

# RETROPHARYNGEAL ABSCESS

## Diagnosis and Management

Tiffany Tamse

PGY 1

12/07/12

# Question 1

A 1 year old boy presents to the ED with neck stiffness, subjective fevers, decreased PO intake and irritability. Mom says that he had a recent ear infection, but that he refused to take all of his antibiotics. He is UTD on all of his vaccines. VS: T 39.8, HR 135, RR 28, BP 105/60, O2 sat is 95%. On physical exam it is noted that the patient is drooling, his voice is muffled in character and he has a bulging of the posterior wall. Lateral x-ray of the neck is WNL.

What is the next best step?

- a. Palpate the bulge to see if it is ready to drain
- b. Lumbar Puncture
- c. Intubation
- d. CT of the neck with contrast

# Question 1

A 1 year old boy presents to the ED with neck stiffness, subjective fevers, decreased PO intake and irritability. Mom says that he had a recent ear infection, but that he refused to take all of his antibiotics. He is UTD on all of his vaccines. VS: T 39.8, HR 135, RR 28, BP 105/60, O2 sat is 95%. On physical exam it is noted that the patient is drooling, his voice is muffled in character and he has a bulging of the posterior wall. Lateral x-ray of the neck is WNL.

What is the next best step?

- a. Palpate the bulge to see if it is ready to drain
- b. Lumbar Puncture
- c. Intubation
- d. CT of the neck with contrast

# Correct Answer:

## D. CT of the neck with contrast

- When there is high suspicion of retropharyngeal abscess and x-ray findings are WNL a CT scan of the neck with contrast should be performed. Proper positioning of a pediatric patient may be hard to get accurate x-ray results (an inspiratory film with full extension of the neck). False negative rates have been reported up to 33% with Xray, while CT has a 90% sensitivity with up to 100% negative predictive value. AAP even suggests that CT be the first imaging modality with high suspicion of a RPA.

# X-RAY

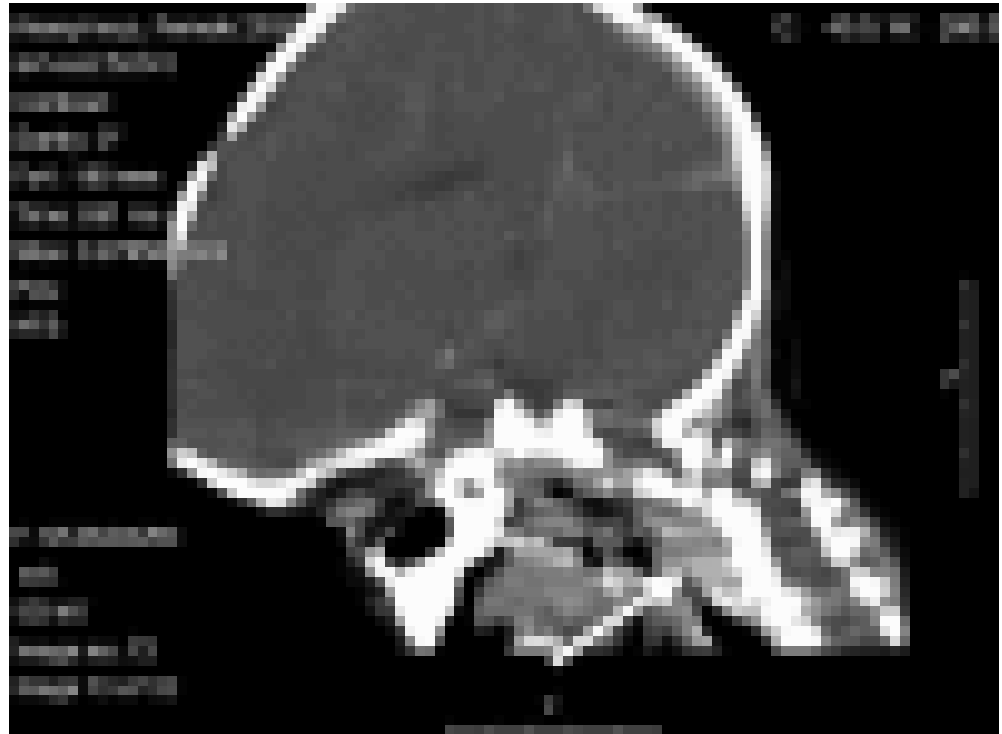
Positive X-ray if:

- Paravertebral space is increased in depth compared to the AP measurement of the adjacent vertebral body
- > 7 mm @ C2
- > 14 mm @ C6



# CT

- Can identify loculations and vascular landmarks.
- With rim enhancement or the scalloping wall
- Low density core, soft tissue swelling, obliterated fat planes and mass effect



## A. Palpate the bulge to see if it is ready to drain

- Palpating a visible bulge in the posterior pharyngeal wall should be avoided on exam. There is risk of rupturing the abscess into the upper airway in exam during palpation. If done, the patient should be examined in trendelenberg position with suction ready if the abscess should rupture.

