MICRO PERFORMED
WBC Ur	0 - 5
RBC Ur	0 - 5
SQ EPITH	1+
Mucus	1+
Amorphous	3+
Gran Cast	0 - 5

Urine culture pending

Influenza negative
RSV negative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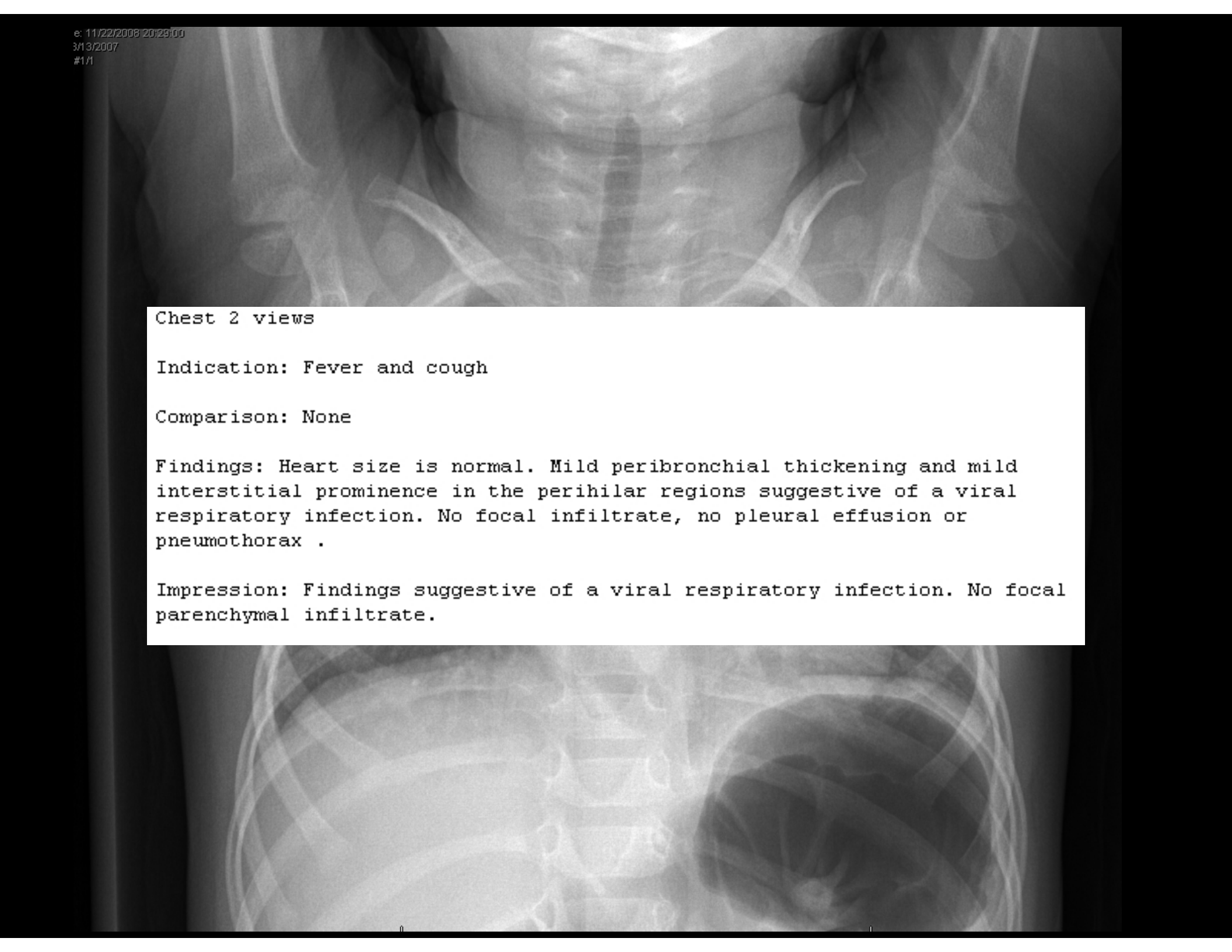


Chest 2 views

Indication: Fever and cough

Comparison: None

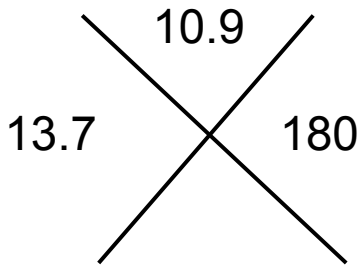
Findings: Heart size is normal. Mild peribronchial thickening and mild interstitial prominence in the perihilar regions suggestive of a viral respiratory infection. No focal infiltrate, no pleural effusion or pneumothorax .

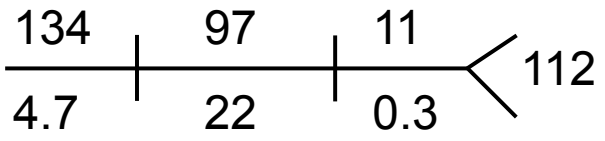
Impression: Findings suggestive of a viral respiratory infection. No focal parenchymal infiltrate.

