

ABSTRACTS

Editorial Comment: A fixed style of presentation for this department of ANESTHESIOLOGY has purposely not been defined. It is the wish of the Editorial Board to provide our readers with the type of abstract they desire. Correspondence is invited offering suggestions in regard to the length of abstracts, character of them, and source of them. The Board will appreciate the cooperation of the membership of the Society in submitting abstracts of outstanding articles to be considered for publication.

ARMATTOE, R.: *A Case of Anaphylaxis after Anaesthesia.* Brit. M. J. 1: 191 (Feb. 13) 1943.

"In 217 cases of 'conduction anaesthesia' with novutox I have met with only one untoward incident. Novutox is the proprietary name for the preparation of 2% w/v solution of ethocaine hydrochloride with adrenaline 0.00002 g. per c. cm. in Ringer's solution with caprylhydrocupreinotoxin HCl in a proportion of 0.00002 g. per c. cm. and thymol 0.0004 g. per c. cm. . . . The patient, a quite healthy individual, complained of severe muscular pain and was given an intramuscular injection of 0.75 c. cm. of novutox in the right flank, the area of maximum tenderness. Ten minutes later he had a severe itch in both arms, pain and dryness of the gums, thirst, and lacrimation. There was shivering, and the eyes became red; the nostrils were blocked, the voice became hoarse, and he was troubled with a severe throbbing pain in the head and frontal sinuses. The face, neck, and hands were livid and unbearably hot. His systolic B.P. was 210, the pulse 115 per minute, and the temperature 105°. He became speechless and dyspnoeic. The patient's clothes were loosened, and the windows in the room widely opened. He was thoroughly mopped with a wet Turkish towel, which after each application to his face became hot and steaming. After 20 minutes he received 6 drachms of brandy without

any effect. Tincture of spirit of ammonia was then given to inhale: this partially cleared the nasal and bronchial passages. In about 45 minutes from the outset he began to speak incoherently in a muffled nasal way. Respiration, though easier, was still laboured, and he now felt cold and shivering. He was at once given a hypodermic injection of two minims of adrenaline hydrochloride, and in exactly 10 minutes was able to dress himself, and his B.P. came down to 180 mm. Hg, the pulse to 84, and the temperature to 99.5°. In another 10 minutes he took a cup of tea and felt much better."

J. C. M. C.

BLOCK, NATHAN AND ROTSTEIN, MORRIS: *Continuous Drip Caudal Anesthesia in Obstetrics.* J. A. M. A. 122: 582-586 (June 26) 1943.

"Since September 1942, when Edwards and Hingson published the first report on continuous caudal anesthesia in obstetrics, there has been great optimism in both medical and lay literature, hailing it the ideal analgesic and anesthetic for labor and delivery. . . . The method we had used originally was not that described by Edwards and Hingson. Repeated large syringe-injected doses of the anesthetic agent seemed full of potential dangers to us, and, so, to get away from this, we devised a technic which employed a continuous drip of procaine hydrochloride

by gravity. . . . In the present series we have retained the essential principle of the earlier series (the continuous gravity drip) but have increased the safety of the technic. . . . Using the drip method, we determined in the same patient the number of drops per minute that entered the spinal canal compared to the number that entered the caudal canal under exactly the same conditions. We had wondered whether the positive pressure in the spinal canal would offer sufficient resistance to create a slower rate of flow than the negative pressure of the caudal space. . . . We obtained a decided difference in the rate of flow into the caudal space and that into the spinal canal, although the results were exactly contrary to those anticipated, for the rate of flow into the caudal space was slower than that into the spinal canal. . . . Under identical conditions, saline solution will enter the spinal canal two to three times as rapidly as it will the caudal canal. We have utilized this fact in creating a method to differentiate an intradural injection from an extradural one, a 'clinical safety valve' as it were. In addition to the differences in the rate of flow into the caudal and spinal canals, we hoped to develop yet another test based on an induced increase in cerebrospinal pressure. With this in view we performed the Queckenstedt test while the saline solution was dripping freely. Pressure on the jugular veins produced a well defined and equal diminution in the rate of saline flow into both the caudal and the spinal canal and therefore the procedure proved valueless as a differential test. Similar results were obtained when the patient was told to strain or to cough. . . .

