

# Atypical Acute Epiglottitis With Gastrointestinal Bleeding

Robert W. Kyrzcz, MD, and Diane Indyk, DO  
Stamford, Connecticut

**E**piglottitis is a severe, rapidly progressing infection of the supraglottic larynx that is usually caused by the organism *Hemophilus influenzae*, type B. The peak incidence of this disease occurs in the 18-month to 7-year-old age group,<sup>1,2</sup> although many cases occur in individuals outside this age range. Typically the disease begins abruptly with a fever greater than 102 °F, sore throat, dysphagia, and increasing glottic swelling that may quickly progress to airway obstruction and death.<sup>3,4</sup>

This report chronicles an atypical presentation of a very young child with epiglottitis. The complications experienced in this case point out the role of stress on the child in the intensive care unit (ICU) setting and the use of steroids for the management of epiglottitis.

## CASE REPORT

The patient, a 13-month-old boy, was seen in the emergency room of a community hospital for noisy breathing of approximately seven hours' duration. He had had an upper respiratory tract infection for several days, and on the morning of admission, he had a fever spiking to 102 °F. He was seen by a physician, who felt the child had a viral illness; acetaminophen and fluids were prescribed. During the day the child had increasing stridor. The past medical history was unremarkable.

On physical examination, his temperature was 101.2 °F, heart rate was 120 beats per minute, and the respiratory rate was 20 breaths per minute. The child was alert and able to lie flat on the stretcher, though there was some respiratory distress as demonstrated by flaring of the nasal alae. When sitting upright, his head was held extended, and there was pooling of oral secretions and drooling. The rest of the examination was normal except for readily audible inspiratory stridor and a mildly inflamed pharynx. The lungs were clear to auscultation and there were no retractions. The lateral neck x-ray examination demonstrated an enlarged epiglottis with airway compromise.

Submitted, revised, October 28, 1987.

From the Family Practice Residency Program, St. Joseph Medical Center, Stamford, Connecticut. Requests for reprints should be addressed to Dr. Diane Indyk, Department of Pediatrics, St. Joseph Medical Center, 128 Strawberry Hill Ave, Stamford, CT 06904.

The child was taken to the operating room for emergency intubation, at which time the diagnosis of epiglottitis was confirmed and culture specimens from the epiglottis and blood were obtained. The child was placed on 40 percent blow-by oxygen, and an arterial blood gas determination at that time was pH 7.42, partial pressure carbon dioxide (pCO<sub>2</sub>) 4.5 kPa (34 mmHg), and partial pressure oxygen (pO<sub>2</sub>) 11.6 kPa (87 mmHg). Initial laboratory studies showed a white blood cell count of 3 × 10<sup>6</sup>/L (3 × 10<sup>3</sup>/mm<sup>3</sup>) with 0.28 neutrophils, 0.13 stab cells, 0.50 lymphocytes, and 0.06 monocytes. The hemoglobin and hematocrit were 113 g/L (11.3 g/dL) and 0.36 (36 percent), respectively. The serum electrolytes were sodium 133 mmol/L (mEq/L), potassium 3.7 mmol/L (mEq/L), chloride 101 mmol/L (mEq/L), and carbon dioxide content 18 mmol/L (mEq/L).

The child was taken to the intensive care unit (ICU) and started on intravenous ampicillin, 200 mg/kg/d, chloramphenicol, 100 mg/kg/d, and hydrocortisone sodium succinate, 10 mg/kg/d. The child was extubated in 48 hours. Culture results of both blood and epiglottitis specimens were reported positive for *Hemophilus influenzae*, type B, β-lactamase negative. With the child's extubation, defervescence, and otherwise improved clinical picture, his intravenous antibiotics were stopped and changed to an oral preparation. The intravenous steroids were continued an additional 18 hours because of some continuing inspiratory stridor, which resolved without complication. The patient was then transferred to the pediatric floor on hospital day 4.

On hospital day 5 the child became pale and dusky and passed a large, black, guaiac-positive stool. His hemoglobin and hematocrit dropped to 40 g/L (4.0 g/dL) and 0.13 (13 percent), respectively, with a platelet count of 438 × 10<sup>9</sup>/L (438 × 10<sup>3</sup>/mm<sup>3</sup>), and a reticulocyte count of 0.025 (2.5 percent). Orthostatic blood pressures were consistent with a sudden and significant blood loss. The child was returned to the ICU. A diagnosis of upper gastrointestinal bleeding was made after aspiration of the stomach contents revealed guaiac-positive, coffee-ground material. The child was transfused with packed red blood cells, and a repeat hemoglobin and hematocrit were 126 g/L (12.6 g/dL) and 0.37 (37 percent), respectively. Oral prophylaxis with aluminum hydroxide gel with simethicone was begun. An

adult gastroenterologic consultant did not feel comfortable performing an endoscopic examination on a child. The patient passed one subsequent tarry stool, and on the following day a guaiac-negative stool was noted. The hemoglobin and hematocrit remained stable.

The child was transferred back to the pediatric floor, the antacid was changed to sucralfate, and the oral antibiotic was continued. The stools remained guaiac-negative. The child was discharged home on sucralfate and antibiotic.

