

One hour before operation a hypodermic containing one-fourth grain of morphine sulfate and one-hundredth grain of scopolamine hydrobromide is given. If the sedation is not sufficient, one-eighth grain of morphine sulfate is given intravenously or hypodermically as often as necessary during the operation. By using the proper sedation, these patients do not remember having a lumbar puncture or being operated upon. Most of them sleep throughout the operative period and afterwards for many hours. During long and difficult operative procedures an intravenous injection of 10 per cent glucose solution is given into a vein in the leg. These patients often receive a blood transfusion at the end of the operation. . . . The average age for the first 500 cases was 39 years. The oldest patient among this group was 83 years. The youngest was 8 years. . . . The average length of the operations in this series was fifty-three minutes. A total gastrectomy required two hundred fifteen minutes. . . .

"For this series the average total dose of novocain was 242 mg. The average number of injections per patient was 2.6. The largest dose given to any one patient was 2100 mg. of novocain. A definite free flow of spinal fluid was obtained, but the patient was most resistant to the drug. His operation was an appendectomy and excision of a left varicocele. The smallest dose was 25 mg. of novocain for a hemorrhoidectomy. . . . There was an average fall in blood pressure of only 14 points. . . . The incidence of headache (2.5 per cent after continuous spinal anesthesia) . . . is no greater than when anesthesia is given by the former single injection method. . . . This method has no greater incidence of urinary retention than the ordinary method of spinal anesthesia. . . . The incidence of retention was 3.1 per cent. . . .

There were 19 cases with pulmonary complications, making an incidence of 3.8 per cent for this series of 500 cases. . . . There were no motor or sensory disturbances, no cranial nerve palsies or other neurologic phenomena. . . . There were 27 deaths among this series of 500 cases, putting the gross mortality at 5.4 per cent. . . . In none of these deaths do we believe that the anesthetic agent had any part. . . . Every operation was begun and completed under spinal anesthesia. . . . We hope that this method of spinal anesthesia proves to be safer and more controllable than older methods."

J. C. M. C.

NEUWELT, F.; LEVINSON, S. O., AND NECHELES, H.: *Studies on Shock. III. Variability of the Shock Syndrome in Toxic Drug Shock. Surgery* 9: 503-507 (April) 1941.

"We have been interested in the condition of hemorrhage and shock and its treatment by various infusions. Animal experiments were performed in which profound shock was produced by various means. . . . We employed various drugs in order to produce shock: histamine, peptone, croton oil, and anesthesia. There was no constancy in the effects of the above drugs when used on anesthetized and unanesthetized dogs, nor was there any constant correlation between the dose of the drug and the production of shock in the individual animal in our 46 experiments. . . . Even when profound shock is produced, changes in blood pressure, alkali reserve, and extent of hemoconcentration vary widely from experiment to experiment. Profound or even fatal capillary shock may occur without the development of hemoconcentration at any stage of its course." 7 References.

J. C. M. C.