Admit to Pediatrics

Appears similar on the floor
Significant differences noted on exam:

- 37.3 C, HR 134, RR 26, Sat 99% RA
- Eyes: No tears with crying
- Mouth: Mucous membranes dry
- Neck: Anterior midline neck mass, with prominent neck swelling. Left-sided cervical lymphadenopathy





Admit to Pediatrics

UTI
- Start cefotaxime
- UCx pending

Viral URI
- Monitor

Anterior neck mass
DDx: Thyromegaly, adenopathy, soft tissue swelling
- Monitor

Dehydration
- Continue IVF

Has your differential diagnosis changed?

What is concerning to you?

What labs/imaging are you considering?

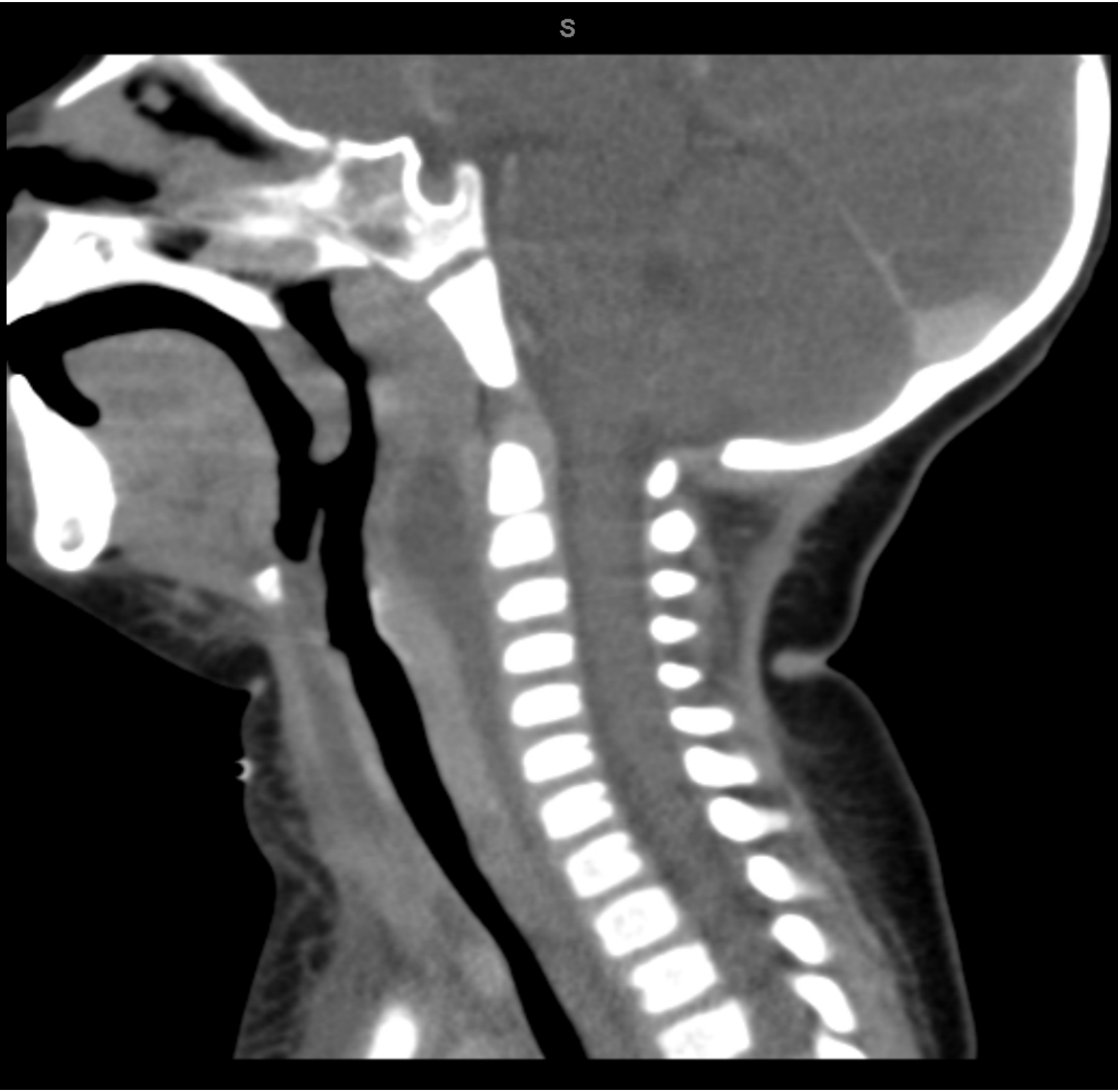
How would your management differ?

First thing in the morning...

12 hours since presenting to ED, 6 hours since arriving on Pediatric ward.

