

cerebrospinal fluid pressure generally fell as body temperature was reduced. However, the pressure varied depending upon the depth of anesthesia, anoxia, shivering, coughing on the endotracheal tube, and possibly the level of blood pressure. The idea that hypothermia is a practical method for reducing markedly increased intracranial pressure secondary to a space occupying lesion has not been substantiated. (Lemmen, L. J., and Davis, J. S.: *Studies of Cerebrospinal Fluid Pressure During Hypothermia in Intracranial Surgery, Surg. Gynec. & Obst.* 106: 555 (May) 1958.)

HYPOTHERMIA A prompt return to a normal cardiovascular status parallel with the elevation of temperature does not universally accompany rewarming following hypothermia in dogs. The time for readjustment and the mortality become more significant the more prolonged the hypothermia, even though the temperature remains stable. Animals are in a fine state of balance with restoration of normal cardiovascular hemodynamics following rewarming. However, stresses such as anesthesia may be detrimental and should be avoided. The picture of "rewarming shock," following 8 hours of hypothermia under the conditions of these experiments, was an extremely uncommon finding. Prolonged hypothermia must be avoided. The longer the period of cooling, the more complex are the deviations from normal and the more difficult the restoration to a state of normal hemodynamics. At present, there is no unequivocal experimental evidence to abandon the use of hypothermia even though undesirable sequelae and profound physiologic alterations may be expected. (Fedor, E. J., Fisher, B., and Lee, S. H.: *Rewarming Following Hypothermia of Two to Twelve Hours: I. Cardiovascular Effects, Ann. Surg.* 147: 515 (April) 1958.)

HYPOTHERMIA The response to overload of the heart and its arrest at low temperature were studied in thirteen experiments on heart-lung preparations in dogs. When the blood temperature was lowered to 32-35 C., the heart, given an increase in the influx of venous blood, showed an increase in the output of blood.

At a temperature of 30 C. the frequency of heart contractions declined markedly and the amplitude of fluctuation of the arterial blood pressure increased. The total output of blood from the heart per unit of time remained constant. At a temperature of about 25 C. the frequency of heart contractions decreased to 60-70/minute, a frequency quite adequate for maintaining the blood flow. When the blood reached a temperature of 22-23 C. the heart became dilated and its insufficiency became manifest, thus leading to gradual increase of venous pressure and to further dilatation of the heart. The functional inability of the heart to pump over the total quantity of the inflowing blood progressed with further lowering in the temperature and sometimes the heart stopped at 17-23 C. Parallel with the lowering of the temperature and reduction in the frequency of heart contractions, marked changes in the electrocardiogram appeared, particularly concerning the ventricular complex. The maximum electrocardiographic changes were seen at the very lowest temperatures of the heart. (Starkor, P. M.: *Response to Overload of Heart and Cardiac Arrest at Low Temperatures, Eksp. Khir.* 4: 1956.)

HYPOTHERMIA In two patients aged 19 and 4 years, a severe, not understood complication of narcosis during hypothermia arose—a massive hemorrhage into the lung parenchyma. The onset of hemorrhage was connected with introduction of the intubation tube into the lumen of the right bronchus and complete blocking of the left lung. (Darabinyan, T. M., and Krymskii, L. D.: *Massive Hemorrhage into Lung as Complication of Narcosis by Intubation During Hypothermia, Vestn. Khir.* 78: 123, 1957.)

ACCIDENTAL HYPOTHERMIA Four patients in whom accidental hypothermia developed with rectal temperatures of 80 to 90 F. are reported. The treatment of accidental hypothermia varies with its duration, and may call for either rapid or slow rewarming. In acute hypothermia of rapid onset and less than 12 hours duration, rapid rewarming is recommended. In the chronic hypothermia of slower onset

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