

Literature Briefs

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Literature Briefs were submitted by Drs. C. M. Ballinger, R. Boettner, W. Boyd, H. Cascorbi, R. B. Clark, M. I. Cold, F. C. McPartland, D. H. Morrow, J. W. Pender, H. Roc, L. J. Saidman, and P. Sechzer. Briefs appearing elsewhere in this issue are part of this column.

Circulation

AIR AND ARRHYTHMIAS Seventeen patients with pulmonary disease were monitored with an electrocardiogram during tracheal suctioning after they had breathed either air or pure oxygen. Eight had tracheostomies, three had orotracheal tubes, and six had no intubation. The incidence of transient cardiac arrhythmias during tracheal suctioning was significant (35 per cent) during breathing of air. Arrhythmias included frequent atrial premature contractions, nodal tachycardia, transient sinus arrest, incomplete heart block, and frequent premature ventricular contractions. After the patient had breathed oxygen for brief periods, tracheal suctioning no longer precipitated arrhythmias. (*Shim, C., and others: Cardiac Arrhythmias Resulting from Tracheal Suctioning, Ann. Int. Med. 71: 1149 (Dec.) 1969.*)

ELECTRICAL DEFIBRILLATION Direct current from a capacitor discharge is capable of effecting defibrillation with expenditure of less total energy than a sinusoidal alternating current. An important factor in defibrillation is the flow of an adequate current onto the myocardium for a finite interval. In the present study, internal defibrillation of the dog heart was performed using different combinations of capacitance and voltage. Defibrillation was successful at capacitances of one to 600 microfarads and voltages of 90 to 1,500 volts. Minimal energy requirement for defibrillation occurred at a current flow about 0.1 msec in duration; minimum peak current

values occurred at about 3 msec. Defibrillation could not be accomplished at durations of current flow shorter than 0.018 msec or longer than 27 msec. Cardiac damage was related to high peak current flows and not to high energy levels. (*Tacker, W. A., Jr., and others: Optimum Current Duration for Capacitor-discharge Defibrillation of Canine Ventricles, J. Appl. Physiol. 27: 480 (Oct.) 1969.*)

IDIOVENTRICULAR TACHYCARDIA

The effects of various concentrations of halothane or cyclopropane were evaluated in nine of 14 dogs in which idioventricular tachycardia occurred following ligation of the left anterior descending coronary artery. In each dog, ventricular ectopic activity was suppressed when identical or longer P-P intervals were observed in the ECC. During administration of halothane, the rate of the ventricular ectopic pacemaker slowed as the sinus rate slowed. This observation suggests that halothane is capable of depressing spontaneous phase-four depolarization in the idioventricular pacemaker or altering conduction around the idioventricular pacemaker, producing an "exit block." However, since supraventricular beats were conducted without any significant increase in QRS duration during halothane, it seems more likely that halothane is capable of suppressing spontaneous depolarization of a ventricular pacemaker accelerated by myocardial ischemia. (*Logic, J. R., Morrow, D. H., and Katz, R. N.: Idioventricular Tachycardia Complicating Experimental Myocardial Infarction, Dis. Chest 56: 477 (Dec.) 1969.*)

HYPOXEMIA AND MYOCARDIAL INFARCTION

Arterial blood gases were measured in 61 patients admitted to the coronary care unit. The patients were divided into groups with: coronary insufficiency (Group A); myocardial infarction without failure (Group B); myocardial infarction with failure