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CNS Function

EPIDURAL PRESSURE IN NEUROSURGERY Supratentorial epidural pressure (EDP) was recorded continuously for as long as 29 days in patients undergoing posterior fossa surgery, by implanting a miniature pressure transducer via a frontoparietal burrhole. A change from supine to the sitting position lowered EDP markedly; flexing the neck re-elevated it. Small adjustments of neck flexion usually lowered EDP again without compromising the surgical approach. In the sitting position, extreme hip flexion sharply increased both EDP and central venous pressure (CVP). The prone position also elevated both EDP and CVP. Both values returned toward normal, however, with proper support under the shoulders and pelvis and proper adjustment of neck flexion. Ventricular drainage acutely lowered EDP in all patients who had not previously had ventriculovenous shunts, but this effect appeared to be transient. In patients with increased intracranial pressure, craniectomy had no significant decompressive effect, but splitting the dura promptly lowered EDP. Hyperventilation lowered EDP. Data for acid–base balance or airway pressures used during ventilation were not reported. (*Nornes, H., and Magnaes, B.: Supratentorial Epidural Pressure Recorded during Posterior Fossa Surgery, J. Neurosurg. 35:541–549, 1971.*) ABSTRACTER'S COMMENT: The authors show that EDP and ventricular fluid pressure correlate linearly and closely. Ventricular pressure cannot be monitored during posterior fossa surgery because of the need for ventricular decompression. This study, in addition to presenting new instrumentation (the miniature pressure transducer), provides the basis for direct measurement of what until now has been clinically estimated, the "relaxation of the brain" during posterior fossa surgery. The transducer, being extradural, can be maintained in place postoperatively with little fear of infection, and provides an early warning of an increase in intracranial pressure.