

the use of plasma in subjects whose veins are difficult or impossible to enter. . . .

“Reactions following plasma infusions have been negligible, only 3 occurring in our series of 445 administrations—an incidence of .68 per cent. The three occurred almost consecutively, one plasma being given without reaction between the first and second reactions. All were typical pyrogen reactions, initiated by a chill, followed by a 2 to 4 degree rise in temperature, with a return to normal in about four hours. An investigation revealed the fact that the operating room force had been so busy that recipients’ sets were not cleaned and sterilized immediately after use, but were allowed to soak in salt solution at room temperature for about forty-eight hours. Previous experience had taught us that reactions could be expected under these circumstances.” Bibliography—38 references.

J. C. M. C.

ROVENSTINE, E. A.: *The economics of an anesthesia service in a large municipal hospital*. Current Researches in Anesth. & Analg. **19**: 145-149 (May-June) 1940.

“The word economics is used in this discussion for convenience. . . . Economics deals with impersonal relationships which are involved in the production and distribution of wealth or relations of individuals as classes such as trade unions, and the application of these relations to problems of government. Anesthesia must deal more particularly with personal relations between the physician and his patient.

“[A] recital of the activities of an anesthesia service in a large municipal hospital gives some authority to the stated belief that the most economical department of anesthesia for this or a similar institution is one composed of

graduates in medicine exclusively, and that such an organization will bring most profit to the hospital, its staff and its patients. Measured in terms of finances the figures quoted add evidence to the assertion that such an organization is not a financial burden to the hospital.”

J. C. M. C.

AMBLER, A. C.: *The present status of anesthesia*. North Carolina Med. J. **1**: 244-249 (May) 1940.

“The advent of new drugs and new equipment and the development of new techniques, within the past few years, have increased research and study of anesthesia. . . . Anesthesia has developed today into a highly specialized field engaged in by physicians who have been trained as experts and who by their training are qualified to choose and administer a particular type of anesthesia to each individual case. . . .

“Inhalation anesthesia continues to be most universally used. Spinal anesthesia is becoming more and more popular, owing no doubt to a better understanding of it. Intravenous anesthesia has become remarkably popular in some localities and has not taken at all in others. The use of regional anesthesia, with the exception of spinal, has neither increased nor decreased for several years. The closed method of inhalation anesthesia—that is, rebreathing with the carbon dioxide absorption technique—is now universally used. However, the open method remains the safest for the occasional anesthetist and for the person who has not been trained. . . .

“Dr. Ralph Waters at the University of Wisconsin recently stated that we will not have an ideal anesthesia as long as the patient is not breathing atmosphere to which he is accustomed. Nevertheless, closed ether is much more satisfactory to patient, surgeon, and anesthetist than open ether, even

though there is normal atmosphere with open ether. We are trying at present the use of compressed air as a diluent and carrier. I have also used the inert gas helium, only to find that it is easier to allow the patient to inspire normal air occasionally and to expire into the breathing bag. This will keep some air with its nitrogen and other inert gases in the mixture. It may be coincidence, but our atelectatic cases have been rare. It is reasonable to assume that with our rapidly absorbable anesthetic mixtures, together with the disappearance of nitrogen from the mixture (which eventually occurs in a closed circuit), we are inviting atelectasis by the absence of any sustaining inert gas.

"It is highly important that a free airway be established at all times, not only for good anesthesia but for the prevention of atelectasis and the building up of a high carbon dioxide content. . . . Intra-tracheal catheters of course offer the best artificial airways.

"The anesthetist's first duty is to the patient, and he must exercise every precaution, anticipate every untoward change and be prepared to cope with any situation. . . .

"With the increased use of explosive anesthetic agents there have naturally been several explosions with their resultant publicity. The American Society of Anesthetists, Inc., began an intensive investigation about two years ago, and I believe their committee is still functioning. They investigated every explosion or fire for the past twenty years about which they could obtain any information. The committee has reported that a large percentage of the explosions were preventable.

