Literature Briefs

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Literature Briefs were submitted by Drs. R. Boettner, D. R. Buechel, R. B. Clark, J. J. Downes, D. Duncalf, M. I. Gold, F. C. McPartland, D. H. Morrow, J. W. Pender, L. J. Saidman, P. H. Sechzer, A. D. Sessler, M. Soetens and C. J. Wilkinson. Briefs appearing elsewhere in this issue are part of this column.

Circulation

AABB REFERENCE LABORATORIES The American Association of Blood Banks has formed a Reference Laboratory Program consisting of three major services: 1) reference laboratories; 2) a rare-donor file; 3) depots of frozen rare-donor blood. The 25 laboratories are located in centers that have a special interest in blood-group immunology. The functions of the Reference Laboratories are: 1) to assist in resolving difficult serologic problems; 2) to help blood banks locate compatible blood; 3) to report rare donors to the AABB Rare Donor File, located at the Michael Reese Research Foundation Blood Center in Chicago; 4) to collect and ship rare types of blood to the depots for frozen storage. In response to a telephone call or a letter, depending on the urgency of the problem, a laboratory gains access to the Rare Donor File. Certain essential information should be available when the Reference Laboratory is contacted, including the patient's diagnosis and hemoglobin level and whether surgical operation is contemplated. Blood banks having access to very rare donors are understandably hesitant to bleed them unless the need for transfusion is clearly evident. Where the clinical situation is not urgent, a specimen of blood from the patient may be requested. This is always done when frozen blood cells are requested because of the possibility that blood, once thawed and prepared, might turn out to be incompatible and unusable. The basic function of the Rare Donor File is to put the inquiring blood bank in touch with another blood bank that has donors of the type needed. To be certain of preserving a good relationship between the blood bank and its donors, the names and addresses of the rare donors themselves are never released. Most of the time, the Rare Donor File is able to call back with the required information within approximately 30 minutes. More than 4,000 donors are registered, including representatives of almost every one of the known, extremely rare phenotypes. One or two calls are received each week. To remain effective, the program needs continuing support, in the form of increasing referrals of rare donors. The depots of frozen rare blood, part of the AABB program, were organized in 1960 with the cooperation of the Blood Research Laboratory, Chelsea Naval Hospital. With more practical techniques for freezing of erythrocytes and processing of frozen cells for transfusion, an increasing number of other blood banks are now able to function as depots for frozen rare blood. "Rare Donors Need Rare Friends" is the phrase coined by Dr. Tibor J. Greenwalt for the rare-donor identification program. The goal of the AABB program is to make certain there will always be an ample supply of rare blood available for people who need it. (*Grove-Rasmussen, M., and Huestis, D. W.: The Reference Laboratories Program of the American Association of Blood Banks, Transfusion 9: 336 (Nov.) 1969.*)

PHENTOLAMINE (Regitine) abolished or significantly decreased the frequency of ventricular extrasystoles in 25 cardiac patients whether or not the arrhythmias were related to administration of digitalis. It was not effective, however, in treating other arrhythmias, such as A-V blocks, atrial flutter, fibrillation and tachycardia. Potent beta-adrenergic stimulation was evidenced by increased myocardial force, an increase in left ventricular dp/dt, a decrease in left ventricular end-diastolic pressure and volume, and marked clinical improvement in patients with congestive heart failure. Experimental work in rats suggests that this

beta stimulation may be due to increased concentrations of myocardial norepinephrine. *(Gould, L., and others: Treatment of Cardiac Arrhythmias with Phentolamine—Appraisal and Reappraisal of Cardiac Therapy, Amer. Heart J. 78: 189 and 276 (Aug.) 1969.)*

ABSTRACTER'S COMMENT: Phentolamine, an alpha blocker and beta stimulator, joins the beta blockers, quinidine and various local anesthetics as a drug effective in the treatment of ventricular arrhythmias. This suggests that the therapeutic control of arrhythmias is related to something other than stimulation or depression of the autonomic nervous system.

Respiration

HYPOVENTILATION A condition resembling idiopathic alveolar hypoventilation in seven patients with impaired pulmonary function is described. The patients had chronic cor pulmonale, diminished ventilatory responses to inhaled carbon dioxide, carbon dioxide retention disproportionate to the extent of airflow obstruction, and ability to hyperventilate voluntarily and return Pa_{O_2} and Pa_{CO_2} to normal or near-normal levels. These studies suggest that the clinical spectrum of idiopathic alveolar hypoventilation can be extended to include some patients with obstructive and restrictive pulmonary disease and that respiratory insensitivity to carbon dioxide is not uncommon. *(Rhoads, C. G., and Brody, J. S.: Idiopathic Alveolar Hypoventilation: Clinical Spectrum, Ann. Intern. Med. 71: 271 (Aug.) 1969.)*

VENTILATION When pulmonary blood flow is interrupted, deleterious effects on the lungs can be minimized by maintaining alveolar ventilation. It is possible that structural lung changes following cardiac bypass may be modified by maintaining ventilation during interruption of pulmonary circulation. Ventilation is mechanically assisted for three to four hours postoperatively. A readily controllable respiratory alkalosis replaces a mixed acidosis from poor arterial oxygenation. *(Saperstein, W., and Kohari, J.: Pulmonary Ventilation during Open-heart Surgery, Surgery 66: 555 (Sept.) 1969.)*

TENSION PNEUMOTHORAX A 41-year-old woman was admitted following severe trauma which resulted in a skull fracture, patellar injury, trauma to the thorax at the level of the third rib, and a fractured arm. X-ray showed a slight pneumothorax on the right side. While the wounds were being sutured with the patient under local anesthesia, she suddenly became short of breath and sustained a cardiac arrest. After three minutes of extracorporeal cardiac massage and ventilation, the heart resumed normal function. Spontaneous respiration started after ten minutes and was rapid and shallow. Positive-pressure ventilation was extremely difficult. Reintubation did not help and a second cardiac arrest followed 20 minutes after the first. After several fruitless attempts at resuscitation, the possibility of a pneumothorax was considered. A second x-ray showed a bilateral tension pneumothorax, which was treated by needle aspiration. Within a minute, the heart strated beating again and spontaneous respiration resumed. Paradoxical respiration, due to an anterior thoracic flap, was controlled by artificial ventilation. After resuscitation, a third x-ray revealed multiple fractures of the right ribs. The patient left the hospital a few months later completely recovered. The cause of the first cardiac arrest was obscure. It occurred 30 minutes after the injection of procaine (30 ml of 1 per cent). The rapid resumption of cardiac function excluded an extensive pneumothorax at that time. The second arrest was due to a bilateral tension pneumothorax, which may have been caused by artificial ventilation, but probably resulted from trauma to the lung from rib fractures produced during the external cardiac massage. If there are ventilation problems during external cardiac massage, a pneumothorax should be considered. *(Otteni, J. C., and others: Pneumothorax Bilatéral à soupape après Massage Cardiaque Externe, Anesth. Anal. (Paris) 26: 401, 1969.)*

ATELECTASIS In a study of 56 patients undergoing superficial surgical operations and light anesthesia, 12 developed atelectasis in the postoperative period and six of these also inhaled iodized oil fluid on being asked to