

ishes the sinus reflex. Simultaneous bilateral anesthetization of the region of the carotid sinus is not advisable because of the possible bilateral laryngeal palsy that might accompany it." 18 references.

J. C. M. C.

MCCALL, J. W., AND FREEMAN, M. S.: *Postoperative Atelectasis: Presentation of Four Cases*. Ohio State M. J. 38: 546-550 (June) 1942.

"The predominating postoperative pulmonary complication is atelectasis, which may involve a portion of a lobe, a whole lobe, or a whole lung. Early recognition is important for two reasons: (a) it allows an earlier institution of therapy and facilitates a more prompt return of the atelectatic lobe to normal; (b) it prevents the more dreaded postoperative pneumonia which may occur in atelectasis of longer duration. Bronchial obstruction is the most important factor in producing atelectasis. Its removal can be achieved most satisfactorily by bronchoscopic aspiration. Patients receive almost instantaneous relief." 11 references.

J. C. M. C.

ANDERSON, B. M., AND ESSEX, H. E.: *Studies on Barbiturates, Especially Their Cyclic Disappearance from and Reappearance in the Blood Following Intravenous Injection*. Proc. Staff Meet., Mayo Clin. 17: 337-339 (June 3) 1942.

"In 1939 Delmonico reported a modification of the Koppanyi method of analyzing tissues for barbiturates which he and Osterberg had developed. He obtained recoveries of from 93 to 110 per cent of barbiturate added to blood in vitro. Employing this method for extraction of barbiturates from the blood in intact dogs and the unmodified Koppanyi method for analysis of minced dog and rabbit tissues Delmonico made the following observations.

"'In vitro, the liver exerts the most destructive action on nembutal (pentobarbital sodium) and sodium amyral and brain tissue the least. Kidney and muscle tissue are next to liver in the order named.' Essentially the same results were obtained from experiments made in vivo. 'Following the injection of dogs intravenously with anesthetic doses of nembutal, pentothal sodium and sodium amyral, during and without ether anesthesia, there was a more or less cyclic disappearance and reappearance, or vice versa in the general circulation of the barbiturate used. The same observation was made in the blood obtained from the venous return of a limb or an organ following intra-arterial injection of nembutal or sodium amyral.' This latter observation is apparently new. We have been unable to learn of any other substance which exhibits such behavior. Studies were made to test this observation further and to determine whether the blood perfused through isolated organs had variations of barbiturate content similar to those observed in blood from the intact dog. Preliminary control experiments with Delmonico's method yielded poor recoveries of barbiturate. Therefore it seemed necessary to seek a substitute method. The procedure reported by Levy of Edinburgh was examined. The procedure was not entirely satisfactory but by minor modifications, especially in the length of the extraction time, which was prolonged to eight hours, we were able to obtain satisfactory recoveries of 80 per cent or more over a wide range of known concentrations of pentobarbital sodium in the blood.

"To check on the observation that the barbiturate appeared in the blood in a cyclic manner, four dogs were given 25 mg. per kilogram of pentobarbital sodium each, in one dose. Samples of blood were withdrawn at fifteen minute intervals and the barbiturate content was determined. The

pentobarbital sodium content of these samples showed essentially the same variations noted by Delmonico. Another group of dogs was given sodium amylal 50 mg. per kilogram and blood samples were taken at fifteen to twenty minute intervals after injection of the barbiturate. Analysis of the samples obtained yielded similar results. Delmonico determined the concentration of pentobarbital sodium in the efferent blood of the leg, kidney, liver and brain after injection of small quantities of pentobarbital sodium into the afferent blood vessels of these organs in intact dogs. In each he noted the same cyclic variation of the concentration of barbiturate in the blood. By making heart-lung preparations and perfusing isolated organs we hoped to determine whether this finding could be repeated. Two heart-lung preparations were set up. Fifty milligrams of pentobarbital sodium was injected into the venous side in each. Both exhibited the typical cyclic appearance and disappearance of the pentobarbital sodium in the samples collected from the arterial side. Two heart-lung hind leg preparations were made. One hundred milligrams of pentobarbital sodium was injected into the arterial supply to the leg in each. In each, typical curves were obtained. Two heart-lung kidney preparations were made. In one the kidneys were removed entirely before being perfused. In this experiment there was much loss of blood from the lungs and kidneys by capillary oozing. No urine was secreted. Fifty milligrams of pentobarbital sodium was injected into the arterial supply to the kidney, but none was obtained on analysis of the venous blood from the kidney except in two samples taken at eighty-one minutes and ninety-six minutes which showed 0.45 mg. per 10 cc. and 0.06 mg. per 10 cc., respectively. In the other preparation there was the

usual cyclic appearance and disappearance of the pentobarbital sodium. One hundred milligrams of pentobarbital sodium had been injected. . . .

"These experiments apparently confirm Delmonico's observation on the cyclic variation of concentration of barbiturate in the blood of the intact dog and indicate that such a variation is produced by the isolated heart and lungs, legs and kidneys. The fact that these results were obtained repeatedly in several experimental setups and with two different analytic methods eliminates the possibility that this cyclic disappearance and reappearance in the blood of barbiturates injected intravenously is purely one of chance. No satisfactory explanation of this phenomenon can be offered." 5 references.

J. C. M. C.

LYFORD, JOHN, III; BERGER, OLIVE L., AND SHUMACKER, H. B., JR.: *An Analysis of Deaths in the Operating Rooms of the Johns Hopkins Hospital with Special Reference to those Occurring under General Anesthesia and Spinal Anesthesia.* Bull. Johns Hopkins Hosp. 70: 488-503 (June) 1942.

"The authors reviewed the records of patients to whom 51,392 anesthetics, general and spinal, had been administered in the general operating rooms of the hospital for all types of surgical procedures, except obstetric and ophthalmologic, during the ten-year period from July 1, 1931 to July 1, 1941. The anesthetic agents were administered by a number of different anesthetists, and the operations were performed by a number of different surgeons. . . . A total of 75 deaths occurred in the operating rooms during the administration of the 51,392 anesthetics. As well as could be determined from a careful study of the records and from con-