- Pediatric team visits patient prior to rounds
- She has developed nasal flaring, stridor, tachypnea and tachycardia.
- Diffuse neck swelling noted, no masses
- Epi neb x1, with some improvement

- Transfer to PICU
- CT neck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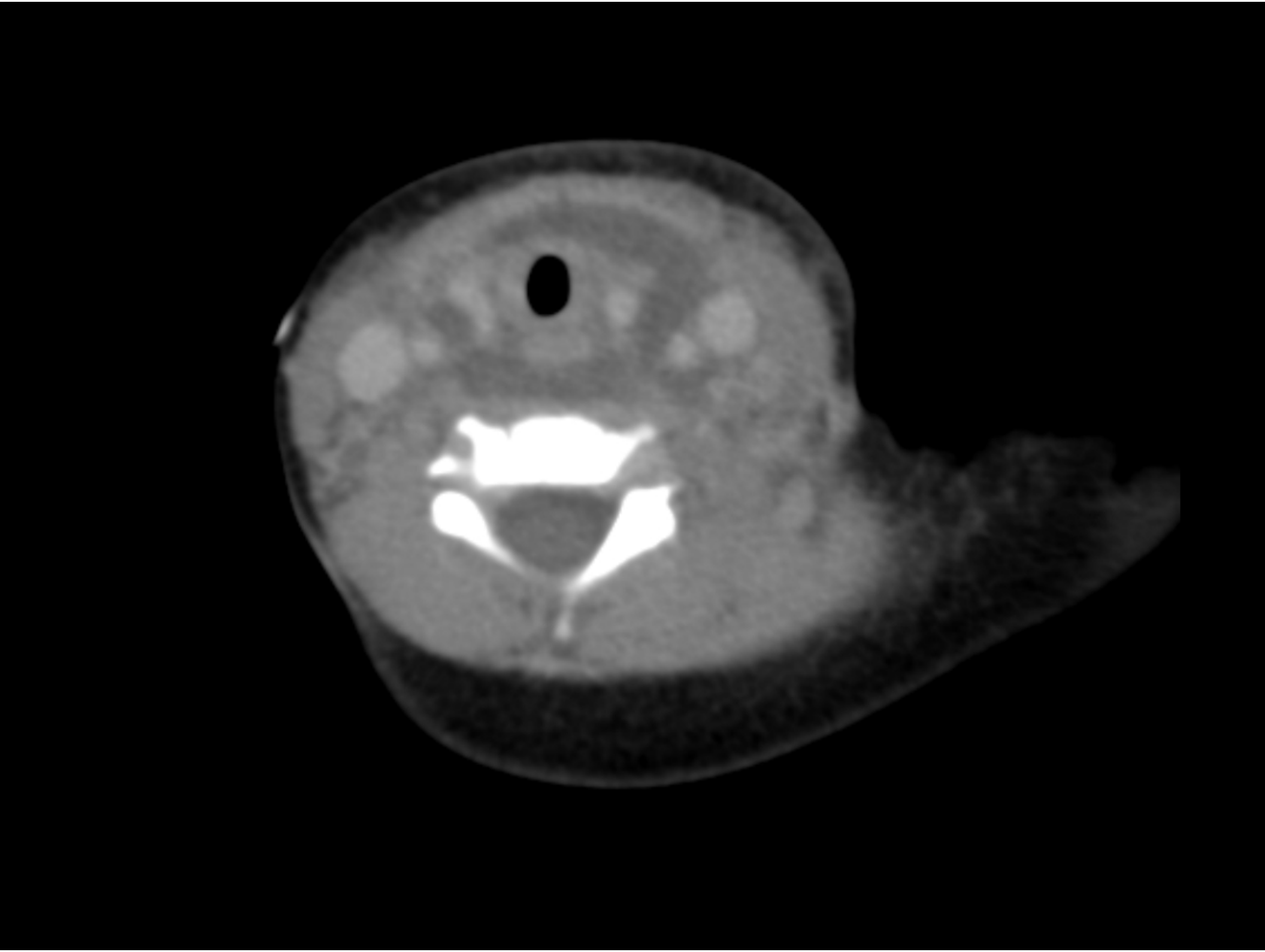
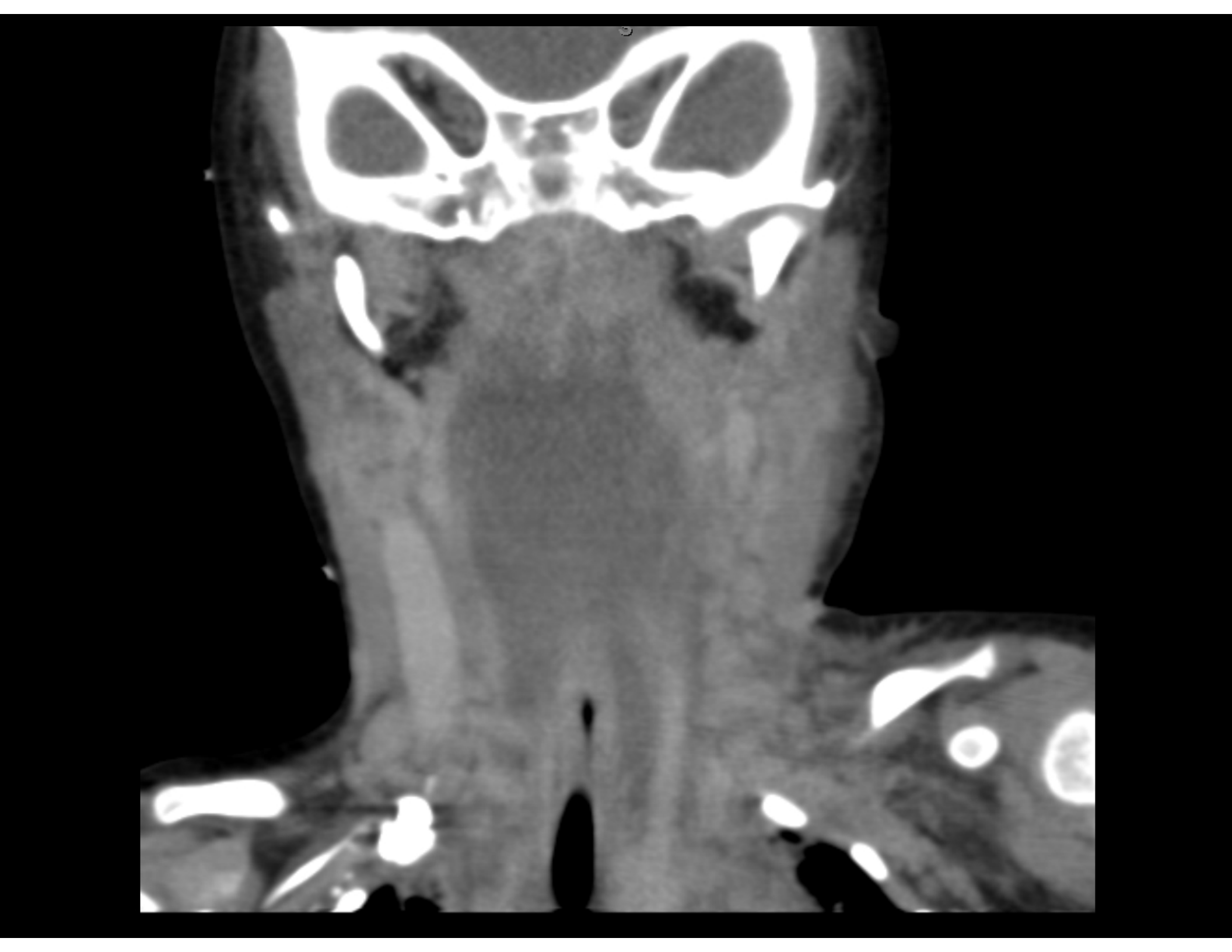