"Divinyl ether (marketed commercially as Vinethene) is a new inhalation agent which has stood a thorough clinical investigation and is now accepted. . . . Ethyl chloride as a general agent,

in my opinion, has but two uses or indications. First, in doing a paracentesis of an eardrum on a child in the home; and, second, in the extraction of deciduous teeth. It must only be used for induction. . . . Chloroform is still used in England and in Europe, but in this country its use is limited. . . . Ether remains our safest and most popular inhalation agent. . . . Nitrous oxide still commands a definite place among anesthetic agents. It is non-explosive and is therefore indicated when the cautery or electro-surgical units are to be used about the head or neck, or for cauterizing the lung in lung abscess. It is valuable as an inducting agent for ether and ideal as an analgesia in the first stage of labor. With the exception of these indications, the writer has not used nitrous oxide in several years. . . . Ethylene is explosive. It allows a greater percentage of oxygen than nitrous oxide, and gives a little more relaxation. Ethylene has been supplanted entirely by cyclopropane. Cyclopropane has been in general use about seven years. During this time it has earned for itself the top rank in gaseous agents. . . .

"The practice of 'blowing out' a patient by the use of CO_2 after an anesthetic is not recommended, because of the possibility of inspiring foreign material, saliva, or mucus, and the chances of promoting acidosis. Helium is being used to a small extent as a part carrier in obstruction cases and as an inert gas.

"Intravenous anesthesia is becoming more popular each year. It has many advantages during certain procedures and there are many distinct indications for its use. Pentothal-sodium seems to be gaining more friends than evipal. It is our experience that pentothal acts more smoothly and that the patients seem to behave better. We use intravenous drugs only when specifically indicated, and not routinely.

"Avertin by rectum has largely supplanted ether and paraldehyde by rectum. Although avertin occasionally produces surgical anesthesia, it should never be given for this purpose, but only as a basal anesthetic. . . .

"As stated previously, spinal anesthesia is becoming more popular—probably because we have a better understanding of its use and are not getting the bad results we did a few years ago. There are still some surgeons and anesthesiologists who do not avail themselves of the advantages that spinal anesthesia offers, while others use it too recklessly, without proper understanding of its dangers and limitations. When spinal anesthesia was first introduced its use was advocated in the bad heart cases and in poor risks. Now we know that the patient must be in good general condition. The cases must be selected. . . .

"Concerning blocks, I will only mention that caudal and transsacral blocks are now being replaced by low spinals. Novocain in the fifth lumbar space is easier to give, requires less time, gives better anesthesia, and has less general effect on the patient."

J. C. M. C.

NEFF, WILLIAM: *The continuous recording of systolic blood pressure during anesthesia*. *Current Researches in Anesth. & Analg.* **19**: 175-179 (May-June) 1940.

"A method for the continuous graphic recording of pulse and respiration during anesthesia has previously been presented. . . . The desirability

of obtaining a continuous blood pressure record simultaneously was emphasized at that time. Subsequently, the practicability of incorporating into our unit the combined optical and electrical mechanism described by Doupe, Newman and Wilkins . . . was discussed with one of them (Newman). Accordingly, a unit so modified as to render its use in the operating theater practical was built into our recording anesthetic machine. . . .

"The method employed is essentially a double cuff system consisting of . . . :

"1. An inflated upper cuff containing a constant leak. A side-arm from this cuff is attached to a pressure manometer. 2. A snug lower cuff which transmits the pulsation beneath to a diaphragm upon which is fixed a mirror. 3. A combined optical and electrical mechanism which activates an electromagnetic intake valve resulting in the inflation of the upper cuff. Adjustment of the amount of the leak and the pressure permitted to enter the upper cuff during each opening of the intake valve results in the cuff being automatically maintained at the systolic blood pressure level. . . .

"It is not to be claimed that a continuous blood pressure record during the course of every anesthetic is necessary. . . .

"Clinical studies of the respiratory and circulatory effects of vasopressor and vasodilator drugs can be made with the apparatus, and its sphere of usefulness is by no means limited to anesthesia."

J. C. M. C.