

the bladder, and 10 cc. of  $\frac{1}{2}$  per cent procaine and 1-200,000 adrenalin are injected beneath the bladder reflection. Pressure on the wheal thus made disperses the fluid toward the sides and under the bladder. The peritoneal reflection is incised transversely and scissors are passed beneath on one side, opened, and withdrawn. Into the space thus formed the finger is introduced and by a side-to-side motion dissects off the peritoneum and bladder from the lower segment and cervix. After repeating this step on the opposite side, the adhesion in the midline is cut and the bladder is pushed off from the uterus. If advisable, an upper flap is prepared similarly by blunt dissection.

"Before the uterus is incised one-third of a grain of pantopon and 1-200th of scopolamine are given and the administration of nitrous oxide is started. During this time the uterus is incised with a knife and the incision is enlarged with scissors. The child is removed head first manually and the nitrous oxide is then discontinued. Nitrous oxide is given for a very short interval only, not much over one minute, and produces analgesia without anesthesia since the patient usually hears the first cry of the child. . . . Immediately after the delivery of the child, 1 cc. of ergotrate is injected hypodermically and interrupted sutures are introduced through the muscle down to the endometrium. These sutures are placed  $1\frac{1}{2}$  cm. apart and are left long. After they have been introduced throughout the length of wound, nitrous oxide is again administered for about one minute. The wound is then spread apart so that the hand may be introduced for the removal of the placenta. The placenta is separated and removed manually. Immediately after the removal of the placenta, the nitrous oxide is discontinued. Here again it is important that the administration of the gas be

as brief as possible in order that the patient may not get out of control. . . . Some patients go to sleep soon after the placenta is removed. Most of the others are quiet and free from anxiety. The abdominal wound is closed in layers. This usually can be done without further anesthesia. If the anesthetic has worn off, however, the peritoneum is infiltrated before it is sutured. It is not necessary to reanesthetize the fascia and skin. . . . By using different dilutions, the quantities of procaine and adrenalin are considerably reduced. Only 1 to 1.3 Gm. of procaine and 9 to 11 min. of adrenalin are required in most cases. At the same time ample solution (120 to 160 cc.) is available for all steps of the procedure. . . . The only disadvantages are that it is time consuming, requires gentle handling of the tissues, and tries the patience of the operator." 3 references.

J. C. M. C.

ELAM, JOHN: *Trichlorethylene Anaesthesia*. *Lancet* 2: 309 (Sept. 12) 1942.

"In June, 1941, Hewer and Hadfield published a preliminary report on the use of a purified form of trichlorethylene known as 'Trilene' as an anaesthetic agent. . . . Since the first report I have used trilene, or supervised its use, in over a thousand cases. Trilene is a very heavy liquid, vaporising much more slowly than chloroform or ether. It is non-irritating and non-inflammatory; it has a smell not unlike that of chloroform. It is now coloured blue to distinguish it from chloroform, which is often coloured red. . . . Trilene dropped on an open mask does not give a satisfactory anaesthesia because it vaporises too slowly, but if it is placed in the chloroform bottle of a Boyle's machine and given in conjunction with gas and oxygen a satisfactory light anaesthesia is obtained. . . . There has been no evidence of pri-

mary cardiac failure during induction with trilene, there appears to be no danger from its readministration, and there has been no evidence of delayed trilene poisoning.

"The main features of the drug have been these. It is very easy to administer and is particularly suitable for general-practitioner work. Its administration over a long period appeared to cause no shock. There is very little vomiting even after long administration. For operations such as amputation of the breast there is much less haemorrhage than when ether is used. The respiration-rate increases considerably after the administration has been in progress a few minutes, but if morphia or a barbiturate is given as premedication this rise is not so noticeable and in many cases is absent altogether. . . . I would especially call attention to its use in midwifery for it appears to have very little effect on the uterine muscle, and a weak mixture of trilene and air will give an analgesia similar to that obtained with gas and oxygen. . . . There have been no deaths which could be attributed to the anaesthetic. . . . It is useful in conjunction with gas and oxygen for increasing the depth of anaesthesia." 2 references.

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BROWN, MANSON, AND NICHOLSON. M. J.: *Regional Anesthesia*. New England J. Med. 227: 636-641 (Oct. 22) 1942.

"The current progress of regional anesthesia is characterized by an interest in its military application, by increasing confidence in spinal and fractional spinal anesthesia, and by widening the use of block techniques in the therapeutic field. Studies of anoxia, respiratory drive and vascular collapse have helped to rationalize the conduct of both spinal and general anesthesia. Lahey has pointed out that trained anesthetists in military service will contribute definitely to a lowered surgical

mortality rate. In their hands, local anesthetics may be differentiated on the basis of effect on wound healing, fractures may be remobilized, and the use of spinal anesthesia will develop both in surgery and in the treatment of shock from injuries to the lower extremities. Of the newer drugs available for regional anesthesia, monocaine hydrochloride, an isomer of procaine, holds some promise. . . . Alkaline salts of procaine borate are less irritating than the commonly used hydrochloride, but deteriorate rapidly at room conditions. Potassium salts of procaine afford more lasting anesthesia, but are immoderately irritating. Laboratory studies have suggested that intracain might afford anesthesia twice as lasting as equivalent doses of procaine, but clinical trials have not confirmed this.

"A group of piperidine derivatives has been studied. . . . Of these, PT-19 appears most promising, providing spinal anesthesia twice as lasting as procaine. In infiltration anesthesia, it is more toxic and less efficient than procaine. Clinical trial has not been reported. Neothosol in almond oil has been used without complication in 427 cases to secure prolonged anesthesia in abdominal wounds by infiltration during surgery. . . . Isoamyl euprine (euprin in oil and in Ringer's solution) has been utilized to infiltrate and to block operative wounds of the upper abdomen. . . . The medical literature records an increasing use of local anesthesia in therapeutics. The antiseptic agent, rivanol, combined with a local anesthetic, is suggested as an adjunct in the care of contaminated, painful wounds. . . . Local anesthetics in oil for prolonged anesthesia, or repeated paravertebral block of abdominal wounds, may decrease postoperative pulmonary complications. Regulated cell reception of a local agent in a slowly absorbable, nontoxic, gelatinous medium is claimed to have a similar