

# EM CASE OF THE WEEK.

BROWARD HEALTH MEDICAL CENTER  
DEPARTMENT OF EMERGENCY MEDICINE



Care Warriors

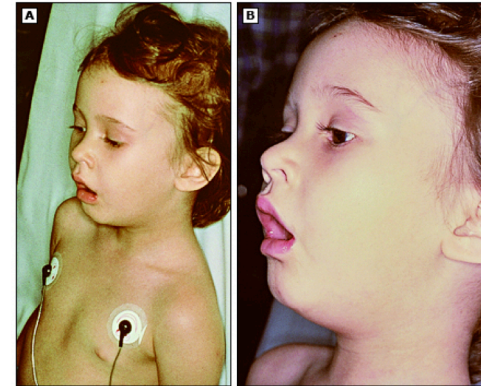
Author: Yasmany Dominguez Editor: Ajith Susai

February 2017 | Vol 3 | Issue 35

## Acute Epiglottitis

A 7-year-old boy is brought to the emergency room by his parents because he has had difficulty breathing and fever for the past 12 hours. He was delivered at term with no complications. Past medical history is significant for two episodes of common cold, which the parents attribute to natural immunity. The parents also chose not to have him vaccinated. Temperature is 40 degrees Celsius, pulse rate is 120/min, respirations are 29/min, and blood pressure is 95/60 mmHg. Oxygen saturation is 99% on room air. On physical examination, drooling is noted as well as stridor with minimal activity. Which of the following is the most appropriate next step?

- A. Chest x-ray study
- B. Immunization with primary vaccine series and immunoglobulin gamma
- C. Intramuscular administration of a corticosteroid
- D. Lateral x-ray studies of the soft tissue of the neck
- E. Throat culture and complete blood cell count



©2017 UpToDate®

Epiglottitis is inflammation of the epiglottis and adjacent supraglottic structures. Without treatment epiglottitis can progress to life threatening airway obstruction

(A) shows that the child prefers to sit and appears anxious.(B) shows that the child assumes the characteristic sniffing position to maximize the patency of her airway.

*EM Case of the Week is a weekly "pop quiz" for ED staff.*

The goal is to educate all ED personnel by sharing common pearls and pitfalls involving the care of ED patients. We intend on providing better patient care through better education for our nurses and staff.

BROWARD HEALTH MEDICAL CENTER

Department of Emergency Medicine  
1625 SE 3rd Avenue  
Fort Lauderdale, FL 33316

# Warriors

The correct answer is D. This question evaluates the examinee's ability to recognize acute epiglottitis and determine the most appropriate initial step in confirming the diagnosis. The correct answer is Option (D), lateral x-ray studies of the soft tissue of the neck. The patient described is of the appropriate age for acute epiglottitis, has high fever, and has not been immunized. All of these factors increase his risk of *Haemophilus influenzae* infection. The physical examination findings of drooling and stridor are characteristic of this condition. Lateral x-ray study of the soft tissue of the neck is the most appropriate next step because it will readily identify swelling of the epiglottis and loss of the vallecular air column.

## Discussion

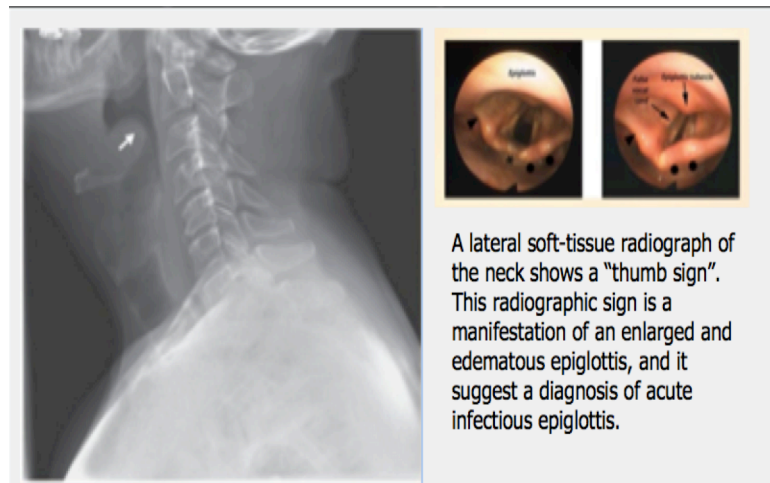
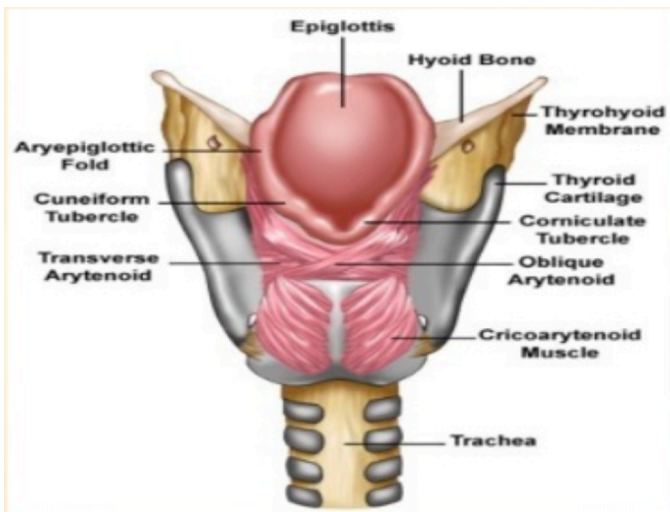
The epiglottis forms the back wall of the vallecular space below the base of the tongue. It is connected to the thyroid cartilage and hyoid bone by ligaments. Infectious epiglottitis is a cellulitis of the epiglottis, aryepiglottic folds, and other adjacent tissues. It results from bacteremia and/or direct invasion of the epithelial layer by the pathogenic organism.

