

**TRANSTRACHEAL VENTILATION**

Until a more definite method of handling respiratory obstruction is available (such as endotracheal intubation or tracheotomy) transtracheal oxygen insufflation has proven to be a satisfactory method. The equipment consists of a 14 gauge thin-walled needle, with stylet, and tubing to a source of oxygen. (Hamelberg, W.: *Artificial Ventilation Using Transtracheal Insufflation of Oxygen*, *GP* 25: 112 (May) 1962.)

**SURGICAL PNEUMOTHORAX**

Measurements of arterial blood for oxygen saturation, carbon dioxide tension, and pH were done in 32 patients undergoing intrathoracic operation. The following factors significantly affected ventilatory function: (1) the presence or absence of pathology in each of the two lungs, (2) the volume of ventilation, (3) the concentration of oxygen in the inhaled mixture, and (4) preanesthetic medication. The degree of lung collapse and the position of the patient played a less important part; opening of the pleura had no effect. Patients with extensive disease of the operated lung and minimal or no disease of the contralateral lung were able to compensate better than patients with minimal or no disease of the operated lung. On the other hand, patients with extensive disease of the contralateral lung compensated very poorly during collapse of the operated lung. Hyperventilation was effectively used to decrease accumulation of carbon dioxide but was not as effective in eliminating oxygen desaturation. However, the magnitude of desaturation was significantly decreased by hyperventilating patients with 100 per cent oxygen. If complete collapse is desirable for optimal operating conditions, it can be effected with no greater hazard to the patient than that imposed by partial collapse provided: (1) the condition of the contralateral lung is good; (2) hyperventilation of the contralateral lung is effected; and (3) high concentrations of oxygen are used in the anesthetic mixtures. (Bonica, J. J., and others: *Factors Which Affect Ventilatory Function During Surgical Pneumothorax*, *J.A.M.A.* 180: 185 (Apr. 21) 1962.)

**EMPHYSEMA** Arterial oxygen saturation in patients with advanced pulmonary em-

physema may be significantly lower during sleep than while awake. The change from awake to sleeping levels occurred rapidly with the onset of sleep, suggesting an abrupt decrease in ventilation. The converse occurred on awakening. The decrease in ventilation, which occurs during sleep in healthy people, probably accounts for the increased hypoxia in these already hypoxic patients. Oxygen administration at night may be advisable in patients with waking hypoxia due to emphysema, provided carbon dioxide retention is not marked. (Trask, C. H., and Cree, E. M.: *Oximeter Studies on Patients with Chronic Obstructive Emphysema, Awake and During Sleep*, *New Engl. J. Med.* 266: 639 (Mar. 29) 1962.)

**EMPHYSEMA** No apparent connection can be found between the extent of pulmonary vascular changes associated with chronic obstructive emphysema and right ventricular hypertrophy. This vascular hypertrophy is secondary to pulmonary hypertension, which may be reversible, while destructive vascular changes are not reversible. Other factors which have been implicated as causative in production of pulmonary hypertension are hypoxia, hypercapnia, hypervolemia and increased cardiac output. (Cromie, J. B.: *Correlation of Anatomic Pulmonary Emphysema and Right Ventricular Hypertrophy*, *Amer. Rev. Resp. Dis.* 84: 657 (Nov.) 1961.)

**AIRWAY MAINTENANCE** Considerable variation was observed radiographically in upper airway patency and in relationships of pharyngeal structures when conscious subjects maintained their heads in a neutral position. Cervical extension uniformly caused upper airway expansion. The airway was maintained or expanded during cervical flexion. Wide opening of the mouth caused the greatest degree of airway occlusion observed in the study. Greatest variation in pharyngeal structural relationships was caused by voluntarily increasing intrathoracic pressure. This maneuver was also associated with variable degrees of airway occlusion. (Shelton, R. L., Jr., and Bosma, J. F.: *Maintenance of the Pharyngeal Airway*, *J. Appl. Physiol.* 17: 209 (Mar.) 1962.)