CURRENT COMMENT AND CASE REPORTS

CURRENT COMMENT is a new department in ANESTHESIOLOGY. In it will appear invited professional and scientific correspondence, abbreviated reports of interesting cases, material of interest to anesthesiologists reprinted from varied sources, brief descriptions of apparatus and appliances, technical suggestions, and short citations of experiences with drugs and methods in anesthesiology. Contributions are urgently solicited. Editorial discretion is reserved in selecting and preparing those published. The author's name or initials will appear with all items included.

A CASE OF SENSITIVITY TO PROCAINE–COBEFRIN SOLUTION

The following report is presented since it represents one of the more uncommon manifestations in situ of sensitivity to drugs used for regional anesthesia.

A 49-year-old Italian male sustained severe lacerations of the left middle and ring fingers. Amputation of the middle finger and repair of the laceration of the ring finger were completed with metacarpal block of the injured fingers, using 50 cc. of procaine (1 per cent concentration) in normal saline solution to which had been added cobefrin in 1:40,000 dilution. Two months later he was readmitted for removal of a nail remnant from the middle finger, which was done with metacarpal block, using 20 cc. of a similar solution of procaine with cobefrin. He was discharged to his home immediately following completion of the second procedure.

The patient felt comfortable until approximately nine hours after anesthesia and operation. At that time he noticed a warm feeling suffusing his body, followed by a chill of short duration and minor character, with cold sweating. He retired and was awakened by pain in his left hand extending up the arm to the axilla. The left hand was red, swollen, hot and tender. He stated that there were narrow reddish streaks extending about half way up the left forearm. He could feel what he thought were swollen glands at the left elbow and in the left axilla. He was readmitted approximately sixteen hours after operation, at which time his temperature was 98.6 F. by mouth, pulse 88, and respirations 20. Urinalysis gave negative results. The attending surgeon started treatment with hot saline soaks and elevation of the left arm and hand. On further questioning, the patient revealed that after the first metacarpal block he had noticed some reddish "blotching" on the back of the same hand, and in a few days the skin had peeled off as if he had been "sunburned." There was no pain or swelling following the first regional procedure. The patient said that a herniorrhaphy with a fascia lata transplant, and minor procedures such as dental extractions, had been performed several years previously under "local." The nature of the anesthetic solutions is not known.

On the second morning of this admission the hand showed considerable reduction of the swelling and redness with residual puckering of the skin. The latter presumably was the result of the hot soaks. It was noticed that the skin on the dorsum of the left hand was involved in two or three large blisters. This blistering was confined to the area which would normally be infiltrated by the procaine solution in such a metacarpal block. The attending surgeon believed the blistering to be part of the underlying pathologic condition and not due to the hot soaks. The rapid subsidence of swelling in the hand and in the epitrochlear and axillary glands, and the lack of both systemic reaction and increase in temperature led to the belief that this was not an infective process but rather one of sensitivity to procaine solution.

On the second day of admission the following intracutaneous skin tests were performed on the volar surface of the right forearm: (1) 0.1 cc. of procaine in 1 per cent concentration in normal saline solution with cobefrin 1:40,000 (a solution similar

to that used in the block under discussion); (2) 0.1 cc. of pontocaine in 1 per cent concentration in normal saline solution; (3) 0.1 cc. of metycaine in 1 per cent concentration in normal saline solution; and (4) 0.1 cc. of normal saline solution alone. In about fifteen to sixteen hours, approximately the same time interval between institution of the second metacarpal block and the beginning of symptoms following it, the patient noticed a slight swelling at the site of the procaine wheal. Within the next hour or two this became a maculopapular wheal, about 2 cm. in diameter. It was red and tender but had no pseudopodia. There was no exacerbation of symptoms in the involved hand or reaction in the other skin-wheal areas.

The reactions in the left hand and the procaine skin-test wheal rapidly subsided. The patient was discharged on the fifth day of admission. He returned for a check-up one week later, at which time the left hand was normal in size and showed evidence of desquamation at the sites of the former blisters. He felt no pain. The mild stiffness of the hand and fingers had in a large degree disappeared, due to frequent active and passive motion. There was still a small red area of induration at the site of the former procaine skin-test wheal.

Considering the nature of this patient's reactions, the lack of evidence of infection, and the definite response to a skin-test with the procaine-cobefrin solution, it is our belief that this represents an "in situ" toxic reaction to the solution used.

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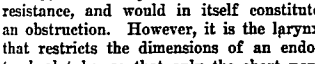
A NEW ENDOTRACHEAL TUBE FOR INFANTS

It was deemed advisable to intubate a four months-old infant who was about to be operated on for excision of an enormous hygroma, about 5 inches long externally, on the right side of the neck. The hygroma surrounded the trachea anteriorly and posteriorly and extended down to the diaphragm on the right. The largest tube that could be passed through the cords had an external diameter of 5.5 mm., and an internal diameter, or lumen, of about 3.5 mm. It was thought that such a narrow tube, while it would maintain an airway, would impose much too great a resistance, and would in itself constitute an obstruction. However, it is the larynx that restricts the dimensions of an endotracheal tube, so that only the short portion of the tube passing through the vocal cords need be made narrow for infants and children. A compound tube, therefore, was constructed, consisting of two parts, as shown in the diagram. The lower portion, to be passed into the trachea, was 5.5 mm. in outside diameter, 3.5 mm. in inside diameter, and 3.8 cm. long. This was wedged into, and cemented to, the upper tube, 8 mm. in outside diameter, with a lumen of 5.5 mm. diameter, and 8.7 cm. long. The tube thus had a total length of 12.5 cm.



The long rubber tube conducting the gases on a Heidbrink portable machine from the cylinders to the intake flutter valve was disconnected from its metal tube, and the latter was plugged; the rubber tube was inserted, by means of a metal connection and rubber stopper, into the metal tube on the expiration side, attached to the ether vaporizer. Another rubber tube was similarly inserted into the large metal tube on the inspiration side (to which the inhaler tube is usually attached). This tube was connected by means of a T tube with a side vent, using Ayre's principle, to the endotracheal tube. By this means, a one-tube open system could be used in connection with a breathing bag, so that the lungs could be inflated at will (after closing the vent). The anesthesia was satisfactory; the tube was inserted with not too much difficulty. It was passed through the cords as far as the junction of narrow and wide tubes, and the lungs were inflated several times as the pleura was opened. Cyclopropane was the anesthetic agent. Tracheal aspiration was performed by passing an ureteral catheter through the compound tube.

Several other similar tubes have been constructed, one consisting of tubes of three different dimensions, the widest having a