

*Valve Replacement or Repair in Man, J. Clin. Invest. 44: 406 (Mar.) 1965.*)

**PULMONARY SURFACTANT** Current evidence indicates that the surface tension of the alveolar lining varies with change in area. The alveoli presumably do not collapse at the end of expiration because of the low surface tension of pulmonary surfactant. The prediction is made that if surface tension is high due to an abnormal surface or if the distending pressure is low, focal atelectasis can be expected. Occasional increase in surface area occurs normally with a deep breath. This variation in respiration apparently is necessary to maintain normal function of pulmonary surfactant. Continued shallow breathing with a low distending pressure leads to damage of the quality of pulmonary surfactant with the eventual result of atelectasis. This atelectasis is not due to airway collapse and does not need to follow the distribution of a bronchus. (*Tierney, D. F.: Pulmonary Surfactant in Health and Disease, Dis. Chest 47: 247 (Mar.) 1965.*)

**ACETYLCYSTEINE** Clinical response of 16 children with cystic fibrosis treated with acetylcysteine aerosol as measured by changes in vital capacity, blood pH  $P_{CO_2}$ , and oxygen saturation indicated that the most severe group had only a short initial response. There was no significant alteration in the basic disease process. A more beneficial response was demonstrated in the less severe group in which a better pulmonary status of the patients was maintained. (*Stamm, S. J., and Doctor, J.: Clinical Evaluation of Acetylcysteine as a Mucolytic Agent in Cystic Fibrosis, Dis. Chest, 47: 414 (Apr.) 1965.*)

**PULMONARY EDEMA** Pulmonary edema was induced by intravenous infusion of dextran in anesthetized dogs. Surface tension properties were measured on saline extracts of lungs. Pressure-volume relations were determined in excised lobes and compared with normal controls. Dark atelectatic portions of edematous lungs showed significantly increased maximal and minimal surface tension and significantly decreased extract stability index. When edema was induced in degassed, nonventilated lung

and no foaming occurred, surface properties were abnormal, but less so than in lung permitted to foam. Edematous lung lobes showed a significantly reduced expansion index relative to normal lobes. Pulmonary edema leads to regional impairment of pulmonary surface activity, associated with premature alveolar closure. The mechanism of altered surface activity was not explained fully. Foaming was an important, but not essential, factor. (*Said, S. I., and others: Pulmonary Surface Activity in Induced Pulmonary Edema, J. Clin. Invest. 44: 458 (Mar.) 1965.*)

**COLLATERAL VENTILATION** Collateral ventilation, the passage of respired gases between contiguous segments within a lung lobe, is increased when the tidal volume is increased and the respiratory rate slowed. Histamine reduced collateral ventilation. Serotonin given intravenously produced no changes. Acute surgical ligation of the pulmonary artery branch to the lobe under study sharply reduced collateral ventilation. Acute surgical occlusion of the lobar pulmonary vein reduced collateral ventilation slowly and progressively, with rapid reversal when the occlusion was released. (*Call, E. P., and others: Some Physiologic and Pharmacologic Aspects of Collateral Ventilation, J. Thor. Cardio. Surg. 49: 1015 (June) 1965.*)

**EMPHYSEMA** Resection or surgical obliteration of large emphysematous bullae affords relief in a high percentage of patients. There must be strict criteria for the choosing of surgical candidates. A large stationary bulla of at least one-third the size of the hemithorax, or an expanding bulla accompanied by increasing dyspnea are the most common indications. Preoperative regimen includes seven days of expectorant therapy and intermittent positive pressure breathing treatments. The most important and informative preoperative procedure is a pulmonary angiograph. (*Joannides, M.: Chronic Obstructive Emphysema, J.A.M.A. 192: 365 (May 3) 1965.*)

**PROLONGED APNEA** A 70 year old man with jaundice and choledochal carcinoma underwent uneventful ether anesthesia with succinylcholine 160 mg. and *d*-tubocurarine 9 mg.