innervation in the post-traumatic neuralgias, which should be followed with care, are as follows: (1) Relief during the period of effective sympathetic block with procaine must be complete. (2) The persistence of relief for a period of over two hours indicates that repeated injections may result in further improvement with more prolonged periods of freedom from discomfort and that ultimate lasting recovery may be attained without recourse to actual operation. (3) When sympathetic block with procaine has given complete relief for only a short interval, upper thoracic sympathectomy or resection of the lumbar ganglia is reasonably certain to succeed. In the case in which diagnostic block has been followed by no response, sympathectomy is not likely to succeed and some other course of treatment should be adopted. Experience in the recent war has further emphasized the importance of preliminary procaine block in order to avoid useless operations, as these invariably lead to a further deterioration of the patient's morale. . . .

"In 1930 I reported that the sympathetic vasomotor fibers could be blocked temporarily by procaine as effectively as by direct operation. Two preliminary papers, following a year's period of clinical use, showed that maximal vasodilatation can be brought about by paralyzing the sympathetic fibers in the anterior spinal roots (spinal anesthesia), by injecting procaine around the upper thoracic or lumbar sympathetic ganglia (paravertebral block) or by infiltrating the vasoconstrictor axones in the principal nerves to the extremities (peripheral nerve block). . . . These methods have stood up well under the test of time and continue to be the most effective tests for determining the degree of vasoconstrictor tone and differentiating between states of excessive vasoconstriction and occlusive vascular disease. Except for the recent substitution of differential spinal block for full spinal anesthesia, a method devised at this hospital by Sarnoff and Arrowood, there have been no important modifications in these procedures. . . .

"In thromboangiitis obliterans and arteriosclerosis the experience of the Peripheral Vascular Clinic has shown that our earlier hopes for an accurate prediction of the ultimate postoperative improvement in circulation have not been consistently borne out. While some 90 per cent of patients with obliterative vascular disease in whom the popliteal pulse is present will show a rise in temperature of the foot following paravertebral or spinal block, when the popliteal pulse is absent the great majority will have no post-injection rise. Nevertheless, some 40 per cent of this group will have a good response following resection of the three upper lumbar sympathetic ganglia. It is evident that a vasoconstrictor block of short duration does not permit full development of blood flow through patent small collateral vessels. Perhaps this difficulty will be overcome through the production of safe, longer-lasting anesthetic drugs." 52 references.

J. C. M. C.

WIGGINS, S. C.: *Factors which Modify the Choice of Anesthesia in the Surgery of Trauma.* Am. J. Surg. 74: 788–793 (Nov.) 1947.

"All cases in the surgery of trauma are initially emergency operations, but for the purpose of reconstruction or plastic repair may be secondarily elective operations. In these cases there are many factors which modify the choice of anesthetic agents and methods of administration. There are those due to the general condition of the patient and others which are the direct result of trauma or incidental to trauma. . . . The choice of an anesthetic agent is modified more by the

analysis of the complicating factors . . . than the proposed surgery. . . . In the majority of cases general anesthetics, preferably cyclopropane-oxygen and pentothal sodium, are used for operations above the diaphragm which will allow a high oxygen concentration to be administered. In the patient in poor condition, regional anesthesia for upper extremities is chosen. In the abdomen and lower extremities spinal anesthesia is indicated with the exception of a very bad risk patient when regional and gas-oxygen anesthesia are employed. Sodium pentothal as a total anesthetic is to be condemned as it produces a profound depression of respiration in order to control pain and reflexes, together with the difficulty of keeping an even level of anesthesia, also, there is the danger of vomiting in the emergency cases. Curare is used as an adjunct to a light inhalation anesthesia or pentothal sodium in combination with gas and oxygen and to facilitate the introduction of the intratracheal tube to complete induction if respiratory tract spasm is in excess. Curare is employed where a reduction of the general anesthetic agent is necessary to prevent over-concentration in the patient in poor condition or the general anesthetic is not sufficient to control the reflexes of respiration or the abdomen.

"From the beginning to the end, the safety and well being of the patient in the surgery of trauma is of supreme importance. First, the complete knowledge of the patient's condition, secondly, the knowledge of the drugs used in anesthesia and their action on the patient in the presence of disturbed physiology and pathology, and last but not least, the efficient selection and administration of these drugs to obtain the most satisfactory results during and after operation are important requisites."

J. C. M. C.

WRIGHT, G. A.: *Complicated Surgery of the Abdomen with Reference to Anesthesia, Drainage, Pre and Post-operative Care—with Case Reports.* Virginia M. Monthly **74**: 418–422 (Sept.) 1947.

"The cases herein reported embrace only those having peritonitis or more than a regional scope, all of which were drained. It should be specifically mentioned that this series, consisting of 267 cases, were exceptionally ill patients. Our records show a mortality of 1.8 per cent—that is a total of five cases. . . . An immediate operation will not correct an already existing peritonitis; therefore, under pre-operative measures of a supportive nature, they usually become more favorable surgical risks, with a lesser tendency to bring surgery into disrepute. . . . The selection of an anesthetic is an all important problem, whether it be drop ether, gas-oxygen and spray ether, sodium pentothal, spinal anesthesia, or what not, the latter serving remarkably well by producing excellent muscular relaxation; however, it is not adaptable in all cases, being contraindicated in respiratory and other conditions with which you are no doubt familiar. . . . Lower abdominal operations can be done painlessly under [spinal anesthesia using] small dosage. In our hospital we have been using metycaine and thus far have not had a fatality from its use."

J. C. M. C.