## B. Lumbar Puncture

- Although this patient does have a stiff neck, high fever and is toxic in appearance, his other signs of drooling and muffled voice as well as posterior pharyngeal bulge indicate that a PTA is more likely than meningitis and should be ruled out first by a CT scan (sparing the baby of an LP). Also of note CT scans is beneficial before a lumbar puncture in cases of suspected increased intracranial pressure, although this was not described on this patient's physical exam (papilledema, bulging fontanelle, etc)



## D. Intubation

- Intubation would be the right answer if this patient was in respiratory distress. The patient's O<sub>2</sub> saturation is good at 95% and his respiratory rate 28 which is only 2 above the normal for 1 yo according to the Harriet Lane. Intubation is often required for most patients with bacterial tracheitis and all young infants with epiglottitis, but no thumbprint sign was seen on x-ray indicating this to be an unlikely cause.

# Question 2

CT of our patient mentioned in question #1 shows a retropharyngeal abscess with a small 0.5mm pocket. CBC and Blood cultures have been obtained. The patient is now sitting with his neck slightly extended and breathing comfortably. The patient has no known drug allergies.

What is the best treatment for this patient, choose all that apply.

- A. Empiric IV antibiotic therapy with ceftriaxone and ampicillin-sulbactam
- B. Intubation and surgical intervention by needle aspiration or incision and drainage
- C. PO antibiotics after clinical improvement inpatient and follow-up as outpatient.
- D. A, C
- E. A, B, C

# Question 2

CT of our patient mentioned in question #1 shows a retropharyngeal abscess with a small 0.5mm pocket. CBC and Blood cultures have been obtained. The patient is now sitting with his neck slightly extended and breathing comfortably. The patient has no known drug allergies.

What is the best treatment for this patient, choose all that apply.

- A. Empiric IV antibiotic therapy with ceftriaxone and ampicillin-sulbactam
- B. Intubation and surgical intervention by needle aspiration or incision and drainage
- C. PO antibiotics after clinical improvement inpatient and follow-up as outpatient.
- D. A, C
- E. A, B, C

## Answer: A & C

Empiric IV antibiotic therapy with ceftriaxone and ampicillin-sulbactam then PO antibiotics after clinical improvement inpatient and follow-up as outpatient.

- If the patient is in no acute distress and his respiratory status is stable, then there is no need to do surgical I&D immediately with small abscesses. If the patient fails IV antibiotic therapy and does not improve then surgical drainage is needed. But many studies have chosen the more conservative route initially.
- Abscesses with longest diameter greater than 20mm have a higher incidence of failing conservative antibiotic therapy.

# Antibiotics

- The most frequent pathogens are Group A Streptococcus and Staphylococcus aureus.
  - Others include H. Influenzae, Klebsiella, and Mycobacterium avium-intracellulare
- IV third generation cephalosporin with ampicillin-sulbactam or clindamycin is recommended to cover for anaerobes.
  - The exact amount of day of therapy has not been standardized but is based on fever resolution and clinical improvement usually ranging from 3-7 days
- PO antibiotics for discharge include clindamycin or amoxicillin/clavulanate, 14 day course.

## D: A, B, C

- This would be the correct answer if the patient was in respiratory distress. Intubate initially to secure the airway. Drainage can be done with needle aspiration if easily accessible through the oral cavity and the abscess is small in size. If there are multiple abscesses or they are larger in size (greater than 2cm), incision and drainage can be done both through the intraoral and the transcervical approach.

# References

- Nelson Textbook Pediatrics, 19<sup>th</sup> ed.
- The Harriet Lane Handbook, 19<sup>th</sup> ed.
- **AAP: Retropharyngeal Abscess in Children: Clinical Presentation, Utility of Imaging, and Current Management** [Frances W. Craig, MD\\*](#), [Jeff E. Schunk, MD‡](#), PEDIATRICS Vol. 111 No. 6 June 1, 2003 pp. 1394 -1398
- Up-To-Date: Retropharyngeal Infections in Children
- Retropharyngeal infections in children. Treatment strategies and outcomes C. Hoffmann, S. Pierrot, P. Contencin, M-P. Morisseau-Durand, Y. Manach, V. Couloigner International journal of pediatric otorhinolaryngology 1 September 2011 (volume 75 issue 9 Pages 1099-1103 DOI: 10.1016/j.ijporl.2011.05.024)
- **A nine month old child with retropharyngeal abscess secondary to mastoid abscess presenting as torticollis: a case report.** [Mydam J, Thiagarajan P. Cases J. 2009 Jul 21;2:6460.](#)