

ured blood value can be used to predict the resistance of the animal to further hemorrhage and to judge the effectiveness of the blood or plasma substitutes. The lower the carbon dioxide values, the less resistant the dog to further hemorrhage or to substitution therapy. The higher plasma carbon dioxide values after preinfusion signified that the probability of survival would be increased. Preinfusion with 0.9 per cent saline two hours before the first hemorrhage did not benefit the animal at all, but preinfusion with saline solution five minutes before the first hemorrhage increased survival through the experimental period somewhat. Preinfusion with gelatin solution five minutes before the first hemorrhage significantly increased the ultimate survival. When given two hours before, gelatin increased the survival in the experimental period but not the ultimate survival. When dogs with low plasma carbon dioxide values were reinfused with their own blood plus an extra volume of gelatin solution, survival times were prolonged.

With regard to surgical application of these observation, gelatin is superior to crystalline solutions in preparing surgical patients, especially when given more than two hours before operation. When there is increased permeability of the capillaries or when plasma proteins are low, saline is contraindicated. A plasma volume of 15 per cent of the measured plasma volume was employed for preinfusion. This amount was found to be optimal when infused over a thirty minute period.

M. F. P.

ANDEBSON, H. E.: *Combined Evipal and Scopolamine Analgesia and Cyclopropane Anesthesia in Obstetrics*. Am. J. Obst. & Gynec. 53: 758-765 (May) 1947.

Seven hundred private obstetrical cases at the Immanuel Hospital,

Omaha, Neb., were studied wherein evipal soluble was used rectally and scopolamine hydrobromide hypodermically, combined with cyclopropane anesthesia. During the years 1941 to 1946, in which most of these cases were delivered, no resident physician was in attendance. The intern staff was augmented by senior medical students therefore, if analgesia was to be used, it must have a wide margin of safety and be easily administered by nurses. The average dosage of evipal was  $1\frac{1}{2}$  Gm., dissolved in 60 cc. of tap water, administered rectally. The time for administering analgesia was when the patient was in true labor, when she began to complain of pain and ask for relief or after the cervix showed effacement and three or more centimeters of dilation.

Scopolamine hydrobromide (1/150 grain) was given at about the same time as the evipal. An additional hypodermic of scopolamine (1/200 grain) was given one hour after the first injection or later, if considered necessary for good amnesia. When the presenting part caused perineal signs denoting imminent delivery the patient was taken to the delivery room and the administration of cyclopropane begun. In 93 per cent of cases analgesia and amnesia were produced completely; little or no relief of pain was experienced by 7 per cent. Four stillbirths occurred but in no instance did the agents used for anesthesia or analgesia have the remotest connection with the etiology of the fetal death. Less than 7 per cent of the babies required artificial respiration and all of these recovered with no further trouble after resuscitation. About 5 per cent of the mothers were difficult to manage while under sedation. Only 4 per cent of all cases had cervical lacerations, a fact that speaks well for the relaxing effect of evipal and scopolamine upon

the cervical muscle fibers. 12 references.

F. A. M.

BERGMANN, W.: *Relief of Post Anaesthetic Vomiting Through Pyridoxine*. *Canad. M. A. J.* 56: 554 (May) 1947.

The drawback of ether as an anesthetic for general surgery is that in almost every case the patient goes through a period in which he is nauseated and vomits. On the basis of the efficient action of pyridoxine in vomiting of pregnancy, injections of pyridoxine were given before operation. No more vomiting occurred and nausea was slight. Twelve cases were studied with a control of a similar number. Each of the patients in the control series vomited at least a few times and everyone was nauseated. Premedication of morphine, atropine and nembutal was similar in both series. One hundred mg. of pyridoxine were given before the operation and one injection of 100 mg. pyridoxine one hour after operation. It seemed that patients who had pyridoxine treatment got on much better than those who had not been so treated.

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ORTON, R. H.: *The Physiological Basis of Modern Anaesthesia*. *M. J. Australia*. 1: 332-334. (Mar. 15) 1947.

The present-day anesthetist, unlike his predecessor, has learned to control some of the functions of the human body. The potency of an anesthetic agent is measured by the muscular relaxation that it produces at a certain plane of anesthesia. The planes of anesthesia, however, are determined by the degree of respiratory depression. It follows that the potency of an anesthetic agent is in reality being measured by the muscular relaxation produced at a certain degree of respiratory depression. Recent work with curare explains some of the variations in the

effect of different anesthetic agents. Some agents, such as ether, produce a curare-like action, and it is due to this action that they produce relaxation without undue respiratory depression.

With pure preparations of curare the anesthetist is now able to produce full relaxation with anesthetics of low potency and in light planes of anesthesia. With curare the anesthetist is also able to depress the respirations and thus aid the surgeon especially in thoracic operations. By the use of controlled respirations he is able to combat respiratory depression, in fact, he is able to breathe for the patient. Much has still to be learned about post-operative nausea and vomiting. There is evidence which suggests that there is a relationship between pulmonary irritation by the anesthetic agent and malaise. Ether, notorious for its nauseating properties, heads the list of irritating anesthetic agents. The anesthetist attempts to aid the cardio-vascular system by the intravenous administration of fluids and by the use of vasopressor drugs.

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SCHALIT, I. A.: *Anaesthesia for Upper Abdominal Surgery*. *M. J. Australia*. 1: 367-369 (Mar. 22) 1947.

Curare has rendered anesthesia for upper abdominal surgery safer. Careful preoperative and postoperative treatment, in conjunction with careful administration of the anesthetic, must counteract the surgical interference and time factor involved. The infant who has pyloric stenosis must be treated for dehydration. The anesthetic of choice for infants is nitrous oxide and oxygen with a minimal amount of ether. No positive pressure is permitted. The alternative method for infants with pyloric stenosis is local anesthesia. For adults the anesthetic of choice is one, or a combination of the less toxic drugs with curare.