

of inserting an intratracheal tube is simple and quickly mastered and pays enormous dividends in ease, comfort and safety to the surgeon who employs it. Having acquired the technic, the user is at once rewarded by the absence of the complications encountered in general anesthesia for surgery of the head and neck, including eye, ear, nose, mouth and throat operations." 16 references.

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EVERSOLE, U. H.: *Anesthesia for Surgery About the Head*. J. A. M. A. 117: 1760-1764 (Nov. 22) 1941.

"This discussion is not intended as an exhaustive treatment of the subject of anesthesia for surgery about the head but rather as a discussion of some of the technical problems with which the anesthesiologist is confronted when an operation is to be performed in this region of the body. . . . There are many factors that the anesthesiologist must consider if he is to select the proper anesthetic agent and method of its administration for any type of surgery. Some of these factors have a peculiar significance when the operation is to be performed in the region of the head. Some of the more important of these may be considered under one of the following heads: (1) proper preparation of the patient for operation, (2) selection of the proper agent, (3) employment of a method of administering this agent that will insure an adequate and unobstructed airway at all times, (4) facilities readily available for the treatment of respiratory and circulatory depression, (5) an anesthetic technic which will in no way hamper the work of the surgeon, (6) precautions against explosion when inflammable anesthetic agents are being used and (7) adequate protection for the patient's eyes. . . . In the selection of the proper anesthetic agent for any type of surgical procedure, the question of ade-

quate oxygen, as well as the explosion hazard, must be considered. . . . One of the most important factors to be considered in the management of any type of anesthesia is the maintenance of an adequate and unobstructed airway at all times. This is particularly important for any type of surgery about the head. . . . A method of administration should be employed that will not only permit the anesthetist to observe the depth and character of the patient's respirations but also enable him to render effective treatment should any marked degree of respiratory depression become manifest. . . . The anesthetist must be on the alert for signs of disturbed respiration and should have facilities immediately available to carry out artificial respiration for an indefinite length of time should it be necessary. . . .

"When a long or shocking surgical procedure is anticipated, or if during the course of any surgical procedure there is considerable blood loss or evidence of impending shock, a continuous intravenous drip of fluid should be started. This affords a means of replacing fluid and is also a route for the administration of blood should a transfusion be necessary. In the actual treatment of shock there is no fluid that is as valuable as whole blood. . . . Adrenergic drugs such as epinephrine, neosynephrin, ephedrine and pitressin are occasionally indicated. At best their action is only temporary. . . . Extreme care should be taken to prevent irritating agents such as iodine and alcohol from getting in the eyes. Furthermore, safeguards should be taken to prevent drapes from being forced down against the eyeball. Even in the absence of an irritating agent, if an eye is left open during the course of an operation a rather serious keratitis may develop as a result of the drying of the cornea. If the draping is such that the anesthetist cannot readily

see the eyes at all times, they may be protected by filling them with boric acid ointment and covering with gutta percha which is molded firmly into position by means of a sponge soaked in hot water. This is an excellent method for the protection of the eyes of patients suffering from exophthalmos.

"A fundamental principle which should guide the anesthesiologist in planning anesthesia for any type of operation is that he should so devise and place his apparatus that it in no way hampers the work of the surgeon. . . . For surgical procedures which are superficial and will probably not require more than thirty minutes to complete, one of the shorter acting intravenous barbiturates, such as pentothal or evipal, has proved quite satisfactory. . . . The apparatus described by Nicholson and Sise for the administration of intravenous anesthetic agents has been quite satisfactory and has the advantage of being simple and inexpensive. . . . Except for short procedures (ten minutes or less) an endotracheal tube should be inserted when intravenous anesthesia is employed for surgery about the head. . . . Some sort of frame should . . . be placed over the end of the tube and held in position by means of adhesive tape to hold the drapes away from the end of the tube, where they might form an obstruction. An ordinary ether mask of the Yankauer type is very satisfactory for this purpose. . . . For longer operations, during which the surgeons will not use any type of high frequency electrical apparatus or cautery, cyclopropane or cyclopropane in combination with ether or ethylene administered by the carbon dioxide absorption technic is preferable. . . .