Surgical culture

Final Report
Verified:11/26/2008 11:40
Moderate Staphylococcus aureus isolated.
Few Alpha hemolytic Streptococcus not Enterococcus isolated.
** SUSCEPTIBILITY RESULTS **

	Staphylococcus aureus	
	VDIL	VINT
Clindamycin	<=0.25	S
Cefazolin	<=4	S
Levofloxacin	<=0.12	S
Oxacillin	0.5	S
Trimethoprim/Sulfamethoxazole		S
Tetracycline	<=1	S
Vancomycin	<=1	S

S=Susceptible, I=Intermediate, R=Resistant, N/A=Not Applicable

Brief hospital course

- Treated with vancomycin, meropenem initially
- Intubated, sedated
- Normal echocardiogram
- Required pressure support with norepinephrine
- Required transfer to another facility for mediastinal exploration

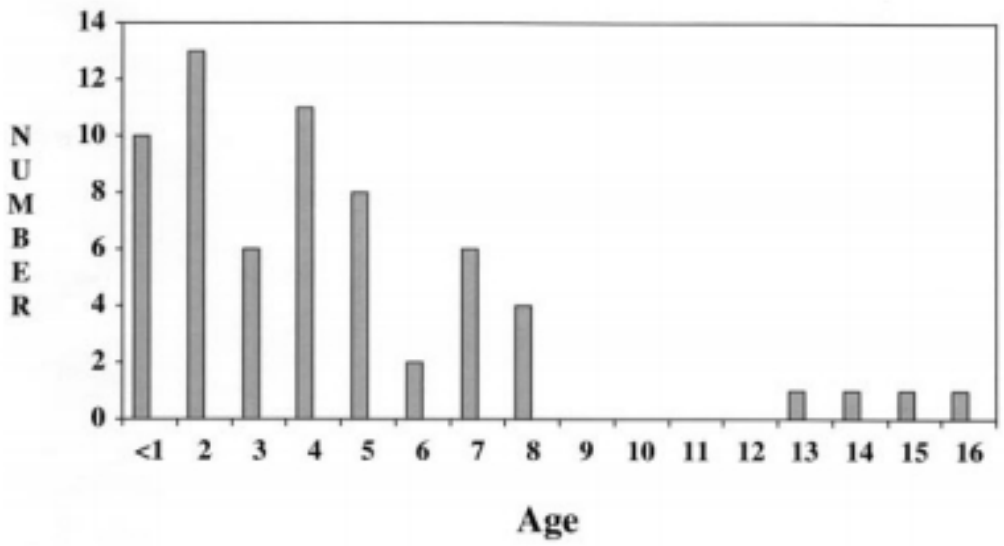
Retropharyngeal Abscess

Signs and Symptoms

- Dysphagia
- Odynophagia
- Drooling
- Unwilling to move the neck
- Change in vocal quality ("hot potato" voice)
- Respiratory distress
- Stridor
- Neck swelling
- Trismus (inability to open mouth)
- Chest pain (if mediastinal extension)

One study...

