ROLE OF THE ANESTHESIOLOGIST IN THE MANAGEMENT OF INTRACTABLE PAIN * †

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THE management of intractable pain is at times a difficult clinical problem which taxes the diagnostic acumen and the therapeutic skill of the physician. Not infrequently, solution of this problem is possible only by the concerted effort of the patient's doctor and a number of specialists who contribute their individualized skill toward a common goal. Among this group is the anesthesiologist, who often is requested to lend his knowledge and technical skill to aid in this problem. In view of the fact that in some quarters there are differences of opinion as to what can be contributed by the anesthesiologist to the solution of this problem, it may be of benefit to discuss the proper role of this specialist in the management of intractable pain. Before doing so, however, it is necessary briefly to mention some fundamental concepts of pain.

Most people know what is meant by the word pain, but have great difficulty in defining it. This is because pain is a highly personal affair, entirely subjective in nature, and often a complex physiopsychological phenomenon which defies laboratory study (1). At the present time, it generally is agreed that pain is always a combination and integration of 2 components: *pain perception* and *pain reaction* (2). The perception of pain, like the perception of other sensations, such as temperature and touch, is a neurophysiological process accomplished by means of relatively simple and primitive neural receptive and conductive mechanisms. It is considered to be measurable and constant, although it can be modified by drugs and psychic factors and completely obviated by interruption of its pathways by chemical (nerve block) or surgical means. The reaction to pain, on the other hand, is a complex physiopsychological process which involves the cognitive functions of the individual. It is a feeling state, or what Aristotle called "the passion of the soul," and represents the emotional and the physiological expressions resulting from the perception of pain. It is what the individual feels, thinks, and does about the pain he perceives. The pattern of reaction depends, in part, on what sensation means to the

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individual in the light of his past life experience and his attitude toward it. The latter, in turn, depends on the mood, the emotional status, the will, the state of the various cerebral processes, the presence or the absence of anxiety, and many other factors. In other words, the patient's complaints and his physical and mental responses to the perception of pain are the manifestations of his reaction. There is no constant, necessary, or proportionate relationship between the perception of pain and the reaction thereto. The obvious conclusion is that the "quale" or feeling state is a completely subjective phenomenon and is to the one that suffers the most relevant aspect of pain (3). This is one of the most important and fundamental facts about pain which must be accepted with its full implications if one is to be successful in managing patients with intractable pain.

There are several other important characteristics of pain which must be kept in mind. The intensity of pain arising from a lesion is independent of the size of the lesion and when two or more sources of pain stimuli exist coincidentally perception of pain is monopolized by the most intense. There is lack of adaptation to pain. An individual does not become accustomed to pain, but rather more "sensitive" to it. Pain of long standing, no matter whether moderate or severe, produces physical and psychological deterioration which vary widely between individuals and may be evidence of basic personality differences (4). Patients with chronic pain have a gradual but complete alteration in their attitude to their environment. Consequently, they have no other interest and the pain becomes in fact a consuming problem which completely dominates their lives. In such cases, interruption of pain pathways with consequent complete abolition of pain perception cannot be hoped to solve the problem entirely—in many instances, the problem is much more complicated and necessitates a long-term application of psychotherapeutic and rehabilitative measures as well.

PROPER ROLE OF THE ANESTHESIOLOGIST IN PAIN CONTROL

During recent years considerable interest has been shown by anesthesiogists in the management of pain not associated with operations. A number of publications advocating or reporting, or both, the formation of "nerve block clinics" or "pain clinics" have appeared in the medical literature. Some of the authors (5, 6) have suggested that the anesthesiologists, of all physicians, is particularly well qualified to undertake the control of pain because, in his daily work in the operating room, he deals directly and inevitably with pain and its prevention. As expressed by one outstanding anesthesiologist, "There is no other field of medicine more ideally suited to carry on the therapy of pain than ours" (7). These reports have led uninformed anesthesiologists to believe that they have special abilities and aptitudes to manage patients with intractable pain. While it is true that the anesthesiologist has certain attributes which make him fit to make significant contributions toward the solution of the problem, it is important that

he be cognizant of the great differences between individual technical procedures for the prevention of pain perception and the broad general problem of the management of a patient with a serious pain problem. The latter implicates total or ultimate management of a case and requires many special qualifications and attributes which will be discussed subsequently.

As pointed out by Alexander (4), the role of the anesthesiologist in the management of intractable pain may be one of two categories: (a) as a provider of special technical aid which may serve to promote the over-all management by diagnostic or therapeutic procedures, (b) as the individual responsible for the over-all management of the patient. In most instances, he will be in the first category and will act as a consultant whose contribution will, of necessity, be an exercise rather than a discipline, since the procedures he can offer are inherently limited in their place among the many things which must be done for most patients with severe intractable pain (4).

