group contained a larger number with uncomplicated labor and delivery than the other groups. Yet in the spinal anesthesia group the neonatal mortality was 29 per thousand live births and in the group with no anesthesia and with tumultuous labor the neonatal mortality was 34.9 per thousand live births even after all infants under 3 pounds in this latter group were excluded. Because of the unexpected high combined stillbirth and neonatal mortality in the spinal anesthesia group of 74.2 per thousand live births, this group was examined more minutely. . . . In the full term infants this combined stillbirth and neonatal mortality of 47.7 per thousand live births compared unfavorably with the 15.0 in the caudal group. Also in the premature group the combined stillbirth and neonatal mortality of 220 per thousand live premature infants compared unfavorably with the 174 in the caudal group. The combined neonatal and stillbirth rate in the group with no anesthesia was 25.2 for full term infants and 377 for premature infants weighing 3 pounds or more at birth. These high rates make us seriously question the safety of those methods which withhold pain relief during labor and delivery. . . . In this paper we have presented the stillbirth and neonatal mortality rates in the various anesthetic groups. We are not drawing any further conclusions at this time.” 5 references.

J. C. M. C.


Pentothal sodium-procaine hydrochloride combined in a single solution was administered intravenously to over 500 cases. The mixture was used for extra sedation during spinal anesthesia; to guard against cardiac arrhythmias during general anesthesia, particularly during cyclopropane anesthesia; in combination with gas; alone as an analgesic in cases where no relaxation was required; and in the relief of postoperative pain. The author’s personal observations and impressions were reported.

The preparation of the solution to be used at operation was as follows: 1 to 2 Gm. of pentothal sodium and 0.5 to 1 Gm. of procaine hydrochloride were added to a liter of 5 per cent glucose in normal saline. A 1 per cent solution of procaine in normal saline was used when the dilute solution was not sufficient to prevent arrhythmias. The maximum amount of pentothal used at an operation was usually 2 Gm. If more sedation was required, other measures were used.

The preparation of the solution used for postoperative pain was as follows: 0.5 Gm. of pentothal sodium and 0.5 to 1 Gm. of procaine hydrochloride were added to a liter of fluid.

The dilute solution of pentothal-procaine was found to improve and, frequently, to prevent cardiac arrhythmias during general anesthesia. When cyclopropane was used, less gas was required to maintain anesthesia. Postoperative pain was relieved in most cases and less opiate was necessary when procaine had been used. There were no ill effects to the patient. 11 references.

R. C. T.


In a series of 285 cesarean sections curare was used as an adjunct to various anesthetic agents in an effort to decrease the amount of the anesthetic drug necessary. In 201 of these cases
it was used in combination with cyclopropane and ether; in 43, with cyclopropane; in 37 cases, in combination with other agents. Amounts of curare up to 200 units do not produce undesirable effects upon the baby, and the incidence and degree of fetal depression with curare-cyclopropane anesthesia have been less than with cyclopropane or ether anesthesia. There are no unusual effects on the mother. There is no increase in uterine hemorrhage. Shock is not aggravated. While curare is used routinely for the average patient undergoing cesarean section, spinal and regional anesthesias are employed where they are believed to offer a definite advantage to the patient. 1 reference.

H. L. P.


In 1864 during the war between the States 18 ounces of blood were used compared to the 70,000 pints of blood and an equal number of units of plasma administered during one year of World War II.

In the clinical state known as “shock” there is a discrepancy between the capacity of the arterial tree and the volume of blood available to fill it effectively. There is an absolute or relative oligemia.

Greatest blood loss occurs in peripheral wounds, next thoracic wounds, and finally abdominal wounds on the average. Manifestations of shock are closely correlated with the amount of blood lost, and all, rather than a single sign or symptom, must be used in evaluating the degree.

The systolic, diastolic, and pulse pressures showed a progressive drop with increasing blood loss and are of more value than changes in the pulse. Hyperglycemia was shown to be cor-

related both with the degree of shock and with the amount of blood lost and further proved that kidney function is depressed in relation to the degree of shock.

When blood is lost, hemodilution results from withdrawing fluid from the tissues into the circulation, while in the crush syndrome and severe burns there is hemocoagulation. Therefore, logically, in shock whole blood is preferable. After a certain amount of blood has been lost, the plasma concentration of magnesium, an intracellular cation, rises, suggesting that the intracellular compartment has been tapped for fluid, and it is logical to assume that serious functional and structural derangements of the vital organs may be produced.

Preoperative blood can be considered adequate when the blood pressure is over 80 mm. of mercury systolic, the pulse rate is dropping, the skin is warming, and circulation is returning in it. When a patient in shock fails to respond to the administration of blood, the cause will usually be found in continued hidden bleeding, continued peritoneal irritation, bronchial obstruction with atelectasis, fat embolism, clostridial myositis, and even cerebral malaria. The existence of a state of “irreversible shock” is debatable.

Plasma, although of great value, is an incomplete substitute for whole blood and should be used only when the latter is not available.

The oligemia of severe burns resulting in shock is due to plasma loss, rather than whole blood loss. The composition of fluid lost in burns approaches that of plasma except for a lower concentration of protein. Burns involving less than 10 per cent of the body surface are of little importance, but with extensive burns up to 6 liters of fluid may be lost in forty-eight hours. If the burn is less than 50 per cent of the body surface area, the vol-