

## ABSTRACTS

*Editorial Comment:* Material for this section is not abstracted in a uniform style. Many employ direct quotations only. Others are written in the more conventional form. At times there may be included a few opinions, personal to the abstractor, which, where they appear, will be bracketed or labeled "Comment." The Editorial Office continues in its desire to receive correspondence from readers relative to the management of this section.

COOPER, W. G., II; ZUMWALT, WILMA, AND SUGARBAKER, E. D.: *A Limited Comparison of Continuous Spinal and General Ether Anesthesia*. *Surgery* 16: 886-895 (Dec.) 1944.

"The relative advantages of spinal and inhalation ether anesthesia have been the subject of much discussion. The primary weakness of spinal anesthesia as heretofore administered, and the one on which many of the objections to its use have depended, has been the uncertainty of and the inability to lengthen its duration. This shortcoming may now be completely eliminated by the use of the continuous principle, so that it seems worth while to attempt a reevaluation of the subject. An exceptional opportunity to do this was presented when a particular series of anesthetics were given at this hospital. [Ellis Fischel State Cancer Hospital, Columbia, Mo.] From January, 1940, to February, 1942, one of us (W. Z.) gave all the general ether anesthetics, and from February, 1942, to September, 1943, gave continuous spinal anesthesia to all patients requiring operation below the diaphragm. The patients' age groups, their general condition, the primary diagnosis, and procedures carried out under each type of anesthesia were essentially similar. The operations were done by or under the supervision of only two surgeons. The general anesthetics were administered

by the closed system. Nitrous oxide was used for induction and the anesthesia maintained with inhalation ether and oxygen. . . . The continuous spinal anesthetics were given by the method of Lemmon with certain modifications. . . . No attempt was made to select cases for spinal anesthesia. . . . This hospital treats indigent patients suffering from cancer. The average age on admission is about 60 years, and anemia, hypoproteinemia, and the diseases associated with advanced age are commonly seen in association with the tumor for which treatment is sought. Poor general condition is particularly frequent in those subjected to abdominal operation, as most of these are patients with gastro-intestinal cancer. Careful attempt is made preoperatively to restore these patients physiologically as nearly as possible to normal. Still they present a severe test of the efficiency and safety of whatever anesthetic method is used. The material selected for study consists of two series of 100 anesthetics each. The first group comprises the last consecutive 100 general anesthetics given for operations below the diaphragm. The second group consists of the first and the last consecutive 50 continuous spinal anesthetics given by the same anesthetist. As continuous spinal anesthesia is used only for operations below the diaphragm, the two groups are nicely comparable. The

first and last 50 cases in which the patients were given continuous spinal anesthesia were considered in order to compare results obtained earlier with those obtained after we had acquired some experience with this method. . . .

"On critical analysis, 44 per cent of the patients given general anesthesia and 77 per cent of those given continuous spinal anesthesia were considered to have had satisfactory operative and postoperative courses. The incidence of blood pressure falls was very appreciably less in those who received spinal anesthesia, with definite improvement in technique reflected in the course of the first and last fifty patients so treated. The occurrence of three fatal pulmonary emboli following the use of general ether anesthesia and none following the use of continuous spinal anesthesia, in our opinion, reflects the less complete relaxation produced by the former, necessitating greater operative trauma."

J. C. M. C.

BELLIS, C. J.: *Cystometry after Spinal Anesthesia*. *Surgery* 16: 896-905 (Dec.) 1944.

"Crevey's classical studies of the effects of prolonged vesical distention demonstrated that profound irreversible urinary tract damage may follow the neglect of the overdistended bladder. In the presence of urinary retention, there is an increased susceptibility of the urinary tract to infection; in fact, patients who were thought to have succumbed to obscure vasomotor effects following rapid decompression of the chronically distended bladder or to the infection attending catheterization really have died as a result of latent upper urinary tract infection harbored prior to the emptying procedure. Every cystoscopist is familiar with the mural hemorrhages in the acutely or chronically distended bladder. . . . The hemorrhages occur first

in the submucosa of the bladder, then occupy the entire wall and proceed up to the kidney. Thus, urinary retention produces increased susceptibility of the urinary tract to infection. . . . Crevey has pointed out that the inability to void after surgical operations is due to the horizontal position of the patient, the pain of the injured tissues, and drugs, such as the anesthetic or opiate. He has emphasized the importance of early catheterization, if spontaneous voiding six to eight hours after the previous voiding is impossible. He correctly has pointed out the fallacy of relying on cholinergic, vagotropic, or parasympathomimetic drugs or such artifices as audible running water to produce voiding. More often than not, urine so obtained is merely an overflow. A more physiologic emptying may be permitted through a small sterile, well-lubricated catheter, passed gently and frequently enough, or simply left in place for a day. . . . Although the acute urinary retention secondary to many operations, such as the postpartum state, and to laparotomies is a familiar picture, no studies have been recorded of the effects of such procedures or the anesthetics per se on the cystometrogram. The measurements to be described were undertaken with the view of determining the relationship between desire to void, intravesical tension at that point, and the bladder volume required in the immediate postanesthetic period. . . . Ninety-four young men, none of whom had any apparent urologic disease, with ages ranging from 18 to 35 years, were selected. These soldiers were operated on under spinal anesthesia. . . . In nearly every case, the determination was made within two hours after the patient's return from the operating room. . . . Spinal anesthesia temporarily establishes a type of neurogenic vesical dysfunction, probably due to