- Retrospective study
- 64 kids
- Non-traumatic causes

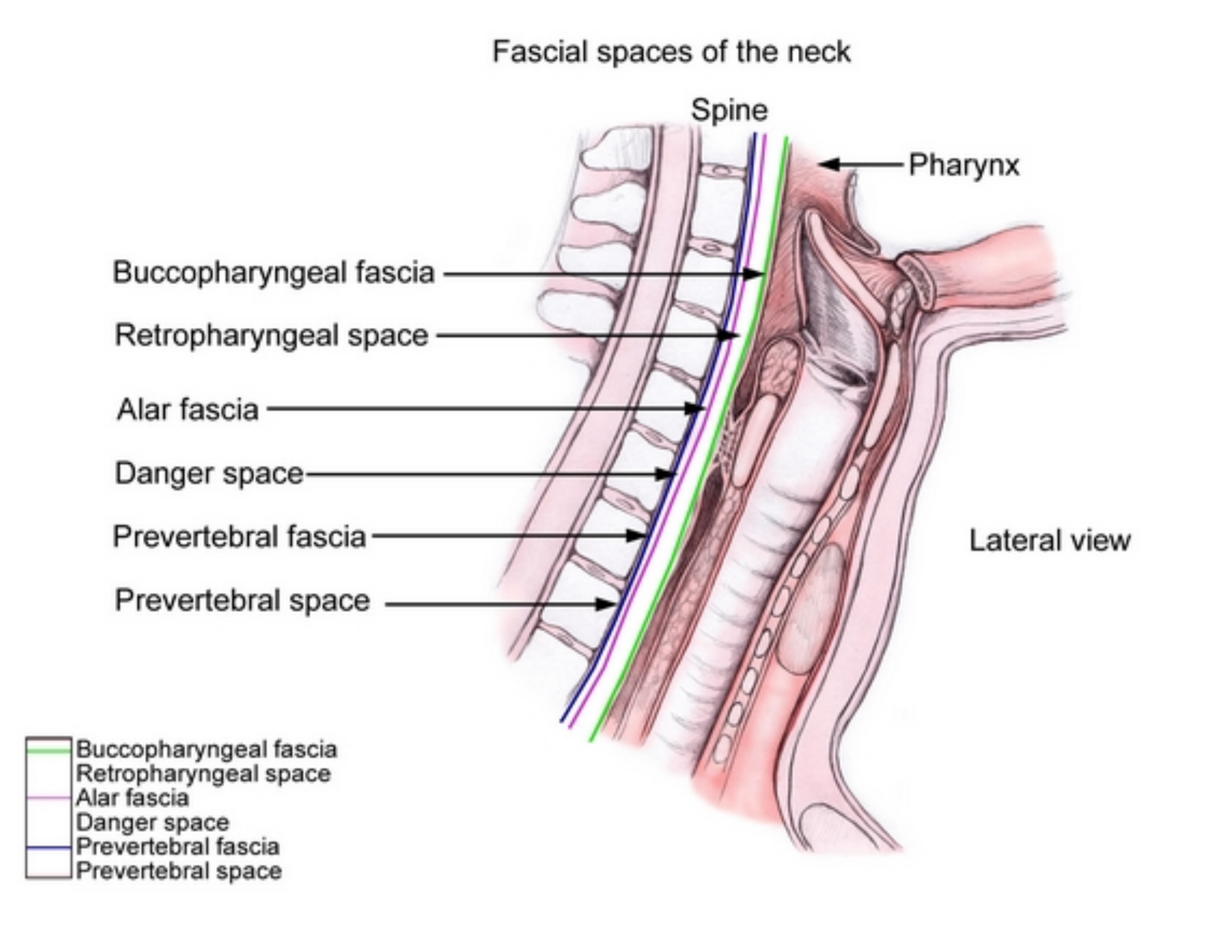


Chief Complaints

- Neck pain (38%)
- Fever (17%)
- Neck mass (16%)
- Respiratory distress or stridor (5%)

Pretty non-specific...

Craig, et al. Pediatrics 2003.


Fascial spaces of the neck
Spine
Pharynx
Buccopharyngeal fascia
Retropharyngeal space
Alar fascia
Danger space
Prevertebral fascia
Prevertebral space
Lateral view
Buccopharyngeal fascia
Retropharyngeal space
Alar fascia
Danger space
Prevertebral fascia
Prevertebral space