"For longer procedures during the course of which the surgeon is likely to use some type of high frequency electrical apparatus or the actual cau-

tery, ether vapor and air is probably safer from the standpoint of explosion than cyclopropane-oxygen or ether vapor and oxygen. For the administration of ether vapor and air, over long periods of time, a semiopen type of apparatus may be used. . . . A useful apparatus for the administration of varying concentrations of ether vapor in the inspired air is the Connell anethetometer. . . . A much less expensive apparatus for the vaporization of ether is the so-called Richardson bottle, which costs only a small fraction of the price of the anethetometer. Although it is not nearly so automatic as the anethetometer, this apparatus has proved satisfactory, and with a little experience one may become proficient in maintaining an even plane of anesthesia with it. . . . The semiopen type of apparatus . . . is well adapted for artificial respiration. If the anethetist's hand is placed over the end of the exhalation tube at intervals of about fifteen times a minute the air pressure will inflate the lungs, while the weight of the chest wall will take care of expiration. A safety valve in the circuit calibrated to open when 12 mm. of mercury pressure is reached obviates the danger of building up too much pressure in the lungs with this method of artificial respiration. When the semiopen method is to be used, the patient is first anesthetized with cyclopropane or ethylene and the transition to ether gradually made. After a depth of anesthesia has been reached that will permit the introduction of an endotracheal tube with facility, the larynx and trachea are sprayed with a 10 per cent solution of cocaine and the tube is inserted. The endotracheal tube is firmly anchored in position by means of adhesive tape, and the V connection from the ether vaporizer is attached to the hilt of the tube.

"The administration of moderate doses of tribromethanol in amylene hy-

drate (70 to 80 mg. per kilogram of body weight) rectally prior to the induction of anesthesia makes for a smoother induction and probably diminishes the total amount of ether necessary to maintain anesthesia. Because of the danger of circulatory collapse it is advisable not to use tribromethanol in amylene hydrate if the operation is to be carried out with the patient in a sitting position." 7 references.

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ROVENSTINE, E. A., AND WERTHEIM, H. M.: *Therapeutic Nerve Block*. J. A. M. A. 117: 1599-1603 (Nov. 8) 1941.

"Although therapeutic nerve blocking is an outgrowth of regional analgesia, utilizing the same anatomic and physiologic principles, and therefore has an identical historical development, it can be said to have come into actual existence and gained recognition as a therapeutic measure during the last score of years. . . . It should be stated that the choice of the solution for injection constitutes, next to accurate diagnosis, the most important consideration in therapeutic nerve blocking. Procaine or similar analgesic drugs in saline solutions may be injected in the proper amounts and concentrations and repeated at frequent intervals without serious or disturbing sequelae. Drugs such as procaine in various oils may be used freely but with more caution since the complication of sloughing tissues, although uncommon, always is to be feared. Neurolytic injections of alcohol have been extolled often and not rarely condemned. Their use is justified when other less formidable therapeutic remedies have failed and injections of analgesic solutions are without permanent relief. . . .

"Alcohol injections for the relief of trigeminal neuralgia have been the subject of many favorable reports which give results for thousands of treatments.

If the diagnosis is without error and the solutions are properly placed, pain is always relieved. There are no contraindications to such treatment, and the only objection is that permanent relief is not always obtained. . . . Neuralgia of the greater occipital nerve has a pain distribution localized to the distribution of the posterior primary division of the second cervical nerve. Relief is readily obtained by perineural injections of this nerve with procaine-alcohol, as it winds around the lateral mass of the second cervical vertebra. Intractable pain from tuberculosis or other diseases of the larynx may be relieved by injections of the superior laryngeal branch of the vagus. . . . Cervical plexus neuralgia is usually limited to a single segmental nerve. With accurate localization and careful differential diagnosis, therapeutic nerve block may be done with favorable prognosis. Brachial plexus neuralgia, often confused with cervical plexus neuralgia, may result from spasm of the scalenus anticus, osteoarthritis of the cervical or upper thoracic vertebra and numerous other conditions. These disturbances are not favorable for nerve blocking therapy unless it can be shown that an individual nerve segment is involved and surgical therapy is not advised. Painful shoulder is a common complaint and most often is due to periarthritic involvement or subdeltoid bursitis. Relief of pain may be obtained frequently by perineural injections of procaine or oil-anesthetic solutions in the lesser scapular notch to interrupt sensory impulses passing through the suprascapular nerve. Such treatment is definitely more valuable in acute conditions. . . .

"Blocking the thoracic and lumbar segmental nerves by the paravertebral route has several therapeutic indications. . . . The lumbar and sacral segmental nerves may be judiciously blocked for many painful conditions.