

CNS Function

INTRACRANIAL PRESSURE FOLLOWING HEAD INJURY Ventricular fluid pressure (VFP) and systemic arterial pressure (SAP) were monitored continuously in 37 patients following severe head injuries. VFP was measured from a polyethylene catheter inserted into the right lateral ventricle via a frontal burr hole and attached to a transducer. SAP was measured directly from a cannulated peripheral artery. Three groups of patients were studied: I, patients with VFP below 20 mm Hg (normal pressure); II, patients with VFP between 20 and 40 mm Hg; III, patients with VFP above 40 mm Hg. Five of nine patients in Group I died, and although they had the clinical syndrome commonly ascribed to primary brain-stem injury, none was found at autopsy. One of 12 patients in Group III has made a satisfactory recovery; three are still in coma and eight have died. Although the relationship between SAP and VFP is considered critical for maintenance of adequate cerebral blood flow, there was no constant relationship between the two; in fact, the response of SAP to a rise in VFP was unpredictable, implying a lack of reliability of blood pressure measurements as indicators of rising VFP. Lowering of VFP was attempted with osmotic diuresis, hyperventilation, or withdrawal of ventricular CSF. The response to osmotic diuresis (mannitol) varied considerably and was less successful when the elevation was chronic or pronounced. Hyperventilation and removal of ventricular CSF proved very effective. The latter proved to be the more reliable of the two. The authors conclude that simultaneous clinical monitoring of VFP and SAP is mandatory for appropriate therapy of elevated intracranial pressure and evaluation of specific therapy. (Johnston, I. H., et al.: *Intracranial Pressure Changes Following Head Injury*, *Lancet* 2: 433-436, 1970.)

Coagulation

DISSEMINATED INTRAVASCULAR COAGULATION (DIC) IN SEPTICEMIA This study analyzed the coagulation defects in 26 children (age range 3 days to

9 years) with septic shock, a combination of symptoms usually associated with mortality ranging from 50 to 80 per cent. DIC, or consumption coagulopathy, is known to occur in septicemia, with a singular predilection for association with hypotension or shock. It can be diagnosed by finding a combination of thrombocytopenia and reduced levels of coagulation factors II, V, and VIII, as well as fibrinogen, and fibrinolytic split products (FSP). With these criteria DIC was diagnosed in 42 per cent of the hypotensive patients on admission or at the onset of the hypotension. The most common infecting organisms were gram-negative, being isolated in 12 of the 26 patients. Therapy consisted of antibiotics, intravenous fluids, plasma expanders, whole blood, and heparin, 100 units/kg body weight intravenously every four hours. Mortality in 24 patients treated with heparin was 58 per cent. The presence of frank hypofibrinogenemia (average values below 100 mg/100 ml) was associated with very high mortality (78 per cent). (Corrigan, J. J., Jr., and Jordan, C. M.: *Heparin Therapy in Septicemia with Disseminated Intravascular Coagulation*, *New Eng. J. Med.* 283: 778-782, 1970.) EDITOR'S COMMENT: Despite the life-threatening situation, no comment was made regarding respiratory status or the possible contribution of persistent hypoxemia to mortality. Undoubtedly this is prompted by the common impression that an otherwise-normal child can tolerate a hypoxemic insult, even when superimposed on overwhelming sepsis. DIC plays havoc with the microcirculation, and the "shock" organ most often involved is the lung. This may explain the acute deterioration in gas exchange frequently found in these patients and the importance of early diagnosis and early intervention with ventilator support.

Endocrine Function

GROWTH HORMONE SECRETION AND ANESTHESIA Five healthy volunteers were subjected to seven hours of continuous endotracheal nitrous oxide-halothane anesthesia, during which serum growth hormone