

crease in the conductance-volume ratio. This increase in airway conductance after bleb and bullae resection presumably was due to improved lung elastic pressure, which allowed the airways to increase in diameter. Additionally, there may have been some reduction in compression of neighboring airways. (Rogers, R. M., DuBois, A. B., and Blakemore, W. S.: *Effect of Removal of Bullae on Airway Conductance and Conductance Volume Ratios*, *J. Clin. Invest.* 47: 2569 (Dec.) 1968.)

BRONCHOPULMONARY EFFECTS OF DIGITALIS

The effects of digoxin and acetylstrophanthidin on pulmonary resistance were measured in dogs. Each glycoside increased pulmonary resistance. This response was not modified by vagotomy or by administration of atropine. Further, the decrease in compliance accompanying the increase in resistance was independent of changes in pulmonary blood flow since the response could still be elicited in dogs studied during right heart bypass. During right heart bypass, acetylstrophanthidin caused variable effects on pulmonary vascular resistance. The glycoside-induced increase in pulmonary resistance was probably a direct effect of the drug on bronchial smooth muscle. The potential clinical importance of these observations in patients with cor pulmonale is obvious. (Marco, V., Park, C. D., and Aviado, D. M.: *Bronchopulmonary Effects of Digitalis in the Anesthetized Dog*, *Dis. Chest* 54: 437 (Nov.) 1968.)

N-ACETYLCYSTEINE IN BRONCHITIS

The therapeutic efficacy of nebulized N-acetylcysteine (Mucomyst) combined with racemic epinephrine was compared with no therapy and with treatment with nebulized saline solution plus racemic epinephrine. In a seven-week study of ten patients with chronic obstructive bronchitis, the N-acetylcysteine-epinephrine combination was found to be effective in thinning sputum. In contrast, the saline-epinephrine combination was found to result in thicker sputum. Neither the N-acetylcysteine-epinephrine nor the saline-epinephrine combination produced an observable change in chest x-ray, spirometric measurements or sputum volume. The addition of racemic epi-

nephrine appeared to prevent the bronchial obstruction previously observed with N-acetylcysteine alone. Whenever N-acetylcysteine is administered, a bronchodilator should be nebulized with it, provided there is no clear contraindication to its use. (Kory, R. C., Hirsch, S. R., and Giraldo, J.: *Nebulization of N-Acetylcysteine Combined with a Bronchodilator in Patients with Chronic Bronchitis*, *Dis. Chest* 54: 504 (Dec.) 1968.)

LARYNGOTRACHEAL DAMAGE

Laryngotracheal damage after prolonged retention of orotracheal tubes (one to ten days) was reviewed in 116 unselected adult patients admitted to an intensive care unit. Among the 59 survivors, all patients who had the tube in place for more than 48 hours had difficulty taking oral fluids for several hours after extubation. In two of five survivors who had had the tube in place for more than 72 hours, hoarseness (two patients) and aspiration (one patient) were irreversible. In 27 of 57 patients who died, the larynges and tracheas were examined and scored postmortem for lesions. Scores increased with duration of intubation. Retention of tracheal tubes for less than 72 hours was rarely followed by serious lesions. Six of seven patients who had had the tube in place for more than 72 hours had high scores. (Hedden, M., and others: *Laryngotracheal Damage after Prolonged Use of Orotracheal Tubes in Adults*, *J.A.M.A.* 207: 703 (Jan.) 1969.)

FLUID-LOGIC VENTILATOR

The coming of age of "fluidics" (fluid amplifiers, fluid logic) has resulted in the application of this new technology to the construction of mechanical ventilators. The most sophisticated fluidic apparatus presently available weighs less than 5 kg and is 6 x 14 x 24 cm in size. Basically, it consists of six fluid-logic cells which permit tidal volume and respiratory frequency to be adjusted independently. The unit is driven by compressed gas, and only 500 ml/min in excess of the desired minute volume are consumed during operation. This unit allows for humidification, adjustment of inspired oxygen concentration, and monitoring of expired volume and airway pressure. Tested