Etiology

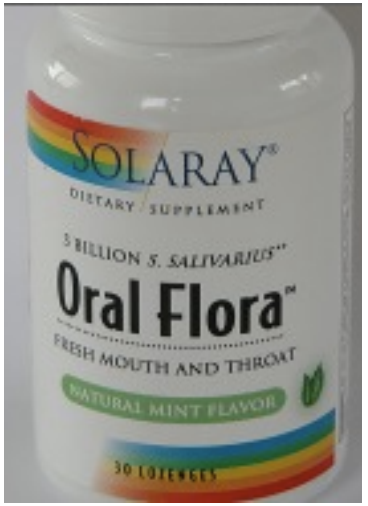
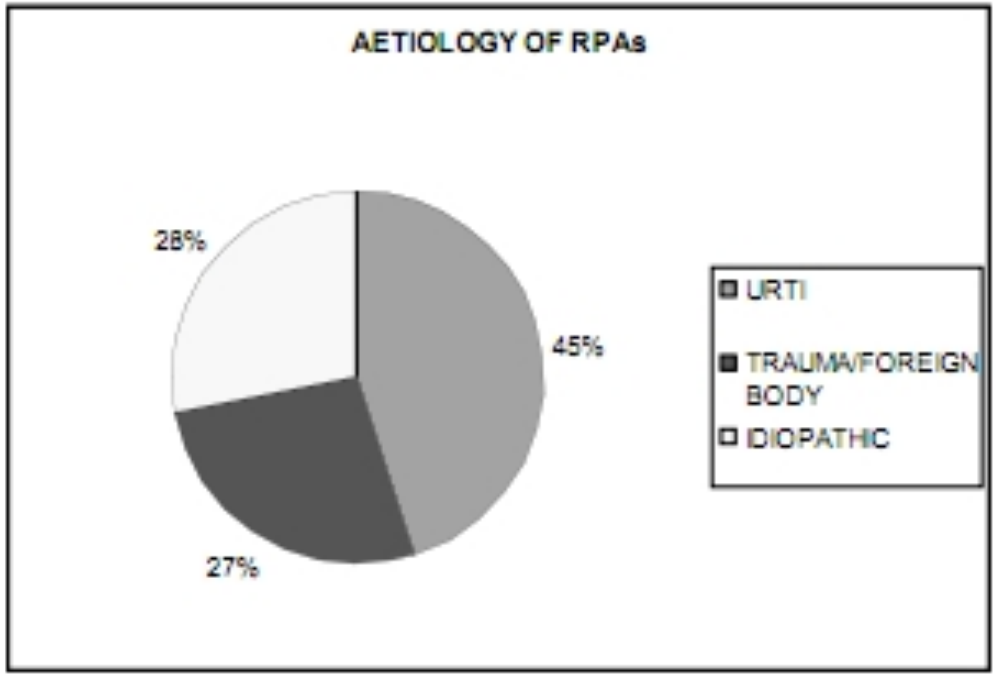


TABLE I

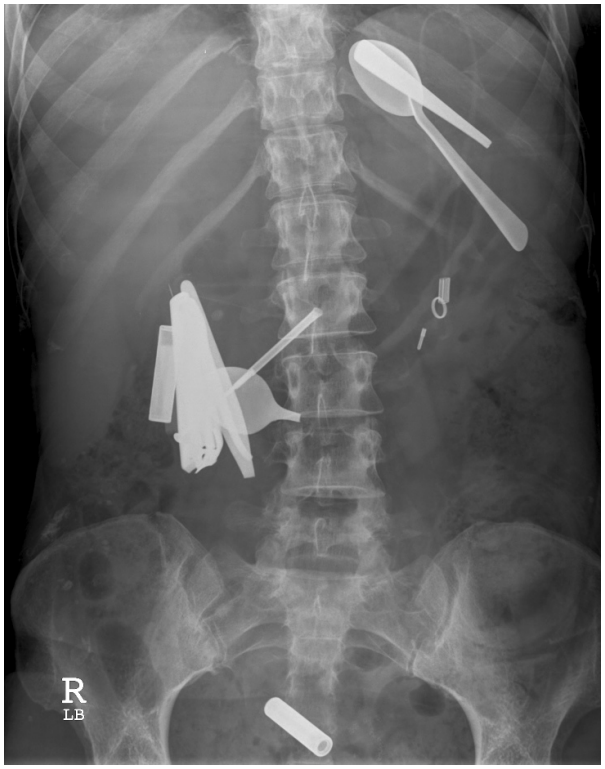
BACTERIOLOGY OF RETROPHARYNGEAL ABSCESSES

Organism	Approximate incidence (%)
Streptococcus viridans	39–41
Staphylococcus aureus	18–26
Staphylococcus epidermidis	22
β-haemolytic streptococci	8–18
Veillionella spp	14
Bacteroides melaninogenicus	17
Haemophilus parainfluenzae	14
Klebsiella pneumoniae	13
Prevotella spp	–
Escherichia coli	–
Morganella spp	–
Enterobacter spp	–
Mycobacterium tuberculosis	–
Mixed flora	46



