Beyond the Needle

Expanding the Role of Anesthesiologists in the Management of Chronic Non-malignant Pain

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CHRONIC pain is a major health care and social problem. Involvement in pain management represents an opportunity for practitioners of anesthesiology to expand services beyond the operating room. Pain management is already an integral and important component of anesthesiology practice, and the specialty of anesthesiology is committed to its management. Anesthesiologists occupy prominent positions as practitioners, educators, researchers, and administrators. Anesthesia residency programs are required to provide education and training in pain management, and numerous pain fellowship programs are organized under the auspices of Departments of Anesthesiology. Pain is a recognized subspecialty of the American Board of Anesthesiology, and extensive efforts are expended in education and certification in pain. Pain is comprehensively discussed in the standard anesthesiology textbooks. Our major purpose of this article is to suggest that added opportunities exist for anesthesiologists in chronic non-malignant pain management. Further progress requires that anesthesiologists learn new conceptual models of chronic pain, acquire non-traditional skills, and become comfortable in different professional roles.

Anesthesiologists’ skills in regional anesthesia contributed to advances in management and secured for them an important role in chronic pain management. Unfortunately, many chronic pain patients are inappropriate candidates for such treatments. Much of the confusion surrounding their treatment with nerve blocks results from anesthesiologists extrapolating from their management methods for acute and cancer pain, where pain relief is the goal, to chronic non-malignant pain where long-term pain relief is usually an unrealistic goal. Anesthesiologists for many years have recognized that nerve blocks are contraindicated in the two large subgroups of patients most debilitated by chronic pain: patients with no identifiable organic abnormality and patients whose disability appears to be grossly excessive given the known physical problems. Many patients not appropriate for nerve blocks and who require chronic pain treatment have no access to multidisciplinary pain centers because of their geographic location, financial factors, and the application of stringent selection criteria. Consequently, they represent a population with an unmet need. Therefore, their contributions notwithstanding, anesthesiologists could expand their horizons beyond nerve blocks.

This article reviews the development of pain management as a specialty in anesthesiology. It summarizes the challenges chronic pain patients present to anesthesiologists whose primary mode of helping is to perform procedures. It describes an expanded role for anesthesiologists, either directing or participating, on multidisciplinary teams. Regional anesthesia, although important, is only one of the tools anesthesiologists bring to comprehensive pain management. Regional anesthesia requires judicious application in an appropriate context to be of maximum benefit to patients.

The task for anesthesiologists seeking to serve pa-
tients for whom traditional procedurally based treatments are ineffective is not to become more expert in the newest intervention or state-of-the-art technology, but rather to acquire the skills necessary to function effectively in the role of educator and motivator (physician-healer).\textsuperscript{19-21} The challenge for anesthesiologists is to create an expanded role that uses the full complement of their expertise and skills and that simultaneously provides services within a model that recognizes the complexity of chronic pain. For patients in whom conventional procedurally based treatments are ineffective and in those who have not found success at traditional pain clinics, the authors advocate a self-care rehabilitation approach that underscores patients' active responsibility to manage their lives despite pain. In this biopsychosocial model, pain is considered to be simultaneously physical and psychological and the emphasis is on pain as a life structuring process rather than solely a biological process.

The challenge is how best to train anesthesiologists in biopsychosocial chronic pain management to complement their regional anesthesia skills. With long-term chronic pain management as the goal, education of anesthesiologists should include psychosocial aspects. Anesthesiologists need not reject interventions such as nerve blocks but rather use them as an adjunct to a broad-based biopsychosocial approach.

The anesthesiologist, as a member of a multidisciplinary team, helps to facilitate patient functioning and emphasizes the active role of the patient and broadens management goals beyond often unattainable pain relief. Anesthesiologists become long-term providers for patients with chronic pain, functioning primarily as educators and motivators. A multidisciplinary structure is described that uses a simultaneous interview technique and accommodates the integrated management of chronic pain through a biopsychosocial approach. These concepts are illustrated with descriptions of the multidisciplinary pain program developed at the Seattle Division of the Veterans Affairs Puget Sound Health Care System (VAPSHCS) to treat this difficult and challenging patient population.

