The time required by the method described demands a larger supply of equipment. This additional expense is nominal compared to the cost of the units which sterilize in less time. The availability of gas sterilizing equipment in the department is an obvious advantage for contaminated cases. The jar is large enough to contain all the rubber goods, the endotracheal tubes, the blood pressure equipment, etc., from such a case.

REFERENCE

1. Schmidt, A. M., and Hoeprich, P. D.: Cold sterilization of cardiac catheterization equipment with ethylene oxide gas, Circulation 29: 892–894, June 1964. (a) Case Laboratories, Inc., 1407 N. Dayton St., Chicago, Ill. 60622. (b) Rapitube, Duxe Products, P. O. Box 1192, Cincinnati 1, Ohio. (c) Ethylene Oxide 11%, Freon 11 54%, Freon 12 35%. The Matheson Co., P. O. Box 85, East Rutherford, New Jersey. (d) Spore-X strips, American Sterilizer Co., Erie, Pennsylvania.

CASE REPORTS

Unusual Complications from Placement of Catheters in Caudal Canal in Obstetrical Anesthesia

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Two case reports are presented because of complications resulting from placement of the catheters in the caudal canal to facilitate obstetric delivery. These complications must be relatively uncommon since they represent the sole comparable technical difficulties encountered during ten years at this institution in which this method of obstetric analgesia has been extensively employed.

Case 1. A 25 year old gravida 2 para 1 white woman was admitted for induction of labor. Five hours after induction, when she advanced to complete effacement of the cervix, caudal anesthesia was started. With the patient in the lateral Sims position a skin wheal was raised with 1 ml. of 1 per cent procaine hydrochloride. A short 18-gauge needle was used in this case in substitution for the 17-gauge, 2½ inch needle normally employed as the latter was found to be defective. The sacral hiatus was entered with some difficulty. Thirty milliliters of mepivicaine hydrochloride were injected and the 25-gauge plastic catheter was then inserted through the needle. During withdrawal of the needle, the catheter seemed to catch. When the needle was completely removed, a frayed end of catheter was noted. About four inches of plastic tubing had been sheared off in the caudal canal. On close examination of the needle, the bevelled end had bent toward the lumen, forming a barb which apparently sheared through the catheter.

Delivery was completed uneventfully, the patient was taken back to her room and informed of the mishap. After some discussion neurosurgical consultation was obtained and it was decided to explore the sacral area for the fragment of catheter. At the sacral hiatus after the sacrococcygeal ligament was removed, the frayed end of the catheter was located and extracted without difficulty.

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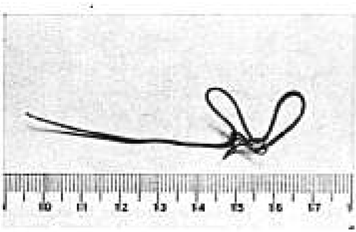

FIG. 1.

Case 2. An 18 year old Puerto Rican primigravida was admitted to Wesley Memorial Hospital in spontaneous labor. Continuous caudal anesthesia was started five hours afterward in the same manner as described above. The dose of mepivicaine hydrochloride was 30 ml. of 1 per cent solution. The catheter was easily inserted and taped in place. After ninety minutes the patient delivered a viable female infant without complication. Following the episiotomy repair she was turned on her side for removal of the plastic tubing. When the catheter was withdrawn approximately four inches, it stuck and could not be further withdrawn. The catheter was then grasped with a forceps at the skin edge but the tension employed caused the catheter to break. About six inches of polyethylene tubing remained in the patient.

Neurosurgical consultation was obtained and sacral exploration was performed that afternoon. The free end of the catheter was located in the subcutaneous tissue and was followed down to the sacral hiatus. When the sacro-coccygeal ligament was removed, the segment of catheter was removed intact (fig. 1). The catheter had looped itself into a complete double knot and attempts to extract the catheter had only tightened the knot and wedged the tubing against the hiatal wall.

Comment

The experience of these two incidents suggests the following precautions: Using a needle of sufficiently large bore to insure an adequate lumen for the polyethylene catheter even if the sharp tip of the needle should impinge on the lumen to some extent. Insertion of the catheter no more than 2 inches beyond the tip of the needle. The clear plastic catheter should be appropriately marked before its use to insure the above precaution.

Cardiac Resuscitation Following Two Hours of Cardiac Massage and 42 Countershocks

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The following case report may be of interest because of the unusual duration of cardiac massage, the effects of hypothermia, and the great number of high energy countershocks used.

A 59 year old white man was admitted to a community hospital after he collapsed while walking to work. Upon admission, he was confused, lethargic and complained of severe occipital pain. A lumbar puncture demonstrated bloody spinal fluid. His condition improved slightly, and after seven days he was transferred to the Presbyterian-University Hospital for further evaluation. On admission, he was mildly confused and lethargic without focal neurologic signs. His past history revealed untreated hypertension of several years' duration. The electrocardiogram showed a questionable old myocardial infarction. Carotid angiography revealed a right middle cerebral artery aneurysm.

Five days after admission, the patient was taken to the operating room for clipping of the cerebral aneurysm. At 7:45 a.m. anesthesia was induced with 300 mg. thiamylal, relaxation was achieved with succinylcholine, and an atraumatic tracheal intubation was performed. A thermometer probe and stethoscope were inserted into the esophagus. Anesthesia was maintained with nitrous oxide/oxygen, 3/2 liters per minute, and halothane 0.75 per cent in a semiclosed circle system. Mechanical hyperventilation with positive-negative pressure was employed, using tidal volumes of 800 ml. at a rate of 20 per minute. Surface cooling was started immediately after induction of anesthesia with a water mattress and ice bags. Shivering was prevented with a continuous intravenous infusion of succinylcholine. At 9:45 a.m., with his temperature

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