tiques. However, in current medical practice, increasing numbers of elderly and debilitated patients will be receiving this type of enteral nutritional supplementation before bowel surgery. Therefore, the bowel should be empty before surgery and if electrosurgery is anticipated, the bowel should be vented. These simple steps will eliminate the contact of an explosive mixture with a hot surface and prevent further intraoperative explosions.

Anesthesiology

CLINICAL REPORTS

REFERENCES

Epiglottitis in the Adult

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Epiglottitis in children is a frequently lethal upper airway problem because of edema of the supraglottic larynx. Although epiglottitis in adults is less common, over 100 cases are in the otorhinolaryngology literature.1–5 Five postpubertal patients in one year with this diagnosis have been seen in our hospital. The emphasis was on early endotracheal intubation in contrast to observation and performing tracheostomy if respiratory obstruction developed.2–4,6

REPORTS OF FIVE CASES

Patient 1. A 22-year-old man complained of sore throat, dysphagia for three days, and mild respiratory distress. Indirect laryngoscopy revealed an edematous, erythematous epiglottis but normal vocal cords. There was no posterior pharyngeal swelling. Because of the relatively clear airway, the patient was observed in the Intensive Care Unit but the trachea was intubated. After two days of intravenous ampicillin, a lateral neck roentgenogram showed a decrease in epiglottic swelling. The patient was transferred to the ward with subsequent resolution of all symptoms.

Patient 2. A 34-year-old schizophrenic man complained of a sore throat and dysphagia for 24 hours. The patient had respiratory distress when supine. Physical examination showed marked swelling of the neck and a lateral neck roentgenogram showed massive epiglottic swelling with air present in the epiglottis. After the patient inhaled oxygen and halothane followed by tracheal intubation, the otolaryngologist performed a tracheostomy. Multiple organisms were cultured from the epiglottis. The patient proceeded to develop mediastinitis and required two months of hospitalization.

Patient 3. A 33-year-old man was seen in the emergency room complaining of a sore throat and dysphagia. A lateral neck roentgenogram was originally read as normal and penicillin therapy initiated. Another review of the roentgenogram 12 hours later revealed epiglottic swelling and retropharyngeal air. The patient returned to the hospital in mild respiratory distress. Indirect laryngoscopy showed marked epiglottic inflammation and normal vocal cords. The trachea was intubated following intravenously administered thiopental and succinylcholine. Direct laryngoscopy showed several smaller collections of pus in the epiglottis. Ampicillin was given intravenously and the trachea remained intubated for two days. Blood and epiglottic cultures grew Hemophilus influenzae.

Patient 4. A 14-year-old male adolescent presented with 8 hours of sore throat and drooling but no respiratory distress. A lateral neck roentgenogram revealed epiglottic swelling. After inhalation of halothane and oxygen, the trachea was intubated and ampicillin was given intravenously. No epiglottic cultures were taken but blood cultures were negative. The patient was reexamined at 48 hours and the trachea extubated after marked improvement was noted.

Patient 5. A 28-year-old man complained of 36 hours of sore throat and dysphagia. Lateral neck roentgenograms revealed a markedly swollen epiglottis. After inhalation of halothane and oxygen, the trachea was intubated with some difficulty. Direct laryngoscopy revealed an epiglottic abscess which was drained and cultured. Normal mouth flora were recovered. Ampicillin was given intravenously and the trachea extubated two days later in the operating room after direct laryngoscopy revealed marked improvement.

DISCUSSION

Morgenstein and Abramson7 believe that adults are equally prone as children to suffer obstruction. Other authors argue that adults are less likely to acutely obstruct their airways.5,8,9 Because of this disagreement, management of the disease remains controversial. However, there can be no doubt that acute obstruction of the

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airway with adult epiglottitis is not uncommon. Gorfinkel et al.\textsuperscript{5} reported three adults, two of whom died, who experienced complete airway obstruction while being observed in the hospital with acute epiglottitis. Robbins and Fitz-Hugh\textsuperscript{4} described a patient who was initially observed but eventually required an emergency tracheostomy for airway obstruction. They concluded that “the great lesson to be learned from the literature is the recognition of the need for early tracheostomy.” Kander and Richards\textsuperscript{2} described nine cases, two of whom required tracheostomy. The remaining patients developed slight airway obstruction. In a recent series of six patients, only two patients had dyspnea and then underwent tracheostomy.\textsuperscript{1} Although the two latter series included no deaths, the overall mortality from airway obstruction associated with acute epiglottitis is 32–50 per cent.\textsuperscript{4,7} I, therefore, conclude that endotracheal intubation should be seriously considered in an adult with acute epiglottitis before overt airway obstruction develops.

We successfully intubated the trachea in the operating room in four adult patients with epiglottitis with the surgeons standing by in each case prepared to perform a tracheostomy in case of failed intubation. These intubations were performed prior to signs or symptoms of severe airway obstruction but after physical examination, radiologic examination or indirect laryngoscopy led the otolaryngologist and anesthesiologist to feel there was a significant possibility that obstruction might occur. In patient one, the lack of posterior pharyngeal swelling and the clear view on indirect laryngoscopy of the arytenoids and vocal cords led the otolaryngologist to feel that close observation would be a safe course. In patient two, a tracheostomy was performed because of the surgeon’s feeling that the supraglottic swelling was so massive that any progression might make reintubation impossible. This may have contributed to the development of mediastinitis in this patient and might have been avoided by leaving a well-secured endotracheal tube in place.

An additional benefit to securing an airway in our patients was the ability to perform a careful direct laryngoscopy. Three of our patients had focal epiglottic collections of exudate, consistent with prior observations that epiglottic abscesses are more common in adults than in children with this disease.\textsuperscript{10} In patient five, drainage of his abscess resulted in an immediate visible decrease in the size of the epiglottis. Such drainage of focal exudate permits more rapid resolution of tissue infection.\textsuperscript{11}

In summary, the rapid deterioration after appearance of partial obstruction in some patients has lead me to the conclusion that securing an airway early in the course will prevent morbidity and mortality. Endotracheal intubation secures the airway, allows drainage of focal exudate, carries lower morbidity and mortality than tracheostomy, and spares the patient the discomfort of a surgical procedure.

The eventual course of patients with epiglottitis but a clear airway on examination, as in our patient one, does not appear from the literature to carry the same mortality as in the patient with signs of obstruction. The institution of antibiotic therapy and the availability of skilled personnel and intensive monitoring may spare such patients any endotracheal intubation.

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