

mapping of areas of anesthesia. Some of them would never have consented to another attempt, and few could have cooperated any better the second time.

"In the beginning it was our practice to perform all injections with the patient on the operating table. The patients were transported to and from the operating room by stretcher and were put back to bed immediately after the injection. More recently, in accordance with White's suggestion, this practice was discontinued. Each patient was given the injection in his own bed and required to lie quietly for at least one hour after injection. According to White, this is important to prevent diffusion of the alcohol and irritation of outlying nerves. So far, our experience does not seem to show that the results are any better in the patients treated in this manner. One important advantage of the operating table is that it can be raised or lowered to suit the operator's convenience. . . .

"Relief was obtained in 77.5 per cent; in 22.5 per cent treatment failed to give relief. The relief was marked and permanent in 47.5 per cent of the total number. Eight cases have been followed for more than six years; 2 of these have been followed for nine years. There was no immediate operative mortality. In 5 cases pleural effusion developed on the left side; the fluid was absorbed without aspiration within a week. Most of the patients suffered from painful intercostal neuritis, which lasted from a few weeks to several months. Many of these patients who had been bedridden or confined to the house were able to resume an active life." 11 references.

J. C. M. C.

HAUGEN, F. P.: *General Anesthesia for Jaw Casualties*. Mil. Surgeon 89: 70-80 (July) 1941.

"There are few problems in anesthesia that present a greater variety

of technical difficulties than the production of safe and effective narcosis for operative procedures about the oral cavity. Because of these difficulties, as many of these procedures as possible should be done with some form of regional block anesthesia. . . . We wish to outline a plan of approach to the case requiring general anesthesia. . . . We should have some general classification for patients presenting themselves for operation. It has become customary among anesthetists to place patients in classes A, B, C, and D. Class A is the excellent risk. . . . Class B patients have some disease or injury of relatively minor nature other than that bringing them to the amphitheater but which might influence the outcome of an operation. . . . Class C patients are serious risks. . . . Class D risks are those that stand little chance of surviving the operative period. . . . Very few patients in Classes C and D should have a general anesthesia for an injury to the jaw or face. . . . Among the general factors influencing the patient's chances for recovery are: 1. Age. . . . 2. Weight. . . . 3. Weakness. . . . 4. Heart Disease. . . . 5. Anemia. . . .

"The use of certain opium derivatives, or members of the barbitol group, together with one of the belladonna family has become routine prior to inhalation anesthesia. . . . The purpose of premedication is to make anesthesia easier to induce and to maintain. . . . The best drug we have for this purpose is morphine. The dosage must be determined for each patient. . . . Morphine by subcutaneous or intramuscular route must be given an hour to an hour and one half before anesthesia is induced in order that it may exert its maximum effect. . . . When circumstances will not permit the administration of the premedication at least an hour before operation is to commence, it is quite all right to give morphine intravenously. . . . The barbituric acid

derivatives are the next most effective drugs for premedication of patients. . . . There is no contraindication to combining morphine and a barbiturate, but it is good practice to give the barbitol compound at least an hour before the morphine is given. . . . The practice of combining a belladonna derivative with morphine is an old one. Atropine is most frequently used. . . . We prefer scopolamine for most robust adults, because the psychic effect aids in producing the tranquility so important in reducing reflex irritability. . . .

"One fact must be constantly borne in mind. That is that no matter what the route of administration of a general anesthetic is, the only way the patient can take in oxygen and give off carbon dioxide is through the lungs, trachea, and upper air passages. No method can be considered safe, no matter how efficient it is in producing good operating conditions unless it provides for the free exchange of oxygen and carbon dioxide. This fact can not have too much emphasis. . . . The general consensus of opinion is that Avertin should not be used to produce surgical anesthesia. . . . Certain features of the drug have a special appeal to the oral surgeon. The manipulation of a broken jaw is not as painful as some more extensive surgical procedures, and therefore does not require as deep anesthesia. Considerable relaxation is needed, however. Avertin is peculiar in that it produces marked relaxation of the body musculature even though full surgical anesthesia is not induced. There also is a minimum of nausea upon recovery, and this is important when the patient has his teeth wired together, for obvious reasons. . . . A mixture of carbon dioxide and oxygen should always be available for resuscitation purposes, and oxygen alone is frequently given to patients throughout the operation when Avertin is being used in combination with local anesthesia. . . . As for

contraindications to its use, chief emphasis should be placed on its effect on respiration. . . . I know of no place where intravenous anesthesia must be more cautiously given than when operations are done about the nose and mouth. . . . some enthusiasts for this method recommend giving oxygen by face mask during the course of the anesthesia, but for work around the mouth as in jaw casualties, the best method for administering the oxygen is by a 10 French catheter with several extra holes cut in the end, and inserted into the oropharynx. Four to eight liters of oxygen should be given per minute. Relaxation of the jaw is usually profound, and an attendant should always be assigned to watch the patient's airway to make sure that it does not become obstructed by the tongue falling back in the throat. . . . Occasionally a patient receiving intravenous pentothal will show marked irritability of the larynx. . . .

