

a few seconds at most, immediately begins to breathe again for himself. . . . The principle determining the efficiency of all methods of artificial respiration is . . . found to be essentially the same as the principle controlling the volume of natural breathing. It is the influence of the blood gases on the respiratory center that largely determines the tonus of the respiratory muscles; and this tonus is a principal factor in the volume of lung ventilation alike in natural breathing and in artificial respiration. Because of this principle, no manual method—neither prone pressure nor any other—can induce any larger volume of lung ventilation than the tonic elasticity of the body at the moment permits. . . .

“Mechanical respiration, unless so forcible as to be harmful, does not increase the volume of natural breathing. Inhalation of carbon dioxide and oxygen increases the efficiency of manual artificial respiration but increases the antagonism between mechanical respiration and natural breathing. In brief, the best method of resuscitation from drowning and electric shock is prone pressure artificial respiration supplemented by inhalation of carbon dioxide and oxygen. The best method of resuscitation from carbon monoxide asphyxia is inhalation of carbon dioxide and oxygen, initiated in cases of severe involvement by prone pressure artificial respiration.” 22 references.

J. C. M. C.

WYNNE, R. L.: *Mechanism of Partial Rebreathing in Anaesthesia*. Brit. M. J. 1: 155-157 (Feb. 1) 1941.

“Partial rebreathing is justified in so far as it promotes lung expansion and oxygenation, and retains the warmth and moisture of the upper respiratory contents while permitting adequate ventilation below. Its extent is modified in the continuous-flow ma-

chine by adjustment of the gas flow, and in the intermittent-flow machine by adjustment of the bag capacity. The patient's effective alveolar ventilation is controlled, as always, by the alveolar CO_2 concentration. For continuous-flow machines there is a ‘critical flow’ in the neighbourhood of 5 litres per minute for each individual, which if diminished will lead to CO_2 accumulation, but which if exceeded allows equilibrium to be attained. Continuous flow is dangerous with a flow below the critical level; intermittent flow is dangerous with an unlimited bag capacity.” 5 references.

J. C. M. C.

BATTEN, D. H.: *Spinal Anesthesia in Cesarean Section*. Anesth. & Analg. 20: 115-118 (Mar.-Apr.) 1941.

This is a report of the records of the Methodist Hospital, Brooklyn from 1928 to 1940 and shows 96 cases of cesarean section where spinal anesthesia was considered the method of choice.

“Reports of the surgical procedures written at the time of operation indicate that spinal anesthesia has these advantages: (1) No disturbance of previously existing pathology in the the respiratory, circulatory, or genitourinary systems of the mother, (2) relaxation of the abdominal muscles permitting easier and speedier work, (3) good tone of uterine contractions, (4) diminished blood loss, (5) decreased nausea and emesis, (6) no need of resuscitation of baby.

“Spinal anesthesia was found to be of particular value in those patients who had acquired an upper respiratory infection or whose previous existing pulmonary disease would render the use of ether unwise. Toxemia was considered a definite indication for spinal anesthesia when cesarean section was contemplated.

“The agents and dosages used in this

series varied according to the preference of the surgeons and anesthetists. Spinoecaine was used in six of the earlier operations. Pontocaine was employed in one case. The remainder were done under procaine. In the majority, 120 mg. of the latter drug was used.

"Sixteen per cent of all cases required supplemental anesthesia, either nitrous oxide and oxygen, nitrous oxide and oxygen and ether, cyclopropane, or local infiltration with procaine.

"Like the anesthetic agents, pre-anesthetic medication varied according to the policy in vogue at the particular time. There was no uniformity as to the drug used, its dose, or time of its administration. Morphine, scopolamine, atropine, and barbiturates were all used, either alone or in various combinations. No correlation between the medication before delivery and the condition of the baby could be established except that in no instance was the baby depressed, cyanosed, or in need of resuscitative measures.

"Contraindications to the use of spinal anesthesia in cesarean sections have been found in general to parallel those for other abdominal surgical procedures, namely, (1) extreme arterial tension, either high or low, (2) pathology of the spinal cord, (3) cutaneous infection at the proposed site of the puncture, (4) septicemia."

A. W. F.

CRAIG, P. E.: *The Use and Abuse of Spinal Anesthesia*. Clin. Med. 48: 64-69 (March) 1941.

"No other known method of anesthesia today will permit the use of such a minute dose of a drug, and yet maintain complete and prolonged analgesia. The whole organism is not subjected to the dangers of general anesthesia, with resulting strain on the heart and lungs. The early symptoms of vasomotor and respiratory depression are transitory

and, upon disappearance, leave the surgeon free to perform the operation under an ideal condition of complete muscular and visceral relaxation. Injury to the intra-abdominal organs is negligible, because the intestines are contracted, facilitating easy manipulation; and when the patient is placed in the Trendelenburg position the gut gravitates cephalad, making the use of restraining pads unnecessary. Peristalsis is augmented and the expulsion of the flatus stimulated; speed in the performance of nontraumatic surgery is greatly favored; and postoperative morbidity and mortality, in both clean and septic cases, are materially reduced. . . .

"While spinal anesthesia is applicable to the average surgical risk, it has very definite contraindications [which are:] 1. Abnormally low blood pressure. . . . 2. Cardiopathies. . . . 3. Extreme hypertension. . . . 4. A psychoneurosis. . . . 5. Active pulmonary tuberculosis, and pleural or pericardial effusions. . . . 6. Pott's disease, syphilis, generalized septicemia, and diseases of the meninges or spinal cord. . . . 7. Malformations of the spine. . . . In past years, cocaine, stovaine, Alypin, tropacocaine, apothesine and tutocain have soared to heights of popularity, and have subsequently fallen into the discard. Cocaine, however, is still used satisfactorily by many surgeons in Mexico. At present spinoecaine, novocaine, nupercaine, metycaine, neocaine, and pontocaine occupy a place of prominence. . . . It is a distinct advantage for the surgeon-anesthetist to choose one suitable spinal anesthetic and, having familiarized himself with its physical properties and technic of administration, apply it in all his surgical procedures. In this manner he will come to master and, in a definite measure, standardize a heretofore uncontrollable method of anesthesia. . . .

"It is extremely important, in preparing a patient for spinal anesthesia,