

dren or highly nervous adults, avertin or intravenous barbiturates for basal narcosis are used. When regional anesthesia is to be used, a short-acting barbiturate is administered one hour before the morphine and scopolamine.

"The use of *inhalation agents* will not be discussed except to stress the use of the endotracheal tube. No other method affords the anesthetist the assurance of a free airway regardless of the position in which the patient may be placed. The use of the Magill endotracheal tube facilitates the administration of the anesthetic and, more important still, assures the proper intake of oxygen and elimination of carbon dioxide. In the majority of extra-abdominal operations, cyclopropane is the agent of choice. . . .

"In recent years the introduction of two ultra short-acting barbiturates, evipal and pentothal for intravenous use, has increased the anesthetist's choice of agents for light anesthesia. These drugs are especially valuable when fire-proof conditions are desired. Since the dosage required to produce anesthesia with intravenous barbiturates is 50 to 70 per cent. of the lethal dose, the fractional method of administration should always be used. Recently the combination of nitrous oxide and one of the ultra short-acting barbiturates has been used to advantage when electrical equipment is to be used.

"When profound abdominal relaxation is required, spinal anesthesia may be employed in suitable cases. More conservative doses of the spinal anesthetic agent may be used when combined with a light inhalation anesthetic.

"Cases with advanced pathological conditions should be given the benefit of the least toxic drug, and one which alters normal physiology the least. . . .

"In certain procedures such as the

application of body casts or hip spicas, where little or no manipulation is required, the production of narcosis with fractional doses of morphine and scopolamine has been very satisfactory. . . . It should be stressed that a highly selective anesthetic program will serve the best interests of the patient and surgeon. Frequently, a combination of agents and methods will prove more satisfactory than the use of any one agent or technique for all procedures." Bibliography—2 references.

J. C. M. C.

DOUDNA, H. E., AND MECHLING, C. S.: *Thyroid Anesthesia; a Comparative Study*. South. M. J. **33**: 502-507 (May) 1940.

"This paper presents a comparative study of the anesthetics in one hundred thyroidectomies picked at random from the files of our local private hospitals and the State University Hospital. . . . In choosing the anesthesia for any thyroidectomy one considers regional anesthesia, some form of general anesthesia, or a combination of both. Regional anesthesia is not popular with the surgeons in our locality, and therefore we shall base our study on the results obtained with inhalation anesthesia combined in some instances with local infiltration of the field of operation. . . .

"There appears to be but little choice between a combination of sodium isoamylethyl alcohol, morphine and scopolamine, or pentobarbital sodium, morphine and scopolamine. Patients receiving either of the above combinations of drugs in suitable doses arrived in the operating rooms more nearly asleep than did those who were given only morphine and scopolamine. If morphine and scopolamine are given in sufficiently large doses to produce an equal degree of drowsiness and amnesia, undue depression of respiration and circulation is frequently the re-

sult. Phenobarbital was used in one instance, but it is too slow in its action to deserve a place in preoperative medication.

"Tribromethyl alcohol was given as the basal narcosis to four patients in this group, of whom three died. One died from tracheal edema some eighteen hours after operation, the other two from thyroid crisis. Lack of adequate nursing care in our institutions has led us to discourage the use of tribromethyl alcohol. In other circumstances it might be found more satisfactory.

"It is our opinion that atropine has no place in the premedication of the thyroid patient because it is a powerful metabolic stimulant and has no anesthetic effect. . . .

"Practically all our cases exhibited an increase in the blood pressure and pulse rate while the glands were being manipulated. The relationship of the hypertension occurring during anesthesia to the postoperative course is not at all clear. Some of the patients, having the greatest increase in pressure, made the best recoveries. We can show no statistical evidence of superiority for the combination of a barbiturate, morphine and scopolamine over morphine and scopolamine as far as complications occurring during the anesthesia are concerned. The patients exhibiting the greatest disturbance during anesthesia were most heavily premedicated. One should, of course, avoid too much preoperative sedation. . . .

"The incidence of cough was approximately 10 per cent. greater with the cyclopropane group than with the nitrous oxide-local group. Our statistics show that we have about 4 per cent. higher incidence of postoperative pharyngitis with cyclopropane than with nitrous oxide. The incidence of tracheitis was about 10 per cent. higher in the nitrous oxide group. Tachycardia was 10 per cent. more frequent

after cyclopropane. Thyroid crisis occurred only in the cyclopropane group. Urinary retention and albumin were 3 per cent. more frequent after cyclopropane, and in the same group white blood cells in the urine occurred 7 per cent. more frequently. There were no casts in the urine after nitrous oxide. The incidence of fever of 99° or more was 17 per cent. greater after cyclopropane. . . .

"By combining local infiltration of the operative field with the nitrous oxide-oxygen anesthesia, it is possible to administer a higher percentage of oxygen than will be the case if no procaine is used. In a few of our cases with severe myocardial degeneration, we have depended mainly on the local anesthesia, and have given only enough nitrous oxide to control the patient's restlessness. . . .

"Ordinarily we feel that ether has but little place in thyroid anesthesia, provided the gases are available. However, we believe that a light ether anesthesia offers the greatest degree of safety for those few patients having severe myocardial degeneration combined with uncontrollable fibrillation. . . . Our experience with ethylene has been too limited to warrant its inclusion in this comparative study."

J. C. M. C.

BEHREND, A., AND RIGGS, H.: *Cerebral Complications Following Surgical Operations. II. Factors Which Predispose to Cerebral Anoxia.* Arch. Surg. 41: 772-780 (Sept.) 1940.

A former article dealt with the etiologic, pathogenic, and pathologic aspects of the cerebral complications of surgical operation. Twenty-one cases of fatal cerebral complications were reported. However, such complications are not always fatal and many more patients recover than die. Using cases in which careful postmortem examination was made, it was demonstrated