The anesthesiologist has a number of special attributes which make him a valuable colleague, who, under suitable combination of circumstances, can contribute significantly to the solution of refractory pain problems. He has or should have developed exceptional skill and dexterity with nerve-block procedures to interrupt pain pathways for surgical operations, and although proficiency in this method for surgical anesthesia does not necessarily insure success when they are employed to control nonsurgical pain, it is a great asset. His everyday experience with depressant drugs, particularly the analgesics and the sedatives, make him acutely aware of the definite limitations and the disadvantages of, as well as complications from the use of these medicinals. This knowledge and experience make him a particularly useful consultant in the management of this phase of therapy. Finally, the anesthesiologist, in his daily practice, sees and cares for patients who fear pain and consequently he naturally develops a sympathetic understanding, a considerate feeling and patience for those who suffer. This is, without doubt, the most important and greatest single qualifying attribute (4).

All of these are commendable qualifications, to be sure, but, as important as they are, they are not sufficient to make the anesthesiologist especially qualified in managing the over-all problem. This is because management has many ramifications and requires a *thorough* knowledge of the patient and his disease. It may entail many unusual diagnostic procedures involving neurologic, radiologic, laboratory, and various other data which must be properly integrated and interpreted. Moreover, the case may involve definitive therapeutic and rehabilitative measures which may be outside the sphere of anesthesiological practice. Furthermore, it is necessary for the physician who assumes the important responsibility of managing patients with a pain problem to be willing to devote a great deal of time and effort, more than many doctors are willing to spend to the solution of the problem. Finally,

he must have a special knowledge for pain mechanisms together with training in the general manifestations of painful states and their characteristic patterns. As Alexander (4) has emphasized, it is perhaps unfair to expect the anesthesiologist to assume such diversified duties and responsibilities, but if he is that rare individual who has these special attributes together with the tenacity to face repeated discouragement, he may qualify for the position as the over-all manager of the patient with intractable pain.

REQUISITES FOR OPTIMAL RESULTS

Regardless of which category he may find himself, the anesthesiologist can contribute significantly to this problem only if he observes certain important requisites.

Perhaps the first and one of the most important is that he must assume responsibilities and discharge obligations as a physician rather than act merely as a technician who is an expert in inserting needles. Even in the cases where he is acting as a consultant skilled with nerve blocks, it is important that the anesthesiologist have an insight to the problem. His behavior toward the patient must be that of the doctor who is particularly interested in the patient's welfare. He must bring the patient a quiet and considerate humanity and a confidence and security based on the conviction that he, the physician, will do all possible to help solve the problem. The anesthesiologist, as well as any other physician who is involved in any way in the management of pain, must make the patient feel that his unique individuality is recognized and his problem is not meaningful to him alone.

It is essential for the anesthesiologist to make, confirm or reject the diagnosis, even when he is acting in the capacity of a consultant. Even if the diagnosis is obvious, it is advisable to investigate the problem fully because in some cases additional information may be obtained which will aid him in performing his task better. To accomplish this, a detailed history and thorough physical examination are essential together with knowledge of pain syndromes and the underlying mechanism. Taking the history will afford the physician the opportunity to become acquainted with the patient, to investigate his personality, and what is most important, to establish rapport with him and win his confidence—factors which are so important in the management of any patient, but particularly those with intractable pain.

At this juncture, it is important to interject a few words regarding the responsibility of the anesthesiologist or any other consultant to the patient's physician. Since the success of the over-all management of the patient with chronic pain in a large measure depends on the development and the maintenance of unswerving confidence in his personal physician, it is the duty of all consultants not to say or do anything which will cause deterioration of that confidence (4).

Once a diagnosis has been made, it is necessary to determine whether nerve blocking is indicated. It is important to employ this

method in indicated cases only, for, unless the haphazard and careless selection of patients is avoided, the results will be poor and the method will come into disrepute. In fact, the anesthesiologist can do more harm than good if he assumes or even condones the deprecative attitude toward nerve blocks of "Let's try it out and see if it will work—we've got nothing to lose." If the blocks are not indicated, there *is* a great deal to lose—the confidence of the referring physician and the patient, who might be left disillusioned, skeptical, and critical of further treatment to the point of being uncooperative during future therapy.

If nerve blocks are indicated, it is necessary to decide what is accomplished with the procedure—that is, whether it is being performed for diagnostic, prognostic, or therapeutic purposes. *Diagnostic blocks* are performed to secure information concerning the mechanism of pain present in the case and to corroborate other data. It is essential to have a thorough knowledge of pain perception for proper interpretation of the results of diagnostic blocks. *Prognostic blocks* usually are done to predict the probable effects of prolonged interruption of the pathways. This may provide important information to the neurosurgeon if surgical section of the pathways is contemplated and will afford the patient an opportunity to experience the effects of interrupting the pathway such as numbness, paresthesia, and perhaps weakness. It is important to point out that the approach to diagnostic prognostic blocks is different from what it is when performing *therapeutic blocks,* which, of course, are done to produce lasting relief.

