

sion of cells from the blood depots into the circulating blood. It was suggested that the latter was mediated through the sympathico-adrenin mechanism. If these factors are responsible for the alterations in the volume of the blood during exhaustive exercise, the administration of epinephrine might be expected to produce a similar picture, since this drug increases the systemic pressure and contracts the blood depots. The purpose of this communication is to report the observations of the blood volume before and after the subcutaneous injection of epinephrine in normal individuals, in patients with splenomegaly, and in 2 subjects whose spleens had been removed following rupture. . . .

"Measurements were made at rest of the volume of the blood and its components, and variations in the volumes were followed after the subcutaneous injection of 1 cc. of epinephrine (1-1000). Further observations included measurements of the blood hemoglobin and viscosity, serum proteins, venous and arterial pressures, velocity of the blood, and pulse rate. These observations lead to the following conclusions: 1. In normal individuals, following the administration of epinephrine, there is a prompt and definite decrease in the plasma volume, which persists in most cases for at least 45 minutes. In the majority of cases there is a slight increase in the cell volume. These alterations are associated with an increase in blood hemoglobin and viscosity and serum proteins. Following the administration of the drug, the systolic pressure increased while the diastolic pressure fell slightly. 2. In individuals who have polycythemia vera with splenomegaly, epinephrine causes a definite decrease in the plasma volume, a moderate increase in cell volume with little change in the total volume. 3. After the injection of epinephrine into 2 individuals whose spleens had been removed, there was a decrease

in both blood and plasma volumes, accompanied by a slight decrease in the cell volume. 4. The effects of severe exercise and of epinephrine on the components of the blood volume are similar." 13 references.

J. C. M. C.

RAY, B. S., AND STEWART, H. J.: *Observations and Surgical Aspects of the Carotid Sinus Reflex in Man.* Surgery 11: 915-938 (June) 1942.

"The diagnosis of hypersensitive carotid sinus reflex is made by the patient's history and a systematic examination of the carotid sinuses. Carotodynia sometimes is associated with the carotid sinus syndrome. The frequency of local abnormalities of the carotid arteries and adjacent tissues on the side of the hypersensitive sinus reflex suggests that the abnormal reflex results from pathology in the sinus. If symptoms of hypersensitive sinus reflex are disagreeable or incapacitating and not controlled by simple measures, surgical denervation of the carotid sinus is advisable. The operation causes only transitory alteration of the cardiovascular system. By anesthetizing the carotid sinus nerves it is possible to distinguish between syncope due to a hypersensitive sinus reflex and syncope due simply to cerebral anoxia resulting from carotid occlusion. The glossopharyngeal nerve in man is not in every instance the only nerve through which afferent impulses of the carotid sinus reflex are transmitted. Hypersensitivity of a carotid sinus reflex may play an important rôle in the production of cardiac arrhythmias, cardiac asystole, and fall in blood pressure occurring during operations, especially operations about the neck. Ether anesthesia cannot be counted upon to abolish a hypertensive sinus reflex. Infiltration with 1 per cent procaine of the carotid sinus nerves lying in the space between the internal and external carotids always temporarily abol-

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 Koppányi 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 Koppányi method for analysis of minced dog and rabbit tissues Delmonico made the following observations.

"'In vitro, the liver exerts the most destructive action on nembital (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 nembital, 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 nembital 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 Levvy 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