"Of inhalation agents now in use, one receiving acclaim by many oral surgeons is cyclopropane. . . . It is the nearest approach to the ideal anesthetic for jaw surgery that we have. . . . It must be given by the closed carbon dioxide absorption system through a tube inserted by way of the nose or mouth into the trachea, and then packing the pharynx with vaseline gauze or by making a tight fit with a rubber balloon around the end of the tracheal tube. Nitrous oxide and ethylene can be discussed together. . . . The disadvantages of these gases are their relative impotency. . . . These gases, then, should be reserved for short operations where relaxation is not necessary. It will be found that the field of usefulness of nitrous oxide can be greatly increased by the use of small doses of Avertin as basal anesthesia. . . . Many of you are acquainted with divinyl ether, trademarked Vinethene. . . . Because of its potency, a little bit goes a

long way. . . . If the operator wishes to work inside the mouth, fairly smooth anesthesia can be maintained by dropping Vinethene on gauze held over the nose of the patient, after the induction is completed in the regular way. . . . We have found Vinethene particularly useful in supplementing nitrous oxide anesthesia that is not giving adequate relaxation. . . . For prolonged operations under general anesthesia, ether holds its place, as it has for over ninety years. . . .

"Maintenance of a free airway is particularly difficult in operations on the jaw, mouth, or neck. For that reason, no technic of administration of general anesthesia has yet been devised that offers the safety for the patient and excellent operating conditions for the maxillo-facial surgeon than is provided by the endotracheal method. We have come to regard it as a necessity in our work." 2 references.

J. C. M. C.

HARKINS, H. N.: *Treatment of Shock in Wartime*. War Med. 1: 520-535 (July) 1941.

"Everything that has been said concerning shock in peacetime applies on a larger scale and in increasing tempo to shock in wartime. . . . Unlike some other types of battle or aid raid casualties, shock can be prepared for to a large extent. The subject of shock in all its aspects thus has a peculiar timeliness. . . . James Latta, of Edinburgh, Scotland, in 1795 used the term shock. It had been applied less definitely by Le Dran in 1743 and by Woolcomb in 1770. . . . Early interest in shock was chiefly confined to military surgeons, but during the nineteenth century and the first fourteen years of the present century physiologists gave the subject most attention. . . .

"The definition of shock on which the present paper is based is that it is a progressive vasoconstrictive oligemic

anoxia. . . . It has often been observed that certain diseases arouse special interest in certain countries. . . . Interest in shock is predominantly American. Short, of Bristol, England, noted as long ago as 1913 that, judging from the literature, most of the interest in shock centered in the United States and England, especially in the United States. This was true also during and after World War I. . . . Irrespective of the fact that many of Crile's early ideas on shock have not stood the test of time, his inspiring example interested other American surgeons in the subject. Possibly this fact alone explains a portion of the preponderance of attention directed to shock on this side of the Atlantic. During the present war the same disparity continues, and one finds few references to shock in the current literature of the Axis powers, while in the British Medical Journal, the Lancet and many American medical periodicals the subject receives considerable attention. . . .

"The Division of Medical Sciences of the National Research Council has several subdivisions, among which are the Committee on Shock, Transfusions and Blood Substitutes (Dr. W. B. Cannon, chairman), the Subcommittee on Shock (Dr. Alfred Blalock, chairman) and the Subcommittee on the Use of Plasma and Serum (Dr. C. C. Sturgis, chairman). The committee has chosen physicians who have specialized in the aspects of shock to do research in their own laboratories as part of the preparedness program. Recently (November 1940) a bulletin on shock (51 pages) was distributed to the various collaborators. The bulletin contains preliminary reports of the various projects under way, so that there may be no delay in making the results obtained by one group available to all for the common good. In Great Britain the Medical Research Council, in its committee on traumatic shock and on