Epiglottitis in Children — Symptoms and Treatment

See online here

Epiglottitis, as the name suggests, is the inflammation of the epiglottis. Symptoms are rapid in onset and are severe. The infection can cause airway obstruction leading to difficulty in breathing, stridor and bluish discoloration of the skin ultimately leading to death.

Anatomy of Epiglottis

Epiglottis gets its name from “epi” meaning “above” the glottis. Epiglottis is a flap of elastic cartilage which is present at the root of the tongue. During breathing, it stands open allowing the passage of air easily into the larynx, while during swallowing it covers the larynx like a flap and closes it thus the food is not allowed to pass into the respiratory passage and diverts it towards the esophagus.

The epiglottis has taste buds on it as well. The epiglottis is formed from the fourth pharyngeal arch.

Epidemiology of Epiglottitis

The most common age group affected by the epiglottitis includes infants below one year of age and elderly over 85 years of age. The disease is caused by Haemophilus.
influenzae type b. The infection is now less prevalent due to Haemophilus influenzae type b vaccination.

Epiglottitis can be caused along with other infections caused by this organism. In the United States, the disease affects 1 in 100,000 adults per year and is not a common disease. It is usually the disease of adult men with a male to female ratio of 3:1.

Worldwide, the disease is common in nations who do not get immunized by Haemophilus influenzae type b vaccination.

Etiology of Epiglottitis

The most common organism causing the disease is Haemophilus influenzae which accounts for approximately 25 % of the cases followed by Haemophilus parainfluenzae, streptococcus pneumonia, and group A streptococci.

The disease is less commonly caused by Staphylococcus aureus, Mycobacteria, Bacteroides, Escherichia coli and by Candida in immunocompromised individuals. Although community-acquired methicillin-resistant Staphylococcus aureus is an important cause of infections worldwide, still the organism does not cause epiglottitis.

Non-infectious causes include crack cocaine smoking, thermal insults caused to infants who are bottle-fed, ingestion of chemicals and chemotherapy to the head and neck region. Lymphoproliferative disorders are also a possible cause.

Signs and Symptoms of Epiglottitis

- Difficulty in swallowing
- Fever
- Stridor (abnormal high pitched sound while breathing)
- Drooling of saliva
- Hoarseness of voice
- Cyanosis
- Restlessness
- Insisting on sitting up or leaning forward
Diagnosis of Epiglottitis

Diagnosis is made on direct visualization of the epiglottis by direct fibreoptic laryngoscopy in an operating room. In case of disease, the epiglottis appears to be cherry red in color and swollen.

Inspection by a tongue depressor is usually discouraged. On lateral spine X-ray, the disease is confirmed by a thumbprint sign which shows an enlarged and swollen epiglottis with dilated hypopharynx. On CT scan imaging, Halloween sign describes normal epiglottis but it excludes other causes of swelling in this region such as a retropharyngeal abscess or peritonsillar abscess.

Prognosis of Epiglottitis

The prognosis with epiglottitis is good if it is diagnosed and treated immediately but the disease can be fatal and can lead to death if there is airway obstruction. The mortality rate among adults is approximately 7%.

Complications of Epiglottitis

- Epiglottic abscess
- Pneumonia
- Vocal granuloma
- Cartilaginous metaplasia of epiglottis
- Empyema
- Meningitis
- Septic shock
- Septic arthritis
- Asphyxia leading to death
Management and Treatment of Epiglottitis

Airway management

If the patient presents with acute onset then first of all his airway should be maintained. **Tracheal intubation** should be done in case of airway compromise and if it fails then **cricothyrotomy** (surgical opening of airway) should be done.

Antibiotics

**Second or third-generation cephalosporins** along with **penicillin** or **ampicillin** should be given for streptococcal coverage. **Co-trimoxazole** or **clindamycin** can be given to patients who are allergic to penicillins.

Prevention

**Hib vaccine** is not widely used for preventing the disease. In case of contact with an individual infected by H influenza, **rifampicin** can be used prophylactically.

References

“Haemophilus b conjugate vaccines for prevention of Haemophilus influenzae type b disease among infants and children two months of age and older. Recommendations of the immunization practices advisory committee (ACIP).”

“Recommendation of the Immunization Practices Advisory Committee (ACIP) Polysaccharide Vaccine for Prevention of Haemophilus influenzae Type b Disease”

“Haemophilus influenzae type b”. *Centers for Disease Control and Prevention, Epidemiology and Prevention of Vaccine-Preventable Diseases*


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