Differential Diagnosis

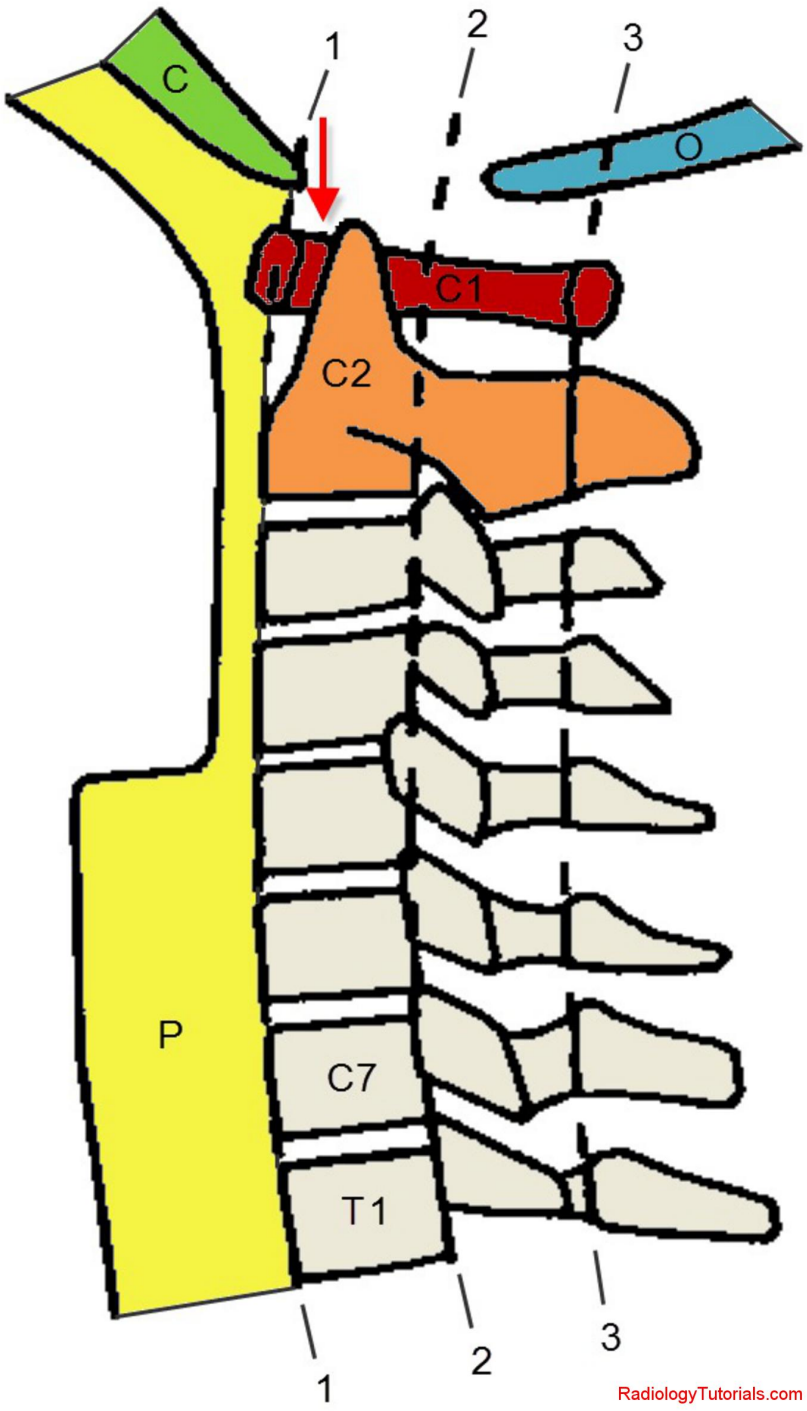
- Foreign body
- Epiglotitis
- Lymphadenopathy
- Kawasaki disease
- Infected cystic hygroma, thyroglossal duct cyst, etc
- Bartonella
- Tuberculosis



Diagnosis

Lateral neck x-ray
- at C2: < 7mm
- at C6: < 14mm (younger than 15)
  < 22mm (adults)
- Not very sensitive or specific
- 33% false negative rate

CT neck
- Modality of choice
- PPV 82%, NPV 100%



Treatment

"Very bad throat infection. I would stick with soft foods for a few days, like conifers, evergreens, even pulp if you can get some."

Medical

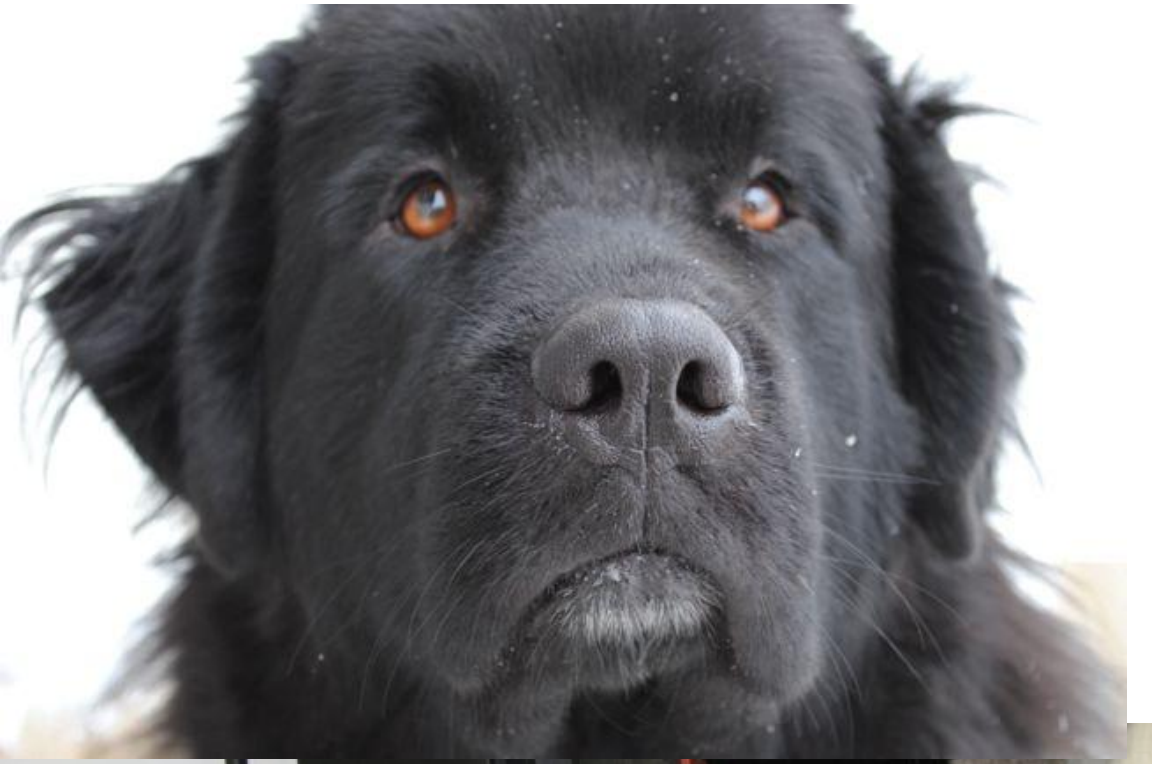
- Manage the airway
- Antimicrobial
  - Cover gram positives, anaerobes
  - clindamycin
  - amoxicillin +/- cephalosporin +/- metronidazole
  - ticarcillin/clav, ampicillin/sulbactam, piperacillin/tazo
  - imipenem, meropenem

