

patient should have so much morphine and scopolamine before and during the operation that he will be semiconscious and fall asleep while on the table. Other authors do not approve of the extensive use of morphine during spinal anesthesia. The patient should be in Trendelenburg position during the operation. This is necessary to prevent a fatal cerebral and cardiac anemia and to enable the cardiovascular system to function properly with the aid of gravity. There are no dangers of upward extension of the anesthesia to higher and more dangerous levels when the most frequently used and safest anesthetic, namely, procain hydrochloride (novocain, neocain), is used. . . .

"The use of oxygen during spinal anesthesia has a dual purpose. It relieves the nausea that is sometimes experienced by the patient and it increases the amount of oxygen carried in the blood and delivered to the tissues during the abnormally slow passage of the blood, and thereby breaks the vicious circle that is induced by tissue anoxia during spinal anesthesia. Lemmon gives a continuous venoclysis of 10 per cent glucose to support the patient during the operation. What has been said about the use of ephedrine preoperatively also holds true for the administration during the anesthesia excepting that it seems to be of no value in cases with great fall in blood pressure and shock because of its slow action, as it does not start until about fifteen minutes after injection. . . . Last but not least the care for the comfort and psychic state of the patient is essential. . . . Occasionally, the fear and nervousness of the patient can lead to grave complications and this is one factor that usually can be prevented. During the transportation of the patient back to his room sudden changes in position should be avoided. . . . The continuation of the Trendelenburg position accomplished by elevating the

foot of the bed a few inches is very valuable in the prevention of the headaches that sometimes occur after spinal anesthesia. Intravenous infusion of normal saline has the same advantages as after general anesthesia. Lemmon describes a technic for continuous spinal anesthesia, in which the spinal needle is not withdrawn after the injection of novocain so that subsequent doses may be introduced as needed. . . . The continuous method enables us to eliminate several of the disadvantages of spinal anesthesia such as the administration of the entire calculated dose at one time and the limitation of the operative time. . . . Altogether the use of the continuous method seems to have many advantages over the 'one shot' method and seems to aid considerably in the safety of production of the anesthesia as well." 45 references.

J. C. M. C.

CROWLEY, R. T.: *Reflex Changes in Respiration Induced by Distention of the Small Intestine*. Arch. Surg. 44: 707-714 (Apr.) 1942.

"The importance of distention in the various portions of the gastrointestinal tract has been frequently stressed in experimental and clinical literature. Such interest has arisen largely from repeated demonstrations that the distention inevitably appearing on intestinal obstruction is the factor chiefly responsible for the grave physiologic disturbances associated with that condition. Whether experimentally produced or resulting from actual pathologic conditions, excessive intraluminal pressure in the small intestine has been shown to produce a variety of local and general effects. Among the changes induced locally in the distended bowel segment are alterations in the motility, the circulation, the absorption and the secretion. Changes of a more general character occurring in the entire volume of cir-

culating blood include disturbance of the cell-plasma ratio and fluctuation of the level of nitrogenous substances in the blood. Certain other effects, apparently reflex responses to the stimulus of distention, are much less familiar. Among these is the marked respiratory response elicited by the stimulus of excessive distention rapidly induced in the small intestine. A search of the literature has revealed little dealing with this phenomenon. It is the purpose of this communication to present observations obtained in an experimental investigation of this particular effect, namely, the changes produced in the character and the volume of respiration by excessive distention rapidly induced in the small intestine.

“Dogs were the experimental animals employed; 30 were used in the course of the experiments . . . with the animal under anesthesia produced by intravenous and intraperitoneal injections of soluble pentobarbital. . . . Marked respiratory changes, reflex in character, invariably follow excessive distention rapidly induced at any level of the small intestine of the anesthetized dog. These changes are of a characteristic pattern and are accompanied by synchronous fluctuations in the blood pressure. They are apparently initiated by afferent impulses arising from the stimulus of distention and mediated by fibers of the splanchnic nerve radicals to the distended bowel segment and subsequently by pathways in the spinal cord, since they are eliminated by complete section of either of these structures. The vagus nerves and the adrenal glands are not involved in the production of the respiratory and the blood pressure effects since these continue to appear after transection of the former and total extirpation of the latter. Drugs inhibiting the action of the efferent components of the autonomic nervous system, both adrenergic and cholinergic, exert

little or no action on the respiratory alteration appearing on distention. Drugs depressing the visceral afferent impulses from the distended bowel segment lessen the respiratory and blood pressure phenomena and, if given in sufficient doses, abolish them entirely.” 8 references.

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CAMPBELL, S. M., AND GORDON, R. A.: *Post-anaesthetic Complications in a Military Hospital*. *Canad. M. A. J.* 46: 347-351 (Apr.) 1942.

“This report is based on an analysis of 2,094 anaesthetic records. These cases include all those patients anaesthetized during one year on all the services of a military hospital. We have tabulated pre-anaesthetic respiratory complications in three groups. (1) Active respiratory infection at the time of operation. (2) Recent respiratory infection: those patients who give a definite history of a respiratory infection within two weeks of operation. (3) Cough: those with a cough at the time of operation, but no other evidence of respiratory infection. Post-anaesthetic pulmonary complications have likewise been divided into three groups, which we have designated as: (1) atelectasis; (2) cough and sputum; (3) pneumonia. . . . To these three groups we might add a fourth, to include cases of pulmonary embolism. In this series of cases we have experienced only two cases of embolism, both of them minor, with the patients surviving. . . . The presence of a respiratory infection or cough, or the history of a recent respiratory infection may lead one to expect a higher proportion of post-anaesthetic pulmonary complications, no matter what agent or technique is used. The increase is more marked with spinal anaesthesia than with cyclopropane anaesthesia. . . .

“There is a very great increase in pulmonary complications following