

mercury. As progressive disturbance in pulmonary function sets in, the arterial oxygen tension falls. Not until the tension falls well below 100 mm. of mercury does the saturation fall below a normal value of 98 per cent. At this time, atelectasis of advanced degree may be present but undetectable by physical examination or roentgen-ray. Arterial oxygen tension gives considerably more information about the state of the lungs than oxygen saturation. Frequent determinations of the arterial oxygen tension, while the patient breathes 100 per cent oxygen, provides the most sensitive index for early detection of intrapulmonary shunts from atelectasis, interstitial edema, etc. (*Pontoppidan, H.: Prolonged Artificial Ventilation: A Quantitative Approach, Postgrad. Med. 37: 576 (May) 1965.*)

LUNGS IN CARDIAC DISEASE Several aspects of mechanics of breathing, pulmonary gas exchange and subdivisions of lung volume were studied in patients with severe acquired valvular cardiac disease before and after cardiac surgery. The majority of patients had insertions of prosthetic heart valves. Operation produced no significant change in vital capacity, functional residual capacity, residual volume or total lung capacity. Maximum voluntary ventilation and forced expiratory volume also exhibited no change. There was no abnormality detectible in intrapulmonary gas mixing, either before or after operation. Mean arterial oxygen tension was low and mean alveolar-arterial oxygen tension gradient was high. These values, as well as those for calculated shunt, were not significantly changed by cardiac surgery. Findings of the present study may be attributed to structural changes in the lung as a consequence of long standing cardiac disease. (*Weintraub, H. D., and others: Lung Function and Blood Gas Exchange, Before and After Cardiac Surgery, J. Appl. Physiol. 20: 483 (May) 1965.*)

INFARCT PNEUMOTHORAX Pneumothorax occurred in 3 patients with pulmonary infarction on positive pressure respiratory assistance. Liquefactive necrosis with parenchymal dissolution of peripheral pulmonary tissue, which is then subjected to positive intrapulmonary pressure, provides a very logical mech-

anism for sudden rupture of this area of the lung and secondary acute tension pneumothorax. These patients were ventilated by Bird respirators with the use of cuffed tracheostomy tubes and intratracheal pressures from 25 to 45 cm. of water. (*Mundth, E. D., and others: Pneumothorax as a Complication of Pulmonary Infarct in Patients on Positive Pressure Respiratory Assistance, J. Thor. Cardio. Surg. 50: 555 (Oct.) 1965.*)

TRACHEOSTOMY The work of breathing through tracheostomy cannulas of various sizes and through the mouth was investigated in a group of 17 adult patients. Breathing through a cannula of size 7 or 8 on the Jackson scale requires a similar amount of mechanical work as did breathing through the mouth. The work of breathing through a tracheostomy tube by an adult is less than the work of breathing through the mouth only when the diameter of the tube is 10 mm. or larger. (*Garzon, A., and others: Influence of Tracheostomy Cannula Size on Work of Breathing, Ann. Surg. 162: 315 (Aug.) 1965.*)

FLAIL CHEST Four out of 5 patients with extensive chest wall injuries due to high-speed automobile accidents were successfully treated with tracheostomy and positive pressure breathing. In one instance, curarization was also necessary. Positive pressure ventilation, once started, should be continued for at least 14 days to allow the fractures to become stable. *d*-Tubocurarine should be avoided whenever possible, because in the event of mechanical failure it is still possible for the patient to ventilate himself, however inefficiently, until the fault can be corrected. (*Williams, W. G., and Zeitlin, G. L.: Management of Flail Chest, Brit. J. Dis. Chest 59: 15 (Jan.) 1965.*)

ASPIRATION In a study of 3 cases of pulmonary aspiration as a complication of obstetrical anesthesia, the clinical picture was found to consist of dyspnea, cyanosis, tachycardia and shock appearing several hours after the aspiration had occurred. There was an absence of findings upon clinical examination of the chest, but radiographs showed a picture that was indistinguishable from pulmonary edema. The most important therapeutic meas-