

should be chosen for maximum protection of the brain during general anesthesia for carotid endarterectomy, and these appear to be systemic hypertension and hyperventilation with resultant hypocarbia. (Ehrenfeld, W. K., and others: *Effect of CO₂ and Systemic Hypertension on Downstream Cerebral Artery Pressure during Carotid Endarterectomy, Surgery* 67: 87 (Jan.) 1970.)

VENOUS CATHETERS AND INFECTION

A prospective study was done to determine the factors of potential importance in reducing the local and systemic infection rates associated with the use of polyethylene venous catheters. During the study period, cultures were taken of material on the surfaces of all catheters removed and the patients were evaluated for phlebitis or infection. Cultures were positive on 26 (5.2 per cent) of 505 of the catheters removed. *Staphylococcus albus* was found on 16 of the 26 catheters and *Staphylococcus aureus* was found on eight of the remaining ten. Two cases (0.4 per cent) of catheter-induced bacteremia occurred, both with *S. aureus*. The infection rate, defined by catheter cultures, was much lower than that reported in the only similar study known to be available. Adherence to a strict set of regulations for catheter maintenance was the most probable explanation for the comparatively low infection rate. (Corso, J. A., and others: *Maintenance of Venous Polyethylene Catheters to Reduce Risk of Infection, J.A.M.A.* 210: 2075 (Dec.) 1969.)

HEMORRHAGIC SHOCK Respiratory and circulatory changes during different degrees of head-up tilt and head-down tilt before and after induction of hemorrhagic shock were studied in anesthetized dogs. Severe circulatory inadequacy and increased oxygen consumption occurred during head-up tilt of dogs in shock. There was no objective improvement in the cardiorespiratory status of dogs in shock subjected to the head-down tilt. Hypotension and tachycardia persisted, and there were no changes in cardiac contractile force, respiration or oxygen consumption. This confirms reports of previous workers that there is little objective evidence that the head-

down position is beneficial in shock. The head-down position may compromise respiration by reducing lung volumes. (Liu, C. T., and others: *Circulatory and Respiratory Responses to Postural Changes in the Hemorrhagic Dog, J. Appl. Physiol.* 27: 460 (Oct.) 1969.)

AUTOMATED BLOOD-GROUPING

More than 35,000 blood samples were typed for ABO and Rh grouping by both automatic and manual methods. The automatic data contained essentially no discrepancies in ABO and less than 0.1 per cent error in Rh blood groups. Mechanical difficulties with the automated system were rare. Obtaining samples was the most common difficulty in mass operation. When cost, number of tests, and time factors are considered, the automatic system provides a useful and accurate method for mass blood grouping. However, these particular advantages must be weighed by each blood bank in terms of its specific needs, samples available, and cost involved. (Shields, C. E., and others: *Evaluation of Automated Multichannel Blood-grouping Apparatus. I. Use in Mass Blood Grouping, Including Comparison with "Card" Typing Methods, Transfusion* 9: 348 (Nov.) 1969.)

HYPOVOLEMIA Low-molecular-weight dextran (LMWD) was given to 12 patients in clinical shock from acute myocardial infarction. The initial central venous pressures (CVP) were lower than 7 mm Hg in ten of the 12. Five of the ten (Group A) showed marked improvement after LMWD and survived. The remaining five (Group B) failed to show improvement and died. Group A differed from Group B in that they were younger (48 vs. 69 years), had fewer prior infarcts (0 vs. 2), and the location of infarcts (predominantly inferior vs. anterior) were different. CVP increased one mm Hg/100 ml dextran in Group A, and 1.9 mm Hg/100 ml dextran in Group B. Hypovolemia must be considered in all patients in whom shock develops following myocardial infarction. If CVP is low, volume expansion should be attempted cautiously. Increases in arterial pressure and cardiac index indicate a good re-