

Stellate Ganglion Blockade and The Cerebral Circulation

DESPITE a considerable increase in knowledge concerning the cerebral circulation which has occurred in recent years, in a large number of physiological states and in clinical disease, the role of the known autonomic efferents to cerebral vessels remains quite obscure. There seems to be little doubt, on the basis of studies in animals, that stimulation of the cervical sympathetic chain is usually capable of producing a modest vasoconstriction in various parts of the brain or that a comparable vasodilation may be produced by stimulation of the greater superficial petrosal nerve. The physiological role which these efferents play in man, however, has not been established. By measurement of cerebral circulation in patients without acute cerebrovascular disturbances, three independent groups^{1, 2, 3} have found no evidence of cerebral vasodilation following stellate ganglion blockade, so that its rationale in similar patients remains to be demonstrated.

In animals, and less directly in man, vasospasm has been found to occur in the brain under certain conditions, and cervico-thoracic sympathetic blockade has been proposed in various forms of cerebrovascular accident in an attempt to alleviate a hypothetical aggravating spasm. It has not been shown that such spasms occur in the clinical conditions in question, that it would be effected by the cervical sympathetic chain if it did occur, nor that blockade of the stellate ganglia would relieve it. In a recent extensive study which measured cerebral circulation in acute cerebrovascular affections before and after such treatment, an increase in cerebral blood flow occurred only in those patients whose pretreatment values for that function were low;⁴ to what extent that effect was attributable to the statistical artifact of regression toward the mean is not readily

determined. However, in the eight patients who improved clinically (out of the total of 28), cerebral blood flow invariably increased.

It is obvious that it will be many years before enough is learned about the pathological physiology of acute cerebrovascular lesions to constitute a self-sufficient basis for rational therapy. Meanwhile, questions regarding the efficacy of various forms of treatment are still capable of being answered on the basis of well controlled, objective, clinical studies. Reports in this field which attempt to fulfill those criteria are, unfortunately, very few,^{5, 6} and do not as yet permit the conclusion that stellate ganglion blockade is of demonstrated value in acute cerebrovascular lesions as a whole or in any particular subgroup.

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What Price Tranquilization?

THE overwhelming application of the phenothiazine group of drugs (tranquilizers) in clinical medicine, including premedication, has

provoked some people to re-evaluate the role of drugs of any kind in the control of the patient in the preanesthetic period. These drugs

have been used as a major or minor part of the process of preparation of the patient for the induction of anesthesia. Their usefulness in this area has not been clearly established, although their application is almost universal and usually enthusiastic. There seems to be little doubt that the phenothiazine group of drugs has a profound influence on the responses human beings make to situations. There seems to be little doubt also that in order to induce influence of such an extent that the responses are consistently detectable it is necessary to administer doses which often cause side actions of an undesirable nature. There is a price to pay for the influence exerted.

Traditional practice dictates that the drugs used in premedication allay apprehension, reduce "reflex irritability," diminish metabolic activity, contribute analgesia, and modify the patient's responses so that he is more readily and more safely anesthetized. It has been assumed that with suitable dosage and appropriate balancing of various drugs these objectives can be accomplished with minimal adverse effect. It has been assumed also that alterations in responses to the situation of anesthesia induction and surgery can be accomplished only with drugs or that they can be accomplished more satisfactorily or easily with drugs. There is ample evidence to indicate that with the administration of ordinary doses of the usual drugs, including the tranquilizers, there is significant disturbance of respiration

and circulation. There is a price to pay for the influence exerted.

If it is assumed that the drugs used for premedication are used only for the preparation of the patient for the anesthetic process and not as a part of the process itself, it seems reasonable to ask whether or not the price paid for the influence of these drugs is too much for the results secured.

One presumed advantage of the phenothiazine group of drugs is its ability to so alter the patient's response to situations that it is possible to apply appropriate psychiatric therapy more effectively. Under this concept, the drugs are not expected to produce the desired therapeutic effect but rather they are employed primarily to facilitate the therapy. Is it not possible that the drugs used in premedication have been used erroneously in that they have been expected to prepare the patient rather than set the stage for more appropriate preparation?

If it is assumed that "more appropriate" preparation of the patient includes a more complete explanation of the process of anesthesia, a more complete evaluation of the patient's emotional make-up, and the development of mutual confidence and understanding between anesthetist and patient, then it might be possible to reduce the price to be paid for tranquilization in the preanesthetic period by elimination of drugs or by a considerable reduction in the dose employed.

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What You Read

THE subject matter of the scientific articles appearing in ANESTHESIOLOGY is dependent upon the interests of the authors who write the articles. It is apparent to most readers of this journal that the subject matter of articles has been changing. In 1943, 48 per cent of all articles dealt with the clinical practice of anesthesiology; 18 per cent concerned clinical research; 18 per cent reported data from laboratory research; and 2 per cent were of methodology. In 1958, these figures had changed to 12 per cent clinical practice, 32 per cent clinical research, 38 per cent laboratory research, and 10 per cent methodology. In the

final issue of 1958, nine of ten original articles reported data from animal studies.

The reaction to this change by many readers is to accuse the Editorial Board of discriminating against practical clinical articles, of being "long-haired," of never leaving the "Ivory Tower," and so on. Yet an analysis of the situation reveals two pertinent facts that do not support such conclusions: First, the percentage of manuscripts submitted for publication but rejected has not changed materially in four years, and the proportion of rejects in the several categories closely approximates the percentages of those published. Therefore, the