The History and Development of Pain as a Specialty

The introduction of cocaine as a topical local anesthetic in 1884 and its rapid adoption for use by injection resulted in surgeons developing regional anesthetic techniques.\textsuperscript{24,25} Anesthesiologists subsequently became proficient in providing regional anesthesia for surgical procedures. The application of nerve blocks for pain management\textsuperscript{26-28} provided the historical template on which the current involvement of anesthesiologists has evolved.\textsuperscript{28,29} In 1936, Ravenstine established a nerve block service in the Department of Anesthesiology at Bellevue Hospital in New York.\textsuperscript{30,31} By the 1950s, many anesthesiology-based pain relief clinics, using nerve blocks as the primary treatment or diagnostic method, were established in the United States and in the United Kingdom.\textsuperscript{30-32,34}

It was recognized that many patients with chronic pain fared poorly despite nerve block therapy alone.\textsuperscript{15} This observation led to a closer examination of the nature of chronic pain\textsuperscript{15,35} and the suggestion that physicians treat such patients in conjunction with input from other disciplines. With the development of a coordinated multidisciplinary program in the early 1960s, Bonica formalized the notion that complex pain problems could be managed most effectively with a team approach.\textsuperscript{36} The emphasis was on diagnosis and management, with each member contributing specialized knowledge and skills to the common goal of making a correct diagnosis and developing the most effective therapy. Anesthesiologists, with their unique nerve block skills, were integral team members whose clinical role remained largely technical and firmly linked to a biomedical model of pain.

In 1977, Engel\textsuperscript{37} proposed an alternative view of medicine, the biopsychosocial model, which subsequently was adapted to chronic pain.\textsuperscript{30} From this perspective, chronic non-malignant pain is conceptualized as the result of complex and inseparable interactions involving biological, psychological, social, and cultural factors.\textsuperscript{39,40} The focus shifted from pain as a biological process to the analysis of pain as experienced by the patient and communicated to others. Professionals involved in chronic non-malignant pain management now have a theoretical template from which to explore the nature of the pain experience\textsuperscript{40} to provide better pain management. Biomedical interventional techniques are considered to be of limited use because it is recognized that chronic pain is rarely caused by nociception alone.\textsuperscript{36,37}

The Enigma of Chronic Pain

Carron's\textsuperscript{40} statement that "minimal pathology with maximum dysfunction remains the enigma of chronic
pain” succinctly epitomizes the dilemma of the anesthesiologist who uses a biomedical approach. From the biomedical perspective, the patient is expected to adopt a passive role while submitting to the expert recommendations of the physician. Pain is viewed as the result of a disease or injury, and it is assumed that identification of its nociceptive origin enables appropriate intervention. Both parties assume that the physician will use the full range of technical skills, expertise, and resources in search of a physical cause and cure of the patient’s pain. Cure or symptom relief is the desired outcome. When such efforts fail to either identify a cause or to provide adequate relief, the patient is referred to the next physician, and the process begins again. Sternbach describes this process as a “pain game” and notes that the fundamental challenge in chronic pain is to modify this process. We prefer the term treatment imperative because it emphasizes the interpersonal and social pressures physicians experience in their efforts to help patients.

Although Carron’s opinion that “anesthesiologists who use blocks as their primary or sole modality of therapy should not be treating patients with chronic pain” seems radical, it may be relevant for patients who lack organic abnormality or whose disability is excessive. Such management is likely doomed to failure if one is judging success with regard to long-term outcomes. Biomedical pain practitioners should be encouraged to restrict their interventions to those patients who present with high levels of psychosocial functioning and clear organic etiologies indisputably amenable to nerve block therapy. Such restraints would severely limit the practice of anesthesiologists interested in chronic pain unless they adopted an expanded role of educator and motivator.

The etiology of back pain is unclear in more than 80% of patients presenting to family practitioners. By the time patients are referred to a pain specialist, they have usually had many somatic treatments that have failed to provide long-term benefit, and the relationship between manageable organic abnormality and observed disability is unclear. This “referral filter effect” concentrates cases of unclear etiology and overwhelming psychosocial dysfunction in specialty pain clinics. Chronic pain patients exhibit a complex melange of features, characterized by depression, conflict with the medical and legal systems, emotional issues, family dysfunction, and substance abuse problems. As a consequence, care-seeking is an integral aspect of the pain experience, and excessive health care use ensues.

