

surgical practice. . . . Effects of several different sedative and anesthetic drugs, acting upon one patient simultaneously, require a maximum of skill, experience, and knowledge in management if safety is preserved. It is for this reason that I suggest to those who must administer the occasional anesthetic—the student, the intern, the general practitioner, the young surgeon, and the embryo specialist—that each ought to begin by learning about a minimum number of drugs and methods. After mastery of these, he may wisely proceed to more complex efforts. . . . Every full-time anesthetist ought to be willing to teach the simple fundamentals to other physicians. . . . Familiarity with the use of oxygen in a simple mask and breathing bag is essential. . . . Opiates, barbiturates, and tribromethanol (avertin) being respiratory depressants had better be avoided. . . . Ethyl chloride, ethylene, cyclopropane, vinyl ether, trichlorethylene, and the newer non-volatile agents vary from the older ones in potency and pharmacologic characteristics. Differences in technical details of their administration tend to confuse the less experienced administrator. They possess no outstanding advantages which skill with nitrous oxide, ether, chloroform, and procaine cannot match. . . . In my estimation, the dangers of nitrous oxide have been greatly exaggerated in recent years. They have certainly been enhanced by the injudicious use of depressant drugs as adjuvants. . . . Ether, skillfully administered, can be made to produce satisfactory anesthesia for nearly all operations during which a source of ignition is not present. Respiratory arrest during either nitrous oxide or ether anesthesia is rarely serious unless there is simultaneous scarcity of oxygen in the patient's tissues. . . . In the absence of nitrous oxide, chloroform affords a means, agreeable to the

patient and convenient to the anesthetist, of inducing unconsciousness for a brief operation or for the induction preceding ether. Safeguards during the administration of chloroform are, first, patience and deliberation in increasing the vapor-tension; second, constant palpation of the patient's pulse, and third, addition of oxygen to the respired atmosphere. . . .

"Procaine is well established as a local anesthetic. Its dangers and disadvantages are more thoroughly understood than those of any other agent. Procaine, therefore, is recommended as the occasional anesthetist's local agent. . . . If [the spinal] method is attempted by the beginner, procaine is probably the safest drug. . . . Spinal administrations tempt the inexperienced because they are so easy. This very simplicity, however, as with the intravenous and other administration of non-volatile drugs, may be a source of danger."

J. C. M. C.

BRODY, JOHN: *Pentothal, Nitrous Oxygen, Curare Anesthesia*. Connecticut State M. J. 12: 116-118 (Feb.) 1948.

"In 1945, I reported the details and results of fifty clinical administrations of anesthesia using curare in combination with sodium pentothal, nitrous oxide and oxygen. . . . Since then I have continued to make use of this type of balanced anesthesia. . . . We have administered over 1,350 anesthetics with sodium pentothal, nitrous oxide oxygen, and curare. I have critically conducted and followed up 250 of my own cases. We have used intocostin and d-tubocurarine chloride with no qualitative or quantitative difference noted. No attempt has been made to prevent the mixing of the curare with the pentothal. We do not elect to use this technique for certain intestinal operations and in the very young patient.

We hesitate to use it in the very obese. All kinds of risks have been done with this combination of agents. It is excellent in transthoracic work; it has been dramatic in its ability to overcome laryngospasm. The technique is a simple one and is safe in competent hands. Patients appreciate intravenous anesthesia and the surgeon is pleased with the abdominal relaxation that these agents afford him. The postoperative convalescence is good and the postoperative complications are at least as low as in the other types of anesthesia."

J. C. M. C.

THOMAS, G. J.: *Paravertebral Block, Classification and Technic*. Pennsylvania M. J. **51**: 525-528 (Feb.) 1948.

"Paravertebral block, literally, is the injection of a cocaine derivative close to the spinal column, at the emergence of the nerve trunks from the intervertebral foramina. According to Labat, paravertebral block is ordinarily performed at all heights of the spine, and each procedure is called by the name of vertebral segment to which it belongs. . . . Paravertebral block may be performed to produce anesthesia or relief from pain in the somaticovisceral part of the body, or a paravertebral sympathetic block for the treatment of peripheral vascular disturbances, e.g., Raynaud's disease or vasospastic disease of the acrocyanosis type. Paravertebral block may be used as a diagnostic measure. . . . There are only two contraindications for the use of paravertebral block—inexperience on the part of the operator, and the patient's idiosyncrasy to cocaine derivative. . . . Paravertebral injection need not become the exclusive province of any one specialty. However, the method should be employed by one who is thoroughly familiar with its technic, anatomic landmarks, and by one who is capable of recognizing and treating possible complications."

J. C. M. C.

NOBLE, ETHEL A.: *Refrigeration anaesthesia*. Canadian M. A. J. **58**: 5-10 (Jan.) 1948.

"My experience with refrigeration has been only in regard to its use for amputations. About two and a half years ago, the Civic Hospital in Ottawa was presented with a therm-o-rite electrical refrigeration unit. The machine though heavy was easily transportable on wheels. Power was obtained by plugging into any electrical outlet. This ran a motor which pumped the freezing fluid, consisting of 50% pure alcohol, through rubber tubing to two applicators which were strapped around the patient's leg. The first two cases were mid-thigh amputations refrigerated with ice by the original method. . . . Ten cases were refrigerated by means of the machine, two were amputations below the knee, the others mid-thigh. With the machine better refrigeration could be given the tourniquet area than with ice bags. . . . We found that the time required for complete anaesthesia of a thigh could be cut down from four hours to three, because we were able to maintain a consistently low skin temperature, one or two degrees above freezing. . . . When the operating room was ready the machine was taken along still attached to the patient in bed. . . . The proper tightness of the tourniquet makes for good refrigeration. . . . It was usual to give some sedative about half an hour before the application of the tourniquet. Morphine grains 1/6, and in the more debilitated patients we used 100 mgm. of demerol. . . . Of our cases that were given pentothal sodium with nitrous oxide and oxygen for psychic reasons, one was given cyclopropane, nitrous oxide and oxygen because the anaesthetic was incomplete, and eight had no additional anaesthesia. Following the amputation, the stump was refrigerated for two to three days.