

Since employing these prophylactic measures we have found fewer cases of 'cyclo shock.' " 18 references.

J. C. M. C.

CRANE, R. M., AND WHITACRE, R. J.: *Cyclopropane Anesthesia*. Ohio State M. J. 38: 239-240 (Mar.) 1942.

"The actual number of times cyclopropane was used at Huron Road Hospital either alone or with other agents during the last seven years . . . reflects an increase in popularity of this agent as judged by the number of administrations each year. . . . Following a very rapid rise during 1936 and 1937 there has been a gradual decrease each succeeding year in its use as the sole anesthetic agent. Probably the most significant finding here is its decreased use for intra-abdominal operations. This may be largely accounted for by the increased satisfactoriness of other methods of anesthesia for these cases. It may be stated that cyclopropane unsupplemented is now only occasionally used as a method of producing profound degrees of anesthesia. The apneic technique of using this gas has occasionally been very useful. It has not, however, become popular as a routine procedure. Other reasons for the decreased use of cyclopropane are the substitution of non-inflammable agents when certain electrical appliances are employed and the increased use of intravenous and regional anesthesia for orthopedic, rectal, urological, and emergency operations. Cyclopropane is also being used less frequently as the agent of choice for operations on the thyroid gland. This is due to the incidence of respiratory obstruction unless an endotracheal airway is employed. . . . It is our practice to supplement intentionally many of our spinal anesthetics with a light plane of cyclopropane. . . . The other uses of cyclopropane have been principally with ether. . . .

In the past this combination was used principally for intra-abdominal operations but during the last two years regional anesthesia has been displacing cyclopropane and ether in this type of operation. Ether is now used to supplement cyclopropane when adequate relaxation cannot be produced without undue respiratory or circulatory depression. Ether is also used whenever it is necessary to use unusually high concentrations of cyclopropane to maintain the desired level of anesthesia."

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LUND, C. J.: *The Relation of Inhalation Analgesia and Anesthesia to Asphyxia Neonatorum*. Am. J. Obst. & Gynec. 43: 365-376 (Mar.) 1942.

"Guedel has defined an ideal anesthetic agent for obstetrics as one that 'should have no ill effect, immediate or remote, upon either the mother or the baby. It should render true physical relief from suffering, and should be applicable over a long period of time without influence upon uterine contraction. It must present to the obstetrician a patient in satisfactory condition for correct delivery, and to be practical it must admit of convenient and simple application.' . . . Notwithstanding the voluminous literature concerning obstetric anesthesia there is a paucity of actual data about its influence on asphyxia neonatorum. . . . The use of the punch-card system necessitates accurate definitions of the conditions to be recorded. Usually the criteria have varied according to the personal views of the particular investigator, and therefore we have adhered to the classification which has proved satisfactory in our experience. It is unfortunate that so many exist. Occasionally incomplete records may have led to minor errors in classification of the mild types of asphyxia, but in the 'moderate' and 'severe' groups

the data have been uniform. Because of the necessity for brevity and clarity, the 'moderate' and 'severe' forms will occasionally be combined into a single unit called 'dangerous' asphyxia which will differentiate it from the 'mild' group. . . .

"Because of the variation in detail of treatment of each case, it is difficult to determine the contribution of inhalation agents to the incidence of asphyxia neonatorum. In general, however, the following methods were used. In the majority of uncomplicated term pregnancies, the individual received moderate amounts of nonvolatile analgesic drugs, usually opiates, during the early part of the first stage of labor. Later in the first stage and during the second stage of labor nitrous oxide was commonly used as an inhalation analgesic, and it was given intermittently with contractions by a semiclosed technique. Nitrous oxide, cyclopropane, and ethylene were used at the time of delivery. . . . Nitrous oxide and ethylene are rarely used for operative deliveries, instead cyclopropane and occasionally ether or chloroform are given. Ether and chloroform were chiefly used when conditions demanded complete relaxation for operative obstetrics or in cases of emergency when other equipment was unavailable. . . .