"The sacral hiatus is palpated and sufficient 1 per cent procaine hydrochloride injected to raise a skin wheal. A 17 gauge continuous spinal needle is

introduced through the wheal and then guided into the sacral canal for about a distance of $2\frac{1}{2}$ inches. The patient is turned on her side, a syringe is attached to the needle and an attempt is made to aspirate spinal fluid. The anesthetic is discontinued if spinal fluid is obtained. If blood is obtained, the needle is rotated until nothing can be aspirated and the method continued. If no fluid is obtained, the flasks and tubing . . . are connected to the hub of the needle. The equipment consists of two graduated 250 cc. flasks, one containing isotonic solution of sodium chloride . . . and a second containing 1 per cent procaine hydrochloride. . . . These are connected by a Y tube to a long soft rubber tubing, which in turn is connected to the small bore hard rubber tubing by a glass adapter. Before the small bore tubing is attached to the needle it is necessary that all air be evacuated from the apparatus. This is easily accomplished by allowing some of the saline solution to run through the system. The flasks are then suspended from the arms of a pole $7\frac{1}{2}$ feet above the floor. The clamp loading from the saline reservoir is then released and the solution is allowed to flow in at an unrestricted rate. The number of drops per minute is counted. In all cases in which the rate of flow exceeds 100 drops per minute a second count is taken after three minutes. This count is invariably lower than the original. We have taken the arbitrary unit of 150 drops per minute as the upper margin for a safe caudal rate and we feel that the anesthetic should be withheld from all patients who exceed this rate, though all ordinary observations indicate that the needle is not in the spinal canal. In this manner we allow a margin of safety of from 60 to 90 drops per minute from the spinal rate.

"If the saline flow corresponds to the caudal rate (less than 150 drops

per minute) we assume that the possibility of dural penetration is eliminated. The further possibility of a subcutaneous injection is now determined by making pressure with the palm of the hand over the sacrum proximal to the needle. Pressure will stop a subcutaneous flow, but a caudal flow is unimpeded. If the criteria for caudal injection are satisfied, the saline solution is shut off and the needle is taped down securely in the median raphe. The patient is turned on her back and the procaine reservoir is released. . . . One per cent procaine hydrochloride is allowed to drip in at the rate of about 30 drops per minute for twenty minutes. After twenty minutes the rate is slowed to 15 drops per minute. This rate of flow is usually sufficient to maintain even anesthesia. In a few cases a slightly higher rate than 15 drops per minute was found necessary. The level of anesthesia must be carefully watched. . . . We have used the revised method for labor and delivery in 61 cases. . . .

"The continuous drip technic was also applied to obstetric surgical procedures. Five cesarean sections, two abdominal hysterotomies, two Pomeroy sterilizations with appendectomy and two curettages were done. In order to apply the method to abdominal operations, a few revisions in technic were required. The anesthesia should be started forty-five minutes prior to the incision, and 1 per cent procaine hydrochloride is allowed to drip in at the rate of 30 drops a minute for thirty minutes. The inflow is then reduced to 20 drops a minute and the solution allowed to run at that rate throughout the operation. No inhalation anesthesia or auxiliary analgesics were needed. The patients experienced no pain and their postoperative conditions were excellent. All the babies delivered by cesarean section cried spontaneously. There were no serious complications. Two patients who

underwent cesarean section had a pronounced fall in blood pressure but responded promptly to ephedrine sulfate $\frac{3}{4}$ grain (0.05 Gm.). We now are giving ephedrine sulfate routinely in all cases of abdominal surgery preoperatively when continuous caudal anesthesia is to be used. . . . Continuous caudal anesthesia has been a very satisfactory technic in our hands. Certain highly dangerous complications are possible and therefore it should be given only in well equipped hospitals by persons experienced in the technic."

J. C. M. C.

HAMMES, E. M.: *Neurological Complications Associated with Spinal Anesthesia (Eight Cases)*. Minnesota Med. 26: 339-345 (Apr.) 1943.

"A wide variety of neurological complications, either immediate or remote, mild or severe, may follow spinal anesthesia. . . . In a thorough review of the literature, comprising over 60,000 cases of spinal anesthesia, Light and his coworkers listed as sequelae: (1) headaches; (2) sensory disturbances; (3) cranial nerve involvement, especially the 6th; (4) impaired bladder and rectal function. They also noted other more serious spinal root and cord disturbances. Preexisting disease of the central nervous system is given as a definite contraindication to spinal anesthesia. It is a well-recognized fact that cerebral trauma of variable degree may precipitate, aggravate or accelerate the degenerative process of general paresis or cerebral arteriosclerosis. Organic diseases of the spinal cord may be similarly affected. Spinal anesthesia may likewise precipitate or aggravate a preexisting spinal cord disease. . . . A history of a previous organic central nervous system disease or a careful neurologic examination revealing any cerebral or spinal cord disease is a definite contraindication. The following five cases are illustrative:

Downloaded from <http://pubs.asahq.org/ane/article-pdf/4/6/646/299098/000542-194311000-00018.pdf> by guest on 10 December 2024