

brain that certain electro-stimuli appear to aid in the elimination of barbiturates within a very short period of time. . . . This observation suggested the use of selected electro-stimulation in the treatment of patients suffering from over-dosage with barbiturates. . . . Mrs. A. B., aged 49, married, no children. . . . On October 2, the husband found his wife lying on the floor of his home at approximately 11 a. m. She told her husband she had taken 'too many sleeping pills by mistake.' Within a short time the patient was unconscious and was removed to a general hospital. . . . The patient was seen by one of us (J. J. G.) at 2 p. m. She was in deep coma; her pupils were contracted and did not respond to light; corneal reflexes absent; deep reflex absent; positive Babinski on the right side; breathing shallow; pulse imperceptible; blood pressure 88/4. Brain stimulation was commenced at 2.24 p. m. The electrodes were placed immediately above the ears and a modulated electric stimulus was applied. . . . The electric stimulus flowed continuously until approximately 5 p. m., the electrodes being in the same position all during this time. It was noticed at this time that the patient's condition was gradually worsening and the treatment was interrupted for a few minutes to enable her to receive the last rites of her church. At this time blood pressure had dropped below 80 and the original picture had re-established itself. Electro-stimulation was commenced again, but this time the electrodes were moved from place to place as it appeared evident that the patient had developed a tolerance to stimulation over the parietal regions and was not responding. Her condition showed dramatic improvement with the changed positions of the electrodes. . . .

"Motor response reappeared at 5.15 p. m. and at 9.30 p. m. tendon reflexes

returned in rapid succession. At 11.30 p. m. she was fully conscious and able to answer questions without confusion. . . . Examination of the patient the following day revealed that despite such prolonged brain stimulation with electricity no confusion or memory loss were noted. It was later learned that the patient had taken 29 1½ gr. capsules of pentobarbital sodium and that she had planned suicide for some weeks. . . . It is believed by us that this form of treatment might be of great value in the treatment of coma due to morphine, alcohol or insulin (the so-called irreversible coma)."

A. A.

DU BOUCHET, N., AND LATSCHA, B.: *Electrocardiograms during Spinal Anesthesia in Cardiacs*. La Semaine des Hôpitaux de Paris. Vol. 28, No. 13, Feb. 18, 1952.

"The prompt improvement of the signs and symptoms of pulmonary edema of acute cardiac decompensation after spinal anesthesia (see Sarnoff & Farr, *Anesthesiology*, p. 69, 1944, E. G. B.) caused the authors to use spinal block for major surgery in cardiacs. They discuss the well known objections to spinal anesthesia in this type of patient and feel that in carefully selected patients spinal anesthesia is the anesthesia of choice. The paper covers 20 patients, all decompensated, 15 undergoing ligation of the inferior vena cava below the junction with the renal veins, 5 being submitted to major abdominal surgery. Electrocardiograms were taken before as well as during and 20 minutes after the administration of spinal anesthesia. Sise's technique was used: Injection at L₂ of 10 mg. of pontocaine (1 cc.) with equal volumes of 10% glucose and spinal fluid, and a level from D 7 to D 4 was established. Oxygen was given throughout, and 50 mg. of ephedrine was injected subcu-

taneously before the subarachnoid injection was done.

"The pertinent EKG findings were:

- (a) Before subarachnoid block:
 - Bilateral ventricular hypertrophy 10 (1 with bundle-branch block)
 - Left ventricular hypertrophy 5 (1 with bundle-branch block)
 - Right ventricular hypertrophy 5
 - Sinus tachycardia 7
 - Auricular fibrillation 11
 - Nodal rhythm 2
- (b) 18 patients receiving ephedrine showed an increase in cardiac rate which lasted up to 30 minutes. The 2 patients without ephedrine showed no change. All showed a slowing of the rate once the spinal block took effect.
- (c) 2 patients with nodal rhythm reverted to sinus rhythm after i.v. injection of 100 mg. of procaine.
- (d) No change in the occurrence of ventricular extrasystoles in 3 patients.
- (e) One QRS complex showed a left axis deviation which persisted as long as the clinical improvement that followed the subarachnoid block. All QRS complexes increased 0.02 to 0.04 second under spinal.
- (f) 12 negative T waves became positive under spinal block.

"Studies are in progress to correlate pulmonary artery pressure, minute volume and arterial oxygen with the striking clinical improvement of pulmonary edema, tachycardia, urinary output, cyanosis and dyspnea under spinal anesthesia. Pulmonary artery pressure has been seen to drop 25 and 42 mm. in 2 cases, the minute volume to increase up to $1\frac{1}{2}$ ltr.

"The authors feel strongly that spinal anesthesia has its definite place in medical and surgical treatment of the decompensated cardiac."

E. G. B.

CULLEN, S. C.: *Anesthesiology and its Relation to the Basic Sciences*. Journal Lancet 71: 109-114 (March) 1951.

"In a recent comprehensive review of the theories of narcosis and anesthesia, it is made evident that the changes occurring in cells, enzyme systems, and homeostatic mechanisms during the state known as anesthesia do not present a sufficiently consistent pattern to permit a definitive analysis of the process of anesthesia. . . . As a consequence of this ignorance regarding the fundamental nature of narcosis, the anesthesiologist practices his specialty with a high degree of empiricism. . . . Not knowing the basic action of the anesthetic drug employed, it is imperative that the anesthetist make critical and constant observations of the patient's reactions to the drug. . . . The anesthetist cannot help but be interested in any development in the basic sciences which will help him better to understand the phenomena encountered in his daily practice. . . .

"Oximetry has reached a point at which it is a useful clinical and research tool. . . . Catheterization of blood vessels including the various chambers of the heart in the intact animal or human being has led to the accumulation of much interesting data and a different understanding of the patterns of blood flow, tensions, and tissue oxygen supply. . . . Methods for the assistance of artificial maintenance of ventilation have been devised which according to current standards improve the oxygenation of the blood, the elimination of carbon dioxide, and minimize the interference with circulation. . . . Because the anesthetist is intimately concerned with the problem of ventilation and is obligated to provide adequate oxygenation and carbon dioxide elimination, there is need for him to have a reasonably accurate assessment of the patient's ventilatory