"Because of the rather limited number of premature deliveries (approximately 15 for each agent in each of the seventh and eighth months of pregnancy), the results are not conclusive. However, the indications are that, at the twenty-eighth week of gestation, the inherent fragility of the fetus offsets any effects of the inhalation agents. At the thirty-second week those infants having no inhalation agents were definitely superior to others. But, by the thirty-sixth week this sensitivity was no longer demonstrable except for cyclopropane. At

terms there was little difference; however, the more potent agent cyclopropane still gave evidence of greater asphyxia. . . . The unusually large number of cases presenting some type of complication of pregnancy or labor made it possible to demonstrate the marked effect that they have on neonatal asphyxia. . . . There seems to be a striking difference in the effects of various agents on the fetus when administered for varying periods of time. . . . There was no correlation between technique of administration and asphyxia neonatorum. The following data about nitrous oxide are typical of results we have obtained: Semiclosed technique (with some rebreathing), 971 cases with 6 per cent 'dangerous' asphyxia; closed absorption technique, 94 cases with 6.5 per cent; and McKesson technique, 466 cases with 7 per cent asphyxia. . . .

"1982 consecutive deliveries were reviewed from the aspect of asphyxia neonatorum in relation to inhalation analgesic and anesthetic agents. Nitrous oxide, ethylene, and cyclopropane, when used as analgesic agents, did not materially influence the incidence of asphyxia neonatorum. Nitrous oxide, properly administered, was given for long periods of time without significant effects on fetal asphyxia. Cyclopropane and other agents when used in concentrations sufficient for anesthesia by operative delivery were accompanied by an increase in the incidence of fetal asphyxia. The incidence of asphyxia neonatorum varied directly as the duration of administration of cyclopropane anesthesia. There seemed to be no relationship between asphyxia neonatorum and the type of anesthetic technique. Prematurity, complications of pregnancy and labor, method of delivery and misuse of analgesic agents were apparently of greater significance in asphyxia neonatorum than the vari-

ous inhalation agents when properly administered." 12 references.

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BEECHER, H. K., AND ADAMS, RALPH: *Ether Anesthesia in the Presence of Pulmonary Tuberculosis*. J. A. M. A. 118: 1204-1209 (Apr. 4) 1942.

"Great and sometimes dangerous efforts are made to avoid the use of ether anesthesia when surgery must be carried out on patients who happen to be suffering from tuberculosis; accordingly, it is important to examine the basis for the prejudice against the use of ether for tuberculous patients. As will be observed, this prejudice does not appear to be established on a secure foundation. We have therefore studied the results of using ether in operations on a carefully followed series of patients and have compared our results with those from other clinics. Our wish to give ether an adequate trial was based on extensive observations, made in many general surgery clinics as well as our own, that ether is extraordinarily well tolerated by the cachectic patient and by the patient whose respiratory and circulatory systems may be grossly impaired. . . . While opinions are divided at present concerning the advisability of using ether in operations on tuberculous patients, . . . there have been more to oppose than to approve or condone its use. . . . While statements based on opinion appear to have served as the basis for the numerous strictures against ether in the tuberculous, so many men have been of this view that one cannot lightly dismiss their statements. A point worth noting here is that nearly all, if not all, of the statements referred to were based on open cone anesthesia, not modern, closed anesthesia. . . . We believed that ether employed in modern closed anesthesia with the carbon dioxide absorption technic is worthy

of trial and reevaluation in tuberculosis, for, as pointed out earlier, ether has many desirable qualities for the very sick. Ether administered in a closed system can hardly be compared with the agent when it is used by the open drop method. Accordingly, we have carefully studied for a period of more than five years a series of patients who received 'closed' ether anesthesia, notwithstanding their pulmonary tuberculosis. Our major purpose in this paper is to report that experience. . . .

"We began to use ether routinely as the anesthesia of choice for thoracoplasty in patients with pulmonary tuberculosis in October 1935. . . . While the majority of the patients came from the Rutland Sanatorium, a number of other sanatoriums participated. Since more precise follow-up information was available concerning the Rutland patients, we decided to limit our study to this group: 147 patients who underwent two hundred and sixty thoracoplasties under ether anesthesia. . . . The routine premedication consists of morphine sulfate $\frac{1}{6}$ grain (0.01 Gm.) and atropine $\frac{1}{100}$ grain (0.00065 Gm.) administered subcutaneously one-half hour before operation. Frequently, soluble pentobarbital $1\frac{1}{2}$ grains (0.1 Gm.) is given by mouth one hour before operation. Patients are placed in position for operation before anesthesia is induced. During induction, care is taken to prevent straining and coughing. The choice of operating time is the afternoon, following elimination of the morning sputum. Anesthesia is administered by means of a closed system apparatus with carbon dioxide absorption (never open cone for these patients). Following a brief nitrous oxide-oxygen induction, with care to avoid anoxemia, ether anesthesia is administered with a high percentage of oxygen. Although intratracheal