

trol animals all died, whereas 18 of 22 hypothermic animals survived. Four patients were treated at body temperatures of 33° to 35° C. for two to three days; three survived, and one died of aspiration of gastric contents. Hypothermia may be a valuable adjuvant in treating this serious disease. (Webs, P. B., and Taheri, S. A.; *Hypothermia in Acute Hemorrhagic Pancreatitis*, *Arch. Surg.*, 85: 817 (Nov.) 1962.)

**MATCH TEST** Success or failure in blowing out a paper match held three inches from a patient's widely opened mouth effects a fairly distinct separation of patients with maximal breathing capacities above or below 40 liters, minute and maximal midexpiratory flow rates above or below 0.6 liters/second. (Olsen, C. R.; *The Match Test*, *Amer. Rev. Resp. Dis.*, 86: 37 (July) 1962.)

#### DIAPHRAGM ELECTROMYOGRAM

Employing the integrated electromyogram of the diaphragm in cats as an index of ventilation, it was revealed that increase in electrical activity of the diaphragm and an increase in tidal volume produced by rebreathing was linearly related. The integrated electromyogram of the diaphragm can thus be employed and an indirect qualitative measure of ventilation in spontaneous breathing with an unobstructed airway. (Katz, R. L., Fink, B. R., and Ngai, S. H.; *Relationship between Electrical Activity of the Diaphragm and Ventilation*, *Proc. Soc. Exp. Biol. Med.*, 110: 792 (Aug.-Sept.) 1962.)

**AIRWAY RESISTANCE** Simultaneous volume changes and total lung resistance to air flow of a tracheal length isolated in the neck with nerve and blood supply intact were measured in dogs. Ventilation with 10 per cent oxygen in nitrogen caused a mean increase of 51 per cent in total lung resistance and a mean decrease of 11 per cent in tracheal volume. These responses were prevented either by cooling the cervical vagosympathetic nerves to block conduction, or by tying the glossopharyngeal nerves. It was concluded that the action of hypoxemia on the airways was due to stimulation of the carotid body chemoreceptors with the efferent pathway in the vagus nerves. Inhalation of 8 per cent

carbon dioxide in air resulted in a mean increase of 54 per cent in total lung resistance and a mean decrease of 13 per cent in tracheal volume. These responses were prevented by cooling the cervical vagosympathetic nerves but not prevented by tying the glossopharyngeal nerves. Carbon dioxide must act somewhere other than the carotid body chemoreceptors. In view of the absence of significant changes in lung compliance or end-expiratory intrapleural pressure throughout these experiments, it is concluded that the responses were due to changes in airway smooth-muscle tone. (Nadel, J. A., and Widdicombe, J. G.; *Effects of Changes in Blood Gas Tension and Carotid Sinus Pressure on Airway Calibre of Dogs*, *J. Physiol.*, 161: 43P (May) 1962.)

**AIRWAY COMPLICATIONS** Thirty-one serious airway problems with three deaths are presented. Causes include facial trauma and facial bone fractures, neoplasms, burns, burn scar contractures, tracheal slough, failure to remove pharyngeal packs, laryngeal edema due to sensitivity to tetracaine spray, early removal of endotracheal tube, and severe damage from liquid ether. Early tracheostomy is recommended, and the complications of tracheostomy are listed. (Gaisford, J. C., and White, W. L.; *Airway Maintenance Complications*, *Arch. Surg.*, 85: 861 (Nov.) 1962.)

**PEDIATRIC TRACHEOTOMY** A statistical review of 294 tracheostomies done in children under 18 years of age is presented. The overall mortality was 20 per cent, with 3.4 per cent of the mortality attributable to the operation or its complications. Forty per cent of all tracheostomies were done on patients less than 2 years of age. Avoidance of tight closure around the tracheostomy, complete hemostasis, the removal of a circular area of cartilage the size of a cross-section of the tracheostomy tube, and general anesthesia after endotracheal intubation has been performed are recommended procedures. High humidity and proper tracheal toilet must be performed for successful tracheotomy. Early removal of the tube once the need for its presence is past is definitely indicated. (Olivier, P., and others; *Tracheotomy in Children*, *New Engl. J. Med.*, 267: 631 (Sept. 27) 1962.)