Swelling of the epiglottis results from edema and accumulation of inflammatory cells in the potential space between the squamous epithelial layer and the epiglottal cartilage. The lingual surface of the epiglottis and periepiglottic tissues have abundant networks of lymphatic and blood vessels that facilitate spread of infection and the subsequent inflammatory response. Once infection begins, swelling rapidly progresses to involve the entire supraglottic larynx.

*Haemophilus influenzae* type b is the most common infectious cause of epiglottitis in children. The epidemiology of epiglottitis changed after the addition of the *Haemophilus influenzae* type b conjugate vaccine to the routine infant immunization schedule in the U.S.

**Risk factors** — In children, risk factors for epiglottitis include incomplete or lack of immunization for Hib and immune deficiency.

**Presentation** — sudden onset of high fever (between 38.8 and 40.0°C), severe sore throat, odynophagia, and drooling is common. Children with epiglottitis usually appear "toxic" however; there is a wide spectrum of severity. They experience a choking sensation, are distressed during inspiration, and are anxious, restless, and irritable.

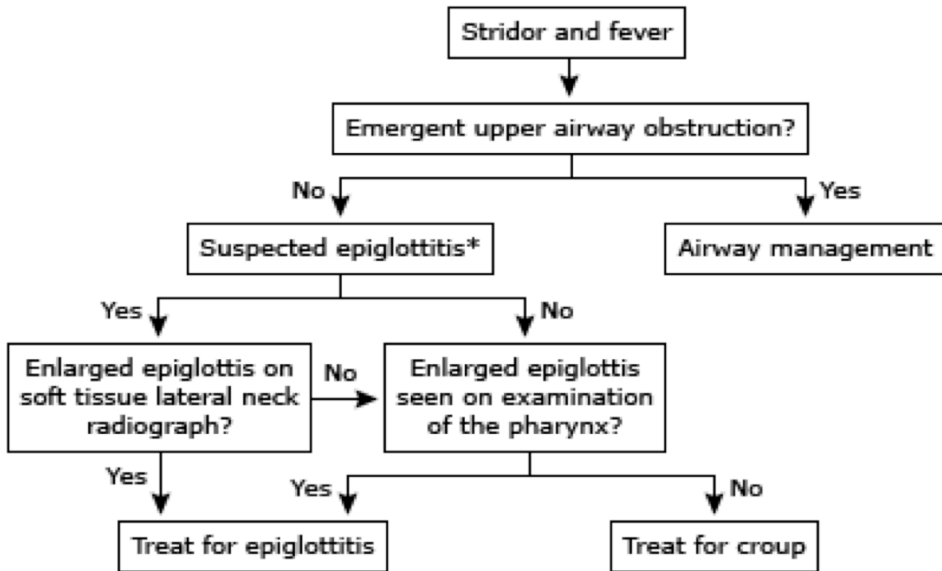


A lateral soft-tissue radiograph of the neck shows a "thumb sign". This radiographic sign is a manifestation of an enlarged and edematous epiglottis, and it suggests a diagnosis of acute infectious epiglottitis.

Copyright © 2010 Lippincott Williams & Wilkins

For a list of educational lectures, grand rounds, workshops, and didactics please visit [BrowardER.com](http://BrowardER.com) and click on the "Conference" link.

All are welcome to attend!



**Approach to child with suspected epiglottitis - ©2017 UpToDate®**

### Treatment

1. Hospitalization — danger of respiratory obstruction
2. Antibiotics — Ampicillin
  - a. Third gen. cephalosporin (i.m/i.v)
3. Steroids — hydrocortisone/dexamethasone (i.m/i.v)
4. Adequate hydration — parenteral fluids
5. Humidification and oxygen
6. Intubation or tracheostomy — respiratory obstruction

## Take Home Points

- Epiglottitis is inflammation of the epiglottis and adjacent supraglottic structures.
- Young children with epiglottitis classically present with fever, stridor, drooling, respiratory distress, anxiety, and the characteristic “sniffing” posture.
- In the patient with impending or complete obstruction airway management should be attempted
- Diagnosis of epiglottitis is confirmed by visualization of inflammation and edema of the supraglottic or in cases when direct visualization is not performed, epiglottic swelling on lateral neck radiographs.
- Soft-tissue radiographs of the lateral neck are not necessary to make a diagnosis of epiglottitis but represent a reasonable choice in stable patients



This month’s case was written by Yasmany Dominguez. Yasmany is a 4<sup>th</sup> year medical student from NSU-COM. He did his emergency medicine rotation at North Broward Hospital in December 2016. Yasmany plans on pursuing a career in Pediatric Medicine after graduation.

### REFERENCES

- 1) Rafei K, Lichenstein R. Airway infectious disease emergencies. *Pediatr Clin North Am* 2006; 53:215.
- 2) Cherry JD. Epiglottitis (supraglottitis). In: *Textbook of Pediatric Infectious Diseases*, 6th, Feigin RD, Cherry JD, Demmler-Harrison GJ, Kaplan SL. (Eds), Saunders, Philadelphia 2009. p.244.
- 3) Harper MB, Fleisher GR. Infectious disease emergencies. In: *Textbook of Pediatric Emergency Medicine*, 6th, Fleisher GR, Ludwig S, Henretig FM. (Eds), Lippincott Williams & Wilkins, Philadelphia 2006. p.887.