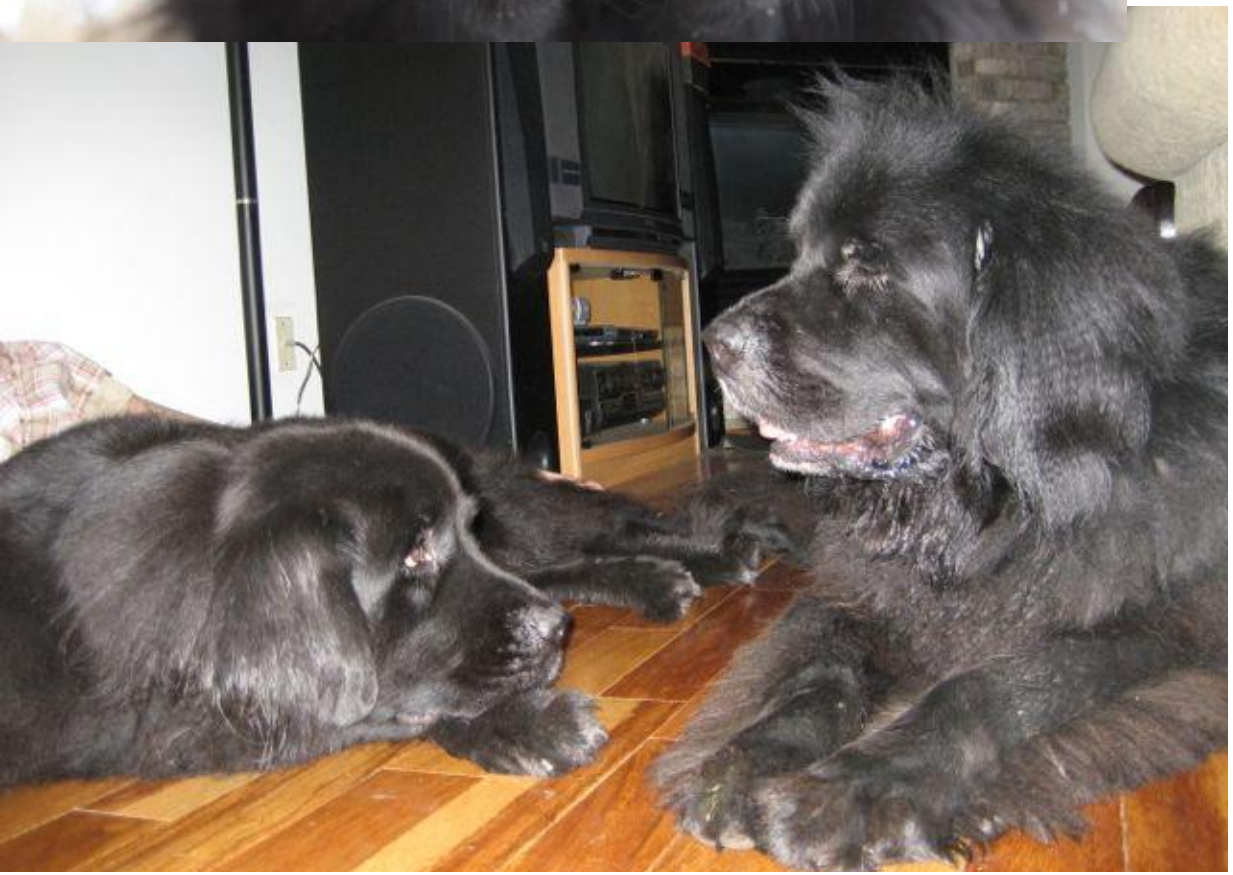
Surgical

- If/when to operate is controversial
- Trans-oral drainage
- May require thoracotomy

References

1. Acevedo, *et al*. Pediatric Retropharyngeal Abscesses. *Medscape*. http://emedicine.medscape.com/article/995851-overview
2. Philpott, *et al*. Paediatric retropharyngeal abscesses. *J Laryngol Otol*. 2004 Dec;118(12):919-26.
3. Craig, *et al*. Retropharyngeal Abscesses in Children: Clinical Presentation, Utility of Imaging, and Current Management. *Pediatrics*. 2003. June. Vol 111, No 6.
4. Fairbanks. Pocket Guide to Antimicrobial Therapy in Otolaryngology. 13th edition. American Academy of Otolaryngology. http://www.entnet.org/





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