

used and also in mortality. The Committee in studying case records recorded the following types: A. General inhalation anesthesia. B. Spinal anesthesia. C. Strictly local anesthesia. Mortality figures were reported in detail in the publication and, in summary, show a decline in rate from 6.8 per cent in 1930 to 2.8 per cent in 1941 for all our appendicitis cases. Too many elements enter into the cause of this important decline for us to be able to state that the type of anesthetic used was responsible. It is of interest, however, to note the change in fashion and the trend in mortality. Local anesthesia . . . can be dismissed in a few words. Of the 19,401 cases, only 135 received strictly local anesthesia. . . . The striking feature is the great decline in the proportion of cases in which general anesthesia was used. . . . Apparently spinal anesthesia was used in the early years largely in the bad risk patients such as those with respiratory ailments in which it was unwise to use inhalants. . . . The mortality rate in the spinal is still somewhat higher than in the general series. If the spinal rate continues to decline as it is doing it will soon overtake and pass the more slowly declining general rate. Another point to be remembered is that, even now, spinal anesthetics are undoubtedly preferred if the physical condition of the patient is such that he is not too good a risk for general. This of course raises the mortality rate. We have no report on other more unusual anesthetics for they have been used so seldom that we did not record them." 2 references.

J. C. M. C.

SCHAFFNER, V. D., AND FOUND, E. M.
Spinal Anesthesia in Thoracoplasty.
J. Thoracic Surg. 12: 190-197 (Dec.)
1942.

"At the Nova Scotia Sanatorium we began to use spinal anesthesia for thoracoplasty in the latter months of

1938, and from then until the end of 1941 it was employed approximately 350 times. This paper contains a report on 335 consecutive cases. We have been so satisfied with its use that, at the present, it is the anesthetic of choice in practically all cases. . . . A few days prior to operation a complete blood picture including the sedimentation rate, a thorough heart examination, the vital capacity, and venous pressure are carried out on the patient. A systolic blood pressure of 95 mm. of mercury, or less, is considered a contraindication for high spinal anesthesia. . . . Routinely, all patients receive 50 Gm. of glucose twice, the day before operation. Nembutal (gr. 1½) is given at bedtime. If the patient is known to expectorate a large quantity of sputum, some expectorant (that is, resyl tablets) is given for two days before the operation and the patient is instructed to 'raise' as much sputum as possible before the premedication is given on the morning of operation. . . . As a preliminary sedative it is our custom to give nembutal, 1½ gr., one and one-half hours before operation and morphine, ¼ gr., with hyoscyne, ⅕₁₅₀ gr., one hour before operation. Often, if necessary, morphine, ⅓ or ¼ gr., is repeated just before the patient enters the operating room. . . . The technique described by Etherington Wilson . . . with certain modifications is used in all cases. . . . Nupercaine (1:1500) is employed as an anesthetic agent. . . . If . . . apprehension is apparent, a few inhalations of nitrous oxide and oxygen are given immediately before the incision is made. . . . In very nervous individuals a very light nitrous oxide and oxygen mixture is administered throughout the operation. . . .

"At the end of operation, strychnine, ⅕₃₀ gr., is given hypodermically, to alleviate the decreased muscle tone. . . . The patient is quietly transferred from the operating table to his bed,

the foot of which has been raised previously about fourteen inches from the floor. In the room, oxygen is given intranasally at the rate of 2 L. per hour. . . . We consider it very important that the patient's fluid intake during the first twenty-four hours postoperatively be in the vicinity of 2,500 cc. . . .

"Immediate vomiting (that is, during the operation) occurred in seven cases, or 2.1 per cent. . . . Mild vomiting (that is, twenty-four hours postoperatively) is usually controlled by the administration of glucose-saline solution intravenously and by substituting codeine and nembtal for morphine. . . . Prolonged vomiting (that is, three days postoperatively) occurred in only seven cases or 2.1 per cent. . . . Immediate retention of urine (that is, twenty-four hours postoperatively) occurred in thirty-eight cases, or 11.1 per cent, nearly all being male patients. . . . Moderately prolonged retention of urine (that is, three days postoperatively) occurred in two cases, or 0.6 per cent. . . . Minor headache (that is, a mild headache lasting two days postoperatively) occurred in twelve cases, or 3.6 per cent. Here the treatment consisted of keeping the patient's head low and avoiding turning as much as possible. Major headache (that is, severe headache lasting six days postoperatively) occurred in three cases, or 0.8 per cent. In these cases the frontal and occipital pain was so severe that nausea and vomiting occurred. Here the treatment consisted of intravenous glucose-saline solution up to about 2,000 cc. daily, the administration of pituitrin, $\frac{1}{2}$ cc. every thirty minutes for four doses each day, and keeping the patient's head low even while he is being washed and fed. Radicular neuralgia occurred in three cases, or 0.8 per cent. . . . Cyanosis was never a disturbing factor in any case, and all cases responded to inhalations of oxygen or

carbon dioxide and oxygen if necessary. Shallow respirations were observed in eighteen cases or 5.4 per cent. These were treated with coramine. . . . If necessary, a mixture of carbon dioxide and oxygen was given. Irregular respirations were observed in three cases, or 0.8 per cent. . . . Minor fall in blood pressure occurred in fifty-five cases, or 16.5 per cent. . . . Before the systolic pressure falls to 60 to 70 mg. of mercury, restorative measures should be taken. The patient should be tilted into a Trendelenburg position of twenty-five to thirty degrees. Ephedrine, $\frac{1}{2}$ gr., should be given subcutaneously occasionally followed by pitressin, ten minims. . . . If the patient does not respond to the above measures, he should be given 150 cc. of hypertonic saline intravenously, followed by 500 to 750 cc. of glucose-saline solution, 5 per cent. Only seven cases, or 2.1 per cent, required the entire treatment mentioned above. In three cases, or 0.8 per cent, blood transfusion was required on account of blood loss and shock. We have found that blood transfusion is actually needed infrequently. . . . Postoperative spread [of disease] in the contralateral lung occurred in eight cases, or 2.4 per cent. . . . Postoperative spread of pre-existing disease occurred in two cases, or 0.6 per cent. . . . Postoperative atelectasis has occurred in three cases, or 0.8 per cent. . . . To date there have been no anesthetic deaths (350 cases) under high spinal anesthesia." 8 references.

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HAND, L. V.: *Spinal Anesthesia: Factors Influencing Its Success.* J. A. M. A. 121: 32-35 (Jan. 2) 1943.

"The success of any anesthesia is dependent on three general factors: (1) the patient and his disease, (2) the choice of agent and method of administration and (3) the skill and experi-