Once it has been established that the block is indicated, it is necessary to inform the patient about the various phases of the nerve block management. The purpose of the block, the general outline of the procedure, the effects that may be expected, what may be accomplished, and what is being sought must be explained clearly to the patient. If it is explained beforehand that the initial block may not produce the desired effects and that several blocks may be necessary before the efficacy of the method can be determined, the patient is less likely to become discouraged before all the treatment has been completed. The necessity for his cooperation should be particularly emphasized, for an informed patient is likely to be a cooperative patient. Throughout his discussion, the anesthesiologist must demonstrate full confidence in this method of management; for, unless the physician believes in the method himself, the results will be uniformly poor no matter how effectively the pain pathways are interrupted. On the other hand, one outstanding authority has found that more than 60 per cent of all patients who are blocked for pain derive an appreciable degree of relief provided the operator is sincere in his attempt to give the patient relief (4).

Experience with the block procedure to be employed and a familiarity with the drugs which are suitable and reliable for each particular case is another important requisite. Nerve blocks must be

performed carefully and correctly with meticulous attention to anatomic detail and with utmost skill and gentleness. The practitioner should be fully acquainted with the structures that are traversed by the needle and the complications inherent in such procedures. It bears emphasis that haphazard introduction of a needle in the general area of a nerve in the hope that it will be anesthetized must be abandoned. Unpredictable variations in anatomy and tissue responses and the approach to nerves through the intact skin impose enough inaccuracy without introducing the additional one of improper execution due to a lack of knowledge of technique. This is particularly important when the block procedure is done for diagnostic or prognostic purposes, because in such instances much depends on the results of the procedure. It is, therefore, essential to localize exactly and precisely the involved nerves and to employ small amounts of solution. Thus, while for therapeutic purposes in most instances a large amount of solution can be used without affecting the result of the block, such large amounts will spill over and affect other nerves and are, therefore, contraindicated in diagnostic or prognostic procedures.

During and following nerve blocks, it is essential to assess carefully the results as objectively as possible. Observation of the reaction of the patient to the formation of the intracutaneous wheal, to the insertion of the needle through pain-sensitive structures, and the paresthesia aids in evaluating the problem. Following the block, the completeness of the interruption of the nerve impulses should be ascertained. When the adequacy of the block procedure is established, the desired effects for relieving the pain must be assessed carefully. This may require observation from a few hours to several days or weeks. The amount, the type, and the duration of relief obtained should be noted and recorded carefully.

It is important to realize that the nerve block method of managing intractable pain has certain limitations and is not completely innocuous. Chemical neuritis and neuropathy with paralysis can occur; and, accidental pneumothorax, total spinal anesthesia, circulatory and respiratory collapse, and even death have been reported (8). Unless the anesthesiologist is ready to admit that analgesic blocking has certain limitations, is replete with certain disadvantages, and not infrequently is attended by failure, the results will be disappointing to both patient and physician. Some of the many factors which may take a part in producing failures include: (1) difficulty in identifying pain pathways even after careful diagnostic procedures, (2) anomalies in bony landmarks and location of the nerves, (3) the necessity to use smaller volumes of solution, and (4) last, but not least important, is that pain is subjective and interpretation of the results must be made largely on the basis of the patient's reports. Although in some cases it is simple for the patient explicitly to estimate the degree of relief, in most instances of long lasting intractable pain he may be unable to state exactly how much or how the block modified his pain. This is

understandable when we consider the many extraneous factors which may modify his reaction to the change produced by the procedure.

It is important for the anesthesiologist to realize that nerve blocks, in most instances, contribute only a small part to the total solution of the problem and are thus to be considered as an adjunct to other methods of therapy rather than the sole form of treatment. Frequently, intractable pain requires the joint effort of the patient's physician and a number of specialists. In passing, it might be mentioned that the formation of a true *Pain Clinic* and the active participation of the anesthesiologist in such a group is of great value in the management of this problem. Such a clinic should be under the direction of a highly trained individual particularly interested in, and thoroughly familiar with, all phases of pain and its management. It should include a neurologist, a neurosurgeon, a psychiatrist, an internist, an orthopedist, a radiologist, and a physiatrist, in addition to the anesthesiologist. This group can review difficult diagnostic or therapeutic pain problems, or both, and thus act in a consulting capacity. Moreover, meeting of such a group affords an excellent opportunity to exchange ideas and knowledge about this difficult problem.

SUMMARY

Attention is again called to the fact that the management of intractable pain is a difficult clinical problem that should interest every practitioner and that frequently requires the joint effort of several physicians in various fields. The anesthesiologist or any other physician who is proficient in executing analgesic blocks can play a significant role in the management of patients with intractable pain, provided he observes certain requisites. A correct diagnosis, an understanding of pain mechanisms, an adequate knowledge of the anatomy and the neurophysiology of pain, a thorough knowledge of the techniques and the agents best suited for various analgesic blocks, and an objective assessment of the results are important requisites without which optimal results cannot be realized.

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