shortened the absolute refractory period slightly but increased the diastolic threshold by 30 per cent. When administered during epinephrine infusion, lidocaine returned the duration of absolute refractoriness and the diastolic threshold to normal. Acute digitalization of the nonfailing heart produced a shortening of the refractory period, the absolute and relative periods changing in about the same proportion. The threshold during diastole was diminished by 30 per cent. The institution of cardiopulmonary bypass did not alter excitability. *Conclusions:* Current studies are centered on the effects of various depths of halothane anesthesia on ventricular excitability. Preliminary observations indicate that the diastolic threshold is markedly reduced (excitability increased) in lightly anesthetized patients.

Prolonged Apnea Following Succinylcholine Administration in Cancer Patients Receiving AB-132. RICHARD I. H. WANG, M.D., and CHARLES A. ROSS, M.D., *Roswell Park Memorial Institute, Buffalo, New York, and New York State Department of Health.* One of the postanesthetic complications that confronts the anesthesiologist is the failure of restoration of spontaneous breathing. The differential diagnosis of the causes of apnea rests on the anesthesiologist. In this report two cases of prolonged apnea will be presented. *Case Reports:* One patient with carcinoma of the lung was given intravenous thiopental anesthesia, 80 mg. of succinylcholine and hyperventilation. Bronchoscopy was performed under an apneic state. He failed to have spontaneous breathing for seven hours. Within 30 hours following bronchoscopy he had numerous episodes of hypoventilation, bradycardia and hypertension. He expired on the second postoperative day in spite of extensive supportive measures. Another patient with carcinoma of the urinary bladder was given intravenous thiopental and $N_2O + O_2$ anesthesia for cystoscopy. During bimanual abdominorectal examination muscle relaxation was required and he was given 20 mg. of succinylcholine intravenously. Spontaneous breathing did not return for an hour. Fortunately, subsequent postoperative recovery was uneventful. *Discussion:* In both cases the probable cause for the prolonged apnea was believed to be low blood cholinesterase levels. Since both patients had liver function tests within normal limits, the reduced cholinesterase activities were likely the result of medication that they received prior to surgery. In reviewing their records it was found that they received a course of a cancer chemotherapeutic agent, AB-132 or ethyl-N-(bis(2,2-dimethylethylenimido)phosphoro) carbamate. In order to evaluate the effect of AB-132 on blood cholinesterase levels, the cholinesterase levels in plasma and red blood cells in four other cancer patients were measured before, during, and after a course of AB-132 therapy. It was found that following the intravenous administration of a single dose 0.5 g. AB-132, the plasma pseudo-cholinesterase level dropped markedly without significant decrease in the true cholinesterase activities. On repeated daily administration of the drug both the true and pseudo-cholinesterase activities decreased to as little as 20 per cent of their initial levels. AB-132 is a potent inhibitor of cholinesterase and resembles diisopropylpyrophosphate in that the inhibition is irreversible and long acting. The true cholinesterase activities failed to return to normal until 30 to 40 days after the cessation of the AB-132 therapy. *Conclusion:* From these studies, it is concluded that succinylcholine should not be given during anesthesia to patients receiving this cancer chemotherapeutic agent, AB-132. Caution should be exercised in administering muscle relaxants during anesthesia to any patient receiving new drugs which may potentiate and prolong the period of apnea. The determination of blood cholinesterase levels in these patients before surgery should be encouraged.

Effects of General Anesthetics on Tissue Oxygen "Tensions." HOWARD L. ZAUDER, M.D., PH.D., LOUIS S. MASSA, M.D., and LOUIS R. ORKIN, M.D., *Department of Anesthesiology, Albert Einstein College of Medicine, New York, New York.* The influence of some anesthetics on oxygen "tensions" of superficial tissues in man has been determined by Greene *et al.* (Anesthesiology *20:* 830, 1959). No information is available, however, on the effects of these drugs on the deeper, less accessible tissues. It was thought of interest, therefore, to observe the effects of com-