Ventilatory difficulty was encountered in all patients. The difficulty occurred after a wide dose range of fentanyl (5-35 µg/kg). Fentanyl was administered in all instances as an intravenous drip at the rate of 200-300 µg/min. In one group of patients, the glottis was noted to be open (fig. 1), although ventilation was impossible and the trunk and extremities were judged to be rigid. Although an endotracheal tube could be inserted over an endoscope without difficulty, ventilation was not possible until 20 mg of succinylcholine was administered intravenously.

The second group of patients exhibited glottic closure (fig. 2) and clinically evident trunical rigidity. A third group of patients was characterized by glottic narrowing without trunical rigidity, as judged by palpation of the abdomen. In these patients, attempted manual ventilation resulted in encroachment of the surrounding pharyngeal tissue upon the larynx (fig. 3). The response to administration of succinylcholine was dramatic (fig. 4). The glottis became wider 15-30 s after iv administration of 20 mg of succinylcholine and was completely opened within about 45 s (fig. 4). Ventilation was easier 30-45 s after administration of 20 mg of succinylcholine in those patients who manifested trunical rigidity.

Previous studies have indicated that the inability to ventilate patients induced into anesthesia with “high doses” of fentanyl may be due to trunical rigidity or closure of the glottic aperture. Direct observation of the glottis, however, reveals that either factor or a combination may be responsible.

**REFERENCES**


(Retected for publication December 16, 1986.)

**Modified Rigid Bronchoscope for Nd-YAG Laser Resection of Tracheobronchial Obstructing Lesions**

To the Editor:—Various approaches to the management of anesthesia for resection of tracheobronchial lesions with the neodimium-ytrrium aluminum garnet (Nd-YAG) laser have been described. We would like to describe a simple technique that facilitates both positive pressure ventilation and the administration of volatile anesthetic agents through the rigid bronchoscope.

We use a separate reusable endotracheal tube cuff (Rusch Inc., NY) and secure it to the bronchoscope as shown (fig. 1). Following induction of anesthesia, the rigid
We recognize that our modified rigid bronchoscope would not be appropriate for patients with proximal tracheal lesions. Jet ventilation, either directly through the bronchoscope or through a catheter placed distal to the lesion, would seem appropriate in such cases.10

RAYMER P. GRANT, M.D., F.R.C.P.(C)
Clinical Assistant Professor

S. ADRIAN WHITE, M.B., F.R.C.P.(C)
Clinical Assistant Professor

SCOTT C. BRAND, R.R.T.
Supervisor, Anesthesia Technical Services
University of British Columbia
Faculty of Medicine
Department of Anesthesiology
Vancouver General Hospital
Vancouver, B.C., Canada

REFERENCES

(Accepted for publication December 16, 1986.)