## DISCUSSION

During the initial evaluation of the child the examining physicians were concerned with upper airway obstruction caused by foreign body aspiration, inspiratory stridor secondary to laryngotracheobronchitis, or epiglottitis. The typical rapidly progressive course of epiglottitis mandates accurate diagnosis and quick action by the physician. This case demonstrates an atypical presentation of the disease. First, the child was 13 months of age, much younger than the classical peak incidence range of 18 months to 7 years. Faden<sup>4</sup> studied 48 patients over an eight-year period, the youngest of whom was 18 months old. Age alone, therefore, should not dissuade the physician from the consideration of a diagnosis of acute epiglottitis.

The second atypical feature of this case was the prolonged duration of symptoms. This child initially experienced upper respiratory tract symptoms several days before being seen in the emergency room. Irritability was first noted nearly seven hours before the visit, but the child was able to lie flat and to sleep intermittently. This presentation is in sharp contrast to the textbook picture of epiglottitis as an acute, rapidly progressive disease. The diagnosis must be considered even in the comfortable-appearing, stridorous child.

Finally, this case brings to issue the use of steroids in the treatment of acute epiglottitis in an ICU setting. Admission to the ICU is considered the standard of care for the child with epiglottitis.<sup>5,6</sup> Following intubation the child is subjected to numerous blood tests, is restrained, and is surrounded by noisy, frightening monitors. The cumulative effect is likely to produce a good deal of stress on the child. Although ulcer disease occurs infrequently in children aged under 12 years,<sup>7</sup> stress ulceration has been reported in infants aged less than 1 year.<sup>8</sup> The safety and efficacy of the prophylactic agents and regimens in children have not been well established.<sup>8</sup> The recognition of stress as a harbinger of ulcer disease in the child in the ICU setting may help to decrease the morbidity and mortality of this complication.

The use of steroids in the patient with epiglottitis remains controversial. Strome and Jaffe,<sup>9</sup> after administering steroids to 12 children with epiglottitis, found that the period of intubation was significantly decreased by ste-

roids. Although the overall duration of the disease was not altered, the supraglottic inflammation and edema during the first 48 hours were most affected. Wetmore and Handler<sup>6</sup> in a study of 64 patients, however, concluded that steroids did not alter the length of intubation or the length of hospital stay of their patients. DiTirro et al<sup>10</sup> studied 148 cases of acute epiglottitis and found that although steroids did not alter the duration of intubation or the infectious complications of the disease, 4 percent of their 91 patients who received steroids developed gastrointestinal bleeding.

Ulcer disease has occurred in association with a variety of conditions, including sepsis, central nervous system disease, hypoxia, hypotension, and shock. It is difficult to assess the role of stress vs organic disease in the pathogenesis of ulceration. In the patient with acute epiglottitis, steroids should be given only with the knowledge and foresight that gastrointestinal complications may ensue.

With the administration of the Hemophilus influenzae type B vaccine at the age of 2 years, the incidence of epiglottitis is expected to decline.<sup>11,12</sup> The percentage of cases occurring at a younger age may be expected to increase, however, at least until the vaccine can be incorporated into the diphtheria-tetanus-pertussis immunization series. The physician should be aware of an evolving age incidence of epiglottitis as well as the possibility of atypical presentations of the disease. The use of steroids in treatment remains controversial; they should be administered with caution, and avoided when possible.

## References

1. Johnson GK, Sullivan JL, Bishop LA: Acute epiglottitis. *Arch Otolaryngol* 1974; 100:333-337
2. Stern RC: Acute infections of the larynx and trachea. In Behrman RE, Vaughan VC (ed): *Nelson Textbook of Pediatrics*, ed 12. Philadelphia, WB Saunders, 1983
3. Bates JR: Epiglottitis: Diagnosis and treatment. *Pediatr Rev* 1979; 1:173-176
4. Faden HS: Treatment of Hemophilus influenzae type B epiglottitis. *Pediatrics* 1979; 63:402-407
5. Selbst SM: Epiglottitis: A review of 13 cases and a suggested protocol for management. *J Fam Pract* 1984; 19:333-337
6. Wetmore RF, Handler SD: Epiglottitis: Evolution in management during the last decade. *Ann Otol Rhinol Laryngol* 1979; 88:822-826
7. Sheen A, Anderson K, Holbrook P, Sly RM: Bleeding duodenal ulcer as a complication of treatment of status asthmaticus with adrenal corticosteroids. *Ann Allergy* 1980; 45:34-36
8. Bell MJ, Keating JP, Ternberg JL, Bower RJ: Perforated stress ulcers in infants. *Pediatr Surg* 1981; 16:998-1002
9. Strome M, Jaffe B: Epiglottitis—Individualized management with steroids. *Laryngoscope* 1974; 84:921-928
10. DiTirro FR, Silver MH, Hengerer AS: Acute epiglottitis: Evolution of management in the community hospital. *Pediatr Otorhinolaryngol* 1984; 7:145-152
11. Cochi SL, Broome CV: Vaccine prevention of Hemophilus influenzae type B disease: Past, present and future. *Pediatr Infect Dis* 1986; 5:12-19
12. Phillips CF: New immunizations for children. *Pediatr Rev* 1986; 7:291-295