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Cerebellar Infarction due to Embolization during Tumor Resection

To the Editor:—We report a case of cerebellar infarction due to embolization during tumor resection. The patient was a 65-year-old white woman with a pulmonary nodule in the left lower lobe. During left lower lobectomy, the systolic blood pressure fell from 110 mmHg to 85 mmHg for approximately 20 min following induction. The surgery was accomplished over 2 h without further cardiovascular complications. Postoperatively, the patient remained comatose with a left hemiplegia. An EEG and CT brain scan revealed an ischemic infarction of the entire left cerebellar hemisphere. A consulting neurologist concluded that the infarction probably occurred as a result of the intraoperative hypotension. The patient died 6 days after surgery without regaining consciousness. At postmortem examination, a severe bilateral bronchopneumonia was found. Sections of the left posterior inferior cerebellar artery revealed an organizing thromboembolus mixed with malignant cells resembling those of the primary lung tumor. There were no other lesions found in the anterior or posterior cerebral circulation. Greene (1974)¹ reviewed a series of tumor emboli and concluded that tumor material enters the pulmonary veins by direct erosion or during clamping of the veins at re-

section. The tumor is extruded into the veins under the clamp, then enters the arterial tree via the left atrium. We believe our patient suffered the embolus during lobe resection and that the relatively minor hypotension was an unrelated event. Absent severe, prolonged hypotension, an intraoperative stroke should not be diagnosed a complication of anesthesia without a consideration of other causes of infarction. Our case illustrates one such cause, cerebral embolization.

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Dural Diffusion of Local Anesthetics

To the Editor:—The respiratory acidosis associated with pregnancy may well, as suggested by Sosis and Bodner,¹ increase the amount of local anesthetic existing in the free base form in the epidural space. This will not, however, affect either the rate of diffusion of local anesthetic across the dura into the subarachnoid space or the amount of anesthetic that diffuses across the dura, as they further suggest. Diffusion of drugs across the human dura is unrelated to pK_a and, therefore, unrelated to pH .² The dura is not like the blood-brain barrier. Diffusion of drugs across the dura is also, for example, unrelated to lipid solubility,² whereas both lipid solubility and the degree of ionization are major determinants of the rate at which drugs cross the blood-brain barrier. The increase in the amount of local anesthetic existing in the free base form because of respiratory alkalosis associated with pregnancy may be related, however, to the increase in sensitivity of mammalian nerve fibers observed during pregnancy.³

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