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.

CORRESPONDENCE

To the Editor:

The injection of local anesthetic agents during general anesthesia is theoretically dangerous because certain of the early warning signs and symptoms of toxicity may be masked. With disregard of this danger, peripheral nerve block has been performed in our hospital upon many patients while they were unconscious either from intravenous or inhalational anesthesia. The case described below is the first occasion in which an alarming "local drug reaction" has occurred in these circumstances.

A woman, aged 40, weight 105 pounds, was suffering from nausea and vomiting and partial obstruction accompanying a duodenal ulcer. Partial gastric resection was prescribed. She came to the operating room with a continuous gastric drainage tube in place. Morphine sulfate 5.4 mg. and scopolamine hydrobromide 0.22 mg. had been given hypodermically at 7:30 a.m. She was anesthetized with a mixture of nitrous oxide, cyclopropane and oxygen at 8:40 and intubated with an orotracheal airway over which the face mask was replaced. Anesthesia during intubation was the second or third plane of the third stage and thereafter was not maintained below the first plane. To facilitate surgical procedures in the upper abdominal cavity under light inhalational anesthesia, a bilateral block of the lower six or seven intercostal nerves has been useful. When the block is performed with 0.1 per cent nupercaine (percaine) it has often been unnecessary to administer any drug to relieve pain for several hours after operation. In addition, patients whose intercostals have been blocked before operation have seemed to inspire more easily and more deeply as long as the effect persists.

In this case, two 50 mg. tablets of nupercaine were dissolved in 100 cc. of saline solution and 4 minims of adrenalin 1-1000 were included. After 30 cc. of this solution (0.1%) had been injected in the right lower intercostal spaces a "more experienced" anesthetist (myself) appeared upon the scene. The surgeon was finishing with his previous case and "hurry" seemed necessary. Somewhat doubting the strength of the solution being injected, and wishing to make sure of the efficacy of the block, another 50 mg. tablet of nupercaine was added to the 50 cc. still in the cup of 0.1 per cent solution (now 0.2% sol.) and the block hurriedly completed by reinjecting the right side and injecting the left. Total time of injection was about twelve minutes and the total quantity 130 mg.

About thirteen minutes after the last needle was withdrawn and five minutes after the incision was made, muscle contractions were felt by the anesthetist's fingers resting under the chin. A sharp convulsion followed. The contents of the breathing bag were replaced as the muscle activity was felt and inflation of the lungs with oxygen was easily accomplished because of the free airway through the endotracheal tube. This convulsion lasted perhaps thirty to sixty seconds. The pulse could be palpated faintly at the end of the convulsion, but no blood pressure reading could be obtained. Artificial respiration was

interrupted and a very shallow respiratory activity was noted almost immediately. The pupils had remained normal up to this time. (At the first evidence of convulsion, a colleague had been asked to bring pentothal from a table in a nearby room where sterile saline, syringes, needles and pentothal ampules are always kept in readiness.) Shortly after respiration was resumed, another convulsion occurred somewhat longer and more severe than the first. During this, the left pupil dilated (the right was not observed). Artificial respiration with oxygen was, of course, instantly resumed. At the end of possibly ninety seconds, when the convulsion ceased, the peripheral pulse could not be felt. Upon request the surgeon verified the absence of heart beat. Cardiac massage resulted in prompt resumption of action. At this time, a solution of pentothal sodium was ready to inject, but since artificial respiration with oxygen for six or more minutes was followed by the presence of readable blood pressures of 60/40, heart rate of 83 and respirations of 22 per minute, the barbiturate was not injected. Subtotal gastric resection and right oophorectomy through an upper abdominal incision were performed with exceptionally satisfactory relaxation. The patient left the operating room awake at 10:35 and was first given morphine for pain at 3 p.m. The postoperative period was exceptionally satisfactory.

To recapitulate, a small woman was given 130 mg. of nupercaine, 30 mg. of it in .1 per cent and 100 mg. of it in .2 per cent solution for intercostal block while anesthetized by inhalation. The total quantity, the strength of solution and the rate of injection were all excessive. A very severe "drug reaction" resulted in this unconscious patient which might well have resulted fatally if artificial respiration with oxygen and cardiac massage had not been available instantly. The presence of an endotracheal tube, in place *before* the convulsion began, was most fortunate. Possibly the immediate application of cardiac massage due to the nature of the operation was no less fortunate, although some massage of the heart results when the lungs are distended during artificial respiration. The intravenous administration of a derivative of barbituric acid is undoubtedly the ideal treatment for a severe drug reaction with convulsions. However, this case illustrates the practical fact that delay and difficulty are sometimes unavoidable in administering barbiturates by intravenous injection when a convulsion occurs. The importance of instituting artificial pulmonary ventilation at once is obvious.

It is important to appreciate that similar "reactions" are relatively common following the administration of all local anesthetic drugs. The abuse of nupercaine in this instance is seriously to be condemned. Procaine similarly abused would probably have been followed by a similar reaction.

RALPH M. WATERS, M.D.,
Department of Anesthesia,
State of Wisconsin
General Hospital,
Madison, Wis.

To the Editor:

Dr. Dorothy Andersen's report on a case of avertin poisoning and the accompanying discussion of similar cases, which appeared in the May, 1945, issue of ANESTHESIOLOGY, was complete and well presented. It seems, however, that one significant factor was overlooked, the consideration of which would make it unnecessary to classify this case as one with hypersusceptibility to avertin. On both occasions when the child was anesthetized, there appeared to be no attempt even to keep the oxygen in the inspired atmosphere at the normal levels, let alone enrich the atmosphere. Ether and air were used to complement the avertin narcosis for the tenotomy, and open drop ether was used for the exploratory laparotomy. There can be little doubt that mild, and perhaps even major, degrees of anoxia were present during one or both anesthetics. There is abundant evidence that