A

dult epiglottitis occurs in 1 per 100,000 adults per year.\(^1\)

Causes include infection, trauma, and radiation, and *Haemophilus influenzae* is usually the offending organism in children 4 to 6 years of age.\(^2,3\) Common symptoms are sore throat, dysphagia, a muffled voice, and respiratory distress.\(^4,5\)

Patients with epiglottitis have difficulty handling secretions and often cannot lie flat; most often the patient will be sitting forward and curled over a supporting device. Radiographic films will show an epiglottis that looks like a swollen thumb rather than the normal flaplike appearance. The associated respiratory distress can be immediate, severe, and progress rapidly, requiring airway management in the operating room.

Careful inhalation induction and titrated intravenous (IV) sedation prior to rigid bronchoscopy or endotracheal intubation are the recommended techniques.\(^6-9\) A surgeon should be present in the operating room during induction with the surgical team poised to perform an emergency tracheostomy. It is imperative to keep the patient as relaxed as possible to prevent panic, coughing, or airway irritations that may compromise the already marginal airway. Instrumentation should be gentle, and the anesthetist’s paramount goal should be a successful first attempt at intubation, as repeated attempts will likely compromise an already edematous anatomy. The anesthetist needs needs to be cognizant of time during attempts at intubation and not delay progress to a tracheostomy in the failure to ventilate and intubate. The use of steroids is controversial because they may inhibit resolution of infection, and racemic epinephrine is not necessarily useful.\(^6\)

**Case summary**

A case of acute epiglottitis involving a 19-year-old 70-kg man presented in the emergency room in acute respiratory distress. The patient was diagnosed in the emergency room by the otolaryngologist after a brief view with a fiberoptic scope, who stated that he barely introduced the fiberoptic scope and viewed the swollen, “cherrylike” epiglottis and immediately removed the instrument.

After anesthesia consultation, the patient was taken to the operating room with supplemental oxygen at 5 L/min via nasal cannula and prepared for an emergency intubation followed by direct laryngoscopy.

Our patient was in distress: he was leaning forward, unable to swallow, with a labored respiratory rate of 24 to 30 breaths per minute and could maintain an oxygen saturation at about 94%. He could barely phonate, which made it difficult to obtain a medical history and had been unable to ingest food or fluids for the last 24 hours, which was also the onset of his illness. Upon arriving in the operating suite, monitoring devices were applied: heart monitoring leads (lead II), noninvasive blood pressure cuff, pulse oximetry, and verification of a free-flowing IV site. A facial mask was applied, and the patient became anxious and uncooperative. Intravenous sedation was necessary in order for the patient to tolerate an inhalation induction. Midazolam, 1 mg IV, was given and alfentanil, 500 µg IV, was given to reduce airway irritability and coughing. A tracheostomy tray was opened, and
the otolaryngologist was present. Sundry intubation devices were present; laryngoscopes with curved and Miller blades, the fiberoptic bronchoscope, and Bullard laryngoscopes (one with a 7.0-mm endotracheal tube and the other with an 8.0-mm endotracheal tube).

After the patient became more relaxed and cooperative, he was preoxygenated with 100% oxygen for about 5 minutes, and an inhalation induction was begun with 0.5% increments of sevoflurane. Care was taken at all times to maintain spontaneous respirations. After about 3 minutes and a 2% concentration of sevoflurane, the patient was assessed to be adequately anesthetized to attempt laryngoscopy. The Bullard laryngoscope was gently inserted into the oral pharynx. The larynx was immediately in view, and the trachea was intubated successfully on the first attempt with a 7.0-mm oral endotracheal tube. After verification of correct endotracheal tube placement through auscultation and end-tidal carbon dioxide readings, propofol, 150 mg IV, was given followed by 6 mg of mivacurium. Sevoflurane was titrated to desired effect, and the direct laryngoscopy went smoothly and without incident. The patient was transferred to the intensive care unit and placed on a ventilator for 3 days. On day 2 the otolaryngologist performed another direct laryngoscopy. The swelling had gone down enough to plan extubation the following morning. An emergency tracheostomy tray was kept at the bedside.

On the next morning, the patient was unable to be extubated because he had developed an idioventricular rhythm with elevated T waves in all leads. He also developed hypotension with a systolic blood pressure at about 60 to 80 mm Hg. Cardiac consultation was obtained, and the cardiologist recommended a magnesium sulfate infusion to correct the dysrhythmia. A dopamine infusion was started to improve hemodynamics, and we inserted an arterial line and Swan-Ganz catheter. The patient was transferred to a tertiary center where he died that evening with a preliminary diagnosis of heart failure and acute myocardial infarction. The autopsy report revealed that the cause of death was heart failure secondary to viral myocarditis.

**Discussion**

As a case study, we have an emergent airway problem followed by fatal sequelae. The purpose of this article, however, is to focus on the issue of airway management. Acute epiglottitis is one of the greatest and most feared challenges among anesthetists. Securing the airway is the paramount goal, and there are several approaches. Traditional laryngoscopy might be difficult due to the swelling and distortion of the airway. Figure 1 shows 3 views obtained, and one can readily conclude that laryngoscopy may have been difficult to impossible to perform. A fiberoptic laryngoscope also was available, but the swelling and distortion tend to deflect the scope, and a very narrow window of opportunity exists. The Bullard laryngoscope was chosen because it was deemed...
the instrument of choice since it reliably gives a straight and direct view of the larynx. Second, by the nature of its shape, the design makes it ideal to travel beneath the swollen epiglottis and turn upward with a fiberoptic view of the larynx (Figures 2 and 3).

Conclusion
The Bullard laryngoscope is an ideal instrument for intubation of the trachea in a patient with acute epiglottitis. Traditional laryngoscopes involve pressure on an already swollen and compromised epiglottis. Fiberoptic laryngoscopes are easily deflected by the donut shape of the epiglottis, and considerable trauma can occur while blindly trying to slide the tube over the scope itself (see Figure 1). The Bullard laryngoscope barely touches the epiglottis on insertion and provides a clear view of the vocal cords and larynx. Also, the endotracheal tube can be viewed as the tube is placed into the trachea. Pediatric Bullard laryngoscopes also are available (see Figure 3) and are a valuable addition to the anesthetist’s difficult airway cart.

Finally, the purpose of this article is not to condemn any particular method or instrument of intubation, but rather to encourage anesthesiapractitioners to consider alternative adjuncts if available.

REFERENCES

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