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.

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 otolaryngology 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 not 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 53-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 small 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.6,8,9 Because of this disagreement, management of the disease remains controversial. However, there can be no doubt that acute obstruction of the

REFERENCES

airway with adult epiglottitis is not uncommon. Gorfin-
kel et al.\(^5\) 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\(^4\) described a patient who was initially
observed but eventually required an emergency trache-
ostomy for airway obstruction. They concluded that “the
great lesson to be learned from the literature is the rec-
oognition of the need for early tracheostomy.” Kander and
Richards\(^2\) 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 tracheo-

stomy\(^1\). Although the two latter series included no
deaths, the overall mortality from airway obstruction
associated with acute epiglottitis is 32–50 per cent.\(^4,7\)
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 in-
tubations 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 ary-
tenoids 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 sur-
geon’s feeling that the supraglottic swelling was so mas-
sive that any progression might make reintubation im-
possible. 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 lar-
yngoscopy. 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.\(^10\) 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.\(^11\)

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 in-
tubation secures the airway, allows drainage of focal
exudate, carries lower morbidity and mortality than trac-
eostomy, 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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