

and heavy preanesthetic medication are to be avoided with patients in shock. . . .

"A relatively smaller amount of the anesthetic agent is required to produce anesthesia in anemia, and, because of the diminished oxygen carrying power of the blood, care must be used not to produce oxygen want. If the nature of the operation demands a general anesthetic, cyclopropane is the agent of choice. . . . Local or regional anesthesia is to be preferred in anemia. liver or kidney damage, if the operation is of such a type that it can be employed. A combination of regional and gas anesthesia might be the choice in the final analysis. . . . In cases in which the patient is in a grave condition, hypotensive anesthetics are to be avoided and local or regional anesthesia should be used. When it is necessary to use general anesthesia, cyclopropane is the agent of choice. . . . In case of tuberculosis, acute pulmonary disease, influenza or bronchitis, inhalation anesthesia is contraindicated, especially the irritating agents, as ether. The choice lies between the various forms of local and regional anesthetic drugs. If the nature of the operation demands general anesthesia, gas may be used. . . . Cyclopropane is the choice since it allows abundant oxygen and does not act as a respiratory irritant. . . . A cardiac patient who is well compensated usually tolerates a general anesthetic very well. . . . Spinal anesthesia is contraindicated in hypertensive heart disease because the fall in blood pressure often accompanying spinal may be so great that circulatory embarrassment results. . . . In the decompensated cardiac patient who requires surgery, regional block or local infiltration is by far the safest. Any form of general anesthesia in a decompensated patient carries with it grave risk. . . .

"Regional block anesthesia is a favorite method, but local infiltration

of procaine hydrochloride is not so desirable because it may interfere with the healing of the wound in the diabetic patient. Spinal anesthesia is an excellent agent, providing there are no contraindications such as a debilitated patient, or low blood pressure. . . . Cyclopropane oxygen because of its minimal effect on metabolism is an excellent drug for anesthesia in the diabetic patient. Careful management, both preoperatively and postoperatively, is important. . . . Nitrous oxide given with 15 per cent oxygen or greater is probably the most popular obstetrical anesthetic agent. . . . Cyclopropane in obstetrics is ideal in the hands of a competent anesthetist. . . . Other types of anesthesia such as local infiltration, spinal, sacral block, and intravenous have enthusiastic advocates, but are not widely used. Of the inhalation anesthetic agents, cyclopropane is the choice in cesarean section. . . . Spinal anesthesia has been censured in cesarean section, but is becoming more popular. . . . In individualized anesthesia the anesthetic agent or combination of agents best suited to the individual patient is chosen; thus allowing the best operating conditions for the surgeon and at the same time the greatest safety for the patient." 17 references.

J. C. M. C.

GOLD, HARRY: *The Use of Bulk Ether in Anesthesia*. J. A. M. A. **120**: 44-45 (Sept. 5) 1942.

"The belief that ether for anesthesia should be stored in small containers and that it should not be used for anesthesia twenty-four hours after the containers are opened dates back to the work of Baskerville, who was the first to study extensively the conditions under which ether deteriorates. . . . In 1934 a study was published by Harry and David Gold which challenged the validity of the twenty-four hour clause. . . . The routine use of

ether in bulk for anesthesia has been adopted in many hospitals of various sizes throughout the United States. . . . The Twelfth Revision of the U. S. Pharmacopeia has sanctioned the practice by the revision of the article on ether. According to the new text, official ether for anesthesia may be stored in containers as large as 3 liters. Furthermore, the Pharmacopeia no longer considers ether unsatisfactory for anesthesia twenty-four hours after the container in which it is supplied is opened; it places no limit on the period of time in which ether remains fit for anesthesia after the container is opened. . . . The Pharmacopeia guards against the danger from the transfer to containers that may not be suitable by directing that ether should not be used for anesthesia after it has been removed from the original container longer than twenty-four hours. The need for the transfer of ether from large containers into smaller ones by the hospital pharmacist has focused attention on the fire and explosive hazard of the handling of ether. . . . These hazards, however, have long been known and apparently are sufficiently well appreciated by the average hospital pharmacist so that fires and explosions from the transfer of ether as handled by the hospital pharmacist are extremely rare. . . . The containers in which ether is issued to the operating room may be the tins in which anesthetic ether is supplied in commerce. They must first be thoroughly rinsed with the fresh ether with which they are to be filled. A special copper can may be made. . . . Amber colored bottles are fairly satisfactory, but they present the danger of breakage. Clear glass bottles cannot be used, since the exposure of ether to sunlight leads to fairly rapid deterioration. The transfer of ether from a 5 pound can or a 30 pound drum into the smaller containers is managed

differently in different hospitals. . . . The procedure should be carried out in a room free of flames or burners and free of mechanical moving parts which may be a source of sparks. Free ventilation is necessary. The larger the room, the less the danger of developing an explosive mixture of ether vapor with air during the process of the transfer. This danger, generally speaking, is extremely small. . . . The safety of bulk ether for surgical anesthesia appears to be established. . . . The financial saving is considerable. . . . The wider application of this practice may be of particular importance in the present state of the nation, with the urgent need for economy in labor and in metal." 10 references.

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DANNA, J. A.: *Ether as the Anesthetic of Choice in Prolonged Operations*. New Orleans M. & S. J. 95: 99-102 (Sept.) 1942.

"A patient who has had a prolonged ether anesthesia, of say two hours or more, reaches his room in a comatose state from which he does not recover for anywhere from two to six hours and when he does he will have nausea and vomiting for 24 hours or more and when he gets over his experience will vow never to take ether again as an anesthetic. The percentage of complications following such anesthesia is quite high. . . . Recently I have been making it a rule in operations that I expected to last for much more than an hour to have the anesthetic discontinued after giving it for 45 minutes or one hour. I found that we could work for at least another hour without difficulty. Still more recently I cut the period of anesthesia after the operation was started to 20 minutes and later again to 15 minutes, and I found that we could still continue to operate for an hour or more after the anes-