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LETTER TO THE EDITOR

Acute epiglottitis in the era of post-*Haemophilus influenzae* type B (HIB) vaccine

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To the Editor:

We report a case of an HIB-vaccinated 16-year-old male who developed sudden onset fever, sore throat, dysphagia, and dyspnea. He was brought to the operating room (OR) for controlled intubation. A deep plane of anesthesia was obtained via inhalational anesthesia (end tidal sevoflurane 4 % in 100 % O_2) with the patient breathing spontaneously in a sitting position. Direct laryngoscopy revealed grade IV view secondary to an edematous epiglottis. The airway was secured with a 6.5-mm endotracheal tube (ETT), by use of a Parsons laryngoscope (Fig. 1). After treatment with intravenous antibiotics for 24 h, he was extubated and discharged.

The incidence of acute epiglottitis in children has decreased from 4.9 to 0.02 cases/100,000/year as a result of vaccination with HIB [1]. Stridor, tachypnea, and fever are commonly associated with epiglottitis in children who will need airway intervention [2]. Older children, such as ours, may have more subtle signs of respiratory difficulties, i.e. inability to lay flat, voice changes, and dysphagia. The classical signs of "tripod position" (drooling, stridor, dyspnea, tachypnea) may not be seen in older children, adults, or early in the disease process [3, 4].

Confirmation of epiglottitis occurs after prompt transport to the OR, followed by mask induction of general anesthesia, venous access, and intubation. Securing the airway in the emergency department is not recommended. The OR should be prepared with several laryngoscope blades and endotracheal tubes of different sizes with stylets, keeping in mind that there is likely to be a need to "size down" at least 0.5–1 mm. If available, a video-assisted laryngoscope can be useful for visualization.

Mask induction using sevoflurane with the patient in the upright sitting position is the preferred technique because this facilitates respiration. Use of intravenous ketamine has been shown to be successful, especially for patients who will not cooperate with a mask technique. Use of muscle relaxants before securing the airway is not advised because relaxation of the pharyngeal muscles may cause complete obstruction [5]. Once sufficient depth of anesthesia is achieved, intravenous access is obtained, and the child is slowly lowered into supine position. Direct laryngoscopy is then performed while the child is spontaneously breathing. If the anatomy cannot be identified because of excessive swelling, the anesthesiologist should look for air bubbles during exhalation or on manual chest compression, which can help ascertain the glottic opening [6]. Once general manifestations of the acute infection have subsided and there has been a sufficient decrease in inflammation on laryngoscopic examination with a leak around the endotracheal tube with the cuff deflated, extubation can be performed in a controlled setting [7].

In summary, older children present with symptoms that are often analogous to those of adult patients diagnosed

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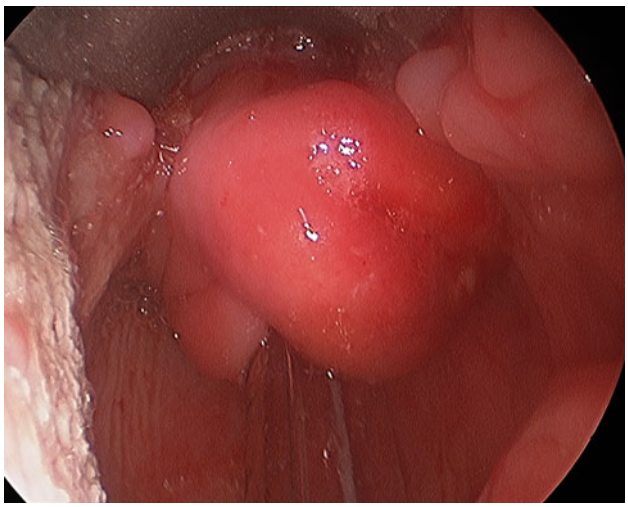

Fig. 1 Epiglottitis in an HIB-vaccinated patient

with epiglottitis. They are less likely to have stridor, and more often have odynophagia, dysphagia, and voice change, for example "hot potato" voice. Also, patients who have been vaccinated may have more subtle presentations. Continued vigilance for epiglottitis requires building of protocols for young trainees and having simulation drills to maintain awareness, preparedness, and management skills.

References

1. Al-Qudah M, Shetty S, Alomari M, Alqdah M. Acute adult supraglottitis: current management and treatment. South Med J. 2010;103:800–4.
2. Shah R, Stocks C. Epiglottitis in the United States: national trends, variances, prognosis, and management. Laryngoscope. 2010; 120(6):1256–62.
3. Guldfred LA, Lyhne D, Becker BC. Acute epiglottitis: epidemiology, clinical presentation, management and outcome. J Laryngol Otol. 2008;122:818–23.
4. Loftis L. Acute infectious upper airway obstructions in children. Semin Pediatr Infect Dis. 2006;17:5–10.
5. Hannallah R, Rosales JK. Acute epiglottitis: current management and review. Can Anaesth Soc J. 1978;25(2):84–91.
6. Davis PJ, Cladis FP, Motoyama EK. Smith's anesthesia for infants and children. 8th ed; 2011. p. 811–3.
7. Guardiani E, Bliss M, Harley E. Supraglottitis in the era following widespread immunization against *Haemophilus influenzae* type B: evolving principles in diagnosis and management. Laryngoscope. 2010;120(11):2183–8.