Chronic pain patients are enigmatic if their caregivers’ ideas and treatments are limited to a biomedical approach, and as a consequence, caregivers are unable to offer rational management based on objective information. The biopsychosocial model regards nociception as inextricably embedded within a complex web of physical, psychological (cognitive, emotional, and behavioral), and sociocultural factors. Rather than being puzzled by such patients, the biopsychosocial anesthesiologist accepts the limitations of biomedical explanations and interventions with regard to chronic pain and seeks to help by other means. A multidimensional perspective on pain is acknowledged by the International Association for the Study of Pain (IASP), which defines pain as simultaneously a physical and psychological experience. It is pivotal to note that objective findings of tissue damage are not required for a report of pain to be considered real. As such, there is no need for reported pain and disability to relate linearly to objective physiological findings.

Functional disability is an important aspect of the chronic pain experience. In patients suffering with chronic non-malignant pain, there often is little correlation between the reported pain, physical findings, results of diagnostic tests, and observed disability. The anesthesiologist working with chronic pain patients is encouraged to recognize that disability is not solely a function of injury, but that it also incorporates the domains of attitude and lifestyle.

Chronic pain accounts for a disproportionately large amount of medical care use, although these patients often do not have objectively confirmed signs to match their symptoms, which would justify high levels of medical intervention. Severity of disease is not linearly related to health care use as illustrated by patients with chronic low back pain using more health care resources than patients with multiple sclerosis. In chronically ill populations, psychosocial factors predict health care use better than the number or severity of physical symptoms. Recognizing these factors avoids unnecessary tests and referrals. It is important to appreciate these aspects in the current healthcare environment, which places a premium on minimizing health care costs.

The Role of the Anesthesiologist in Chronic Non-malignant Pain Management

The primary role of the biopsychosocial anesthesiologist is as a physician-educator, not as a technical expert.
The challenge for anesthesiologists is how best to complement their regional anesthesia skills to render more comprehensive pain management services. They need not reject nerve blocks and precise, sophisticated technologies, but rather use their technical expertise within a broad-based biopsychosocial approach. Unless judiciously delivered in an appropriate biopsychosocial context, nerve blocks are interventions that might help patients feel better in the short term, but they do not address the fundamental problem of being overwhelmed by the psychosocial consequences of chronic pain in the long term. Anesthesiologists are urged to not limit their concerns solely to biological issues and to expand their skills beyond traditional biomedical methods.

The biopsychosocial model/17,38 considers chronic pain as an illness rather than as a disease.23-55 Shifting from a biomedical to a biopsychosocial approach has profound ramifications for the anesthesiologist. A major impediment to its unconditional acceptance by anesthesiologists is the misconception that a biopsychosocial model is antagonistic toward biomedical approaches and that biopsychosocial and biomedical approaches are mutually exclusive. Biomedical ideas and methods are actually subsumed under a biopsychosocial mantle. The biopsychosocial model is inclusive and fully accommodates all biomedical aspects, placing them in a broad context and providing guidance in the advisability and timing of their use. The major difference with the biomedical approach is in the wider scope of inquiry and intervention in the biopsychosocial model. In this model, biological factors are only one of many complex influences on pain.

The challenge for anesthesiologists is how to contribute more than biological and technical expertise toward the care of chronic pain patients. Anesthesiologists working with “enigmatic” patients should learn to value the caring and healing aspects of medicine, at least equally to the science and technology to develop the skills necessary to help such patients. Effective management requires interventions at complex social and interpersonal levels and at molecular and cellular levels. Sir William Osler’s observation of a century ago that “it is more important to know what sort of person has a disease than to know what disease a person has” remains relevant currently for chronic pain patients.

In a biopsychosocial framework, anesthesiologists are encouraged to function as physician-healers (educators and motivators) and not solely as nerve block technicians. A physician-healer is a skilled clinician, educator, motivator, and patient advocate with good judgment. Regardless of whether sophisticated invasive technology, physical rehabilitation, or cognitive-behavioral approaches are used, the physician-healer recognizes that the significant issues are more about caring and healing than the specific tools and interventions. A technician views the tool as the primary intervention. Managing disease is technologic and procedural (biomedical), whereas caring for patients with a chronic illness, such as chronic pain, involves interpersonal, motivational, and educational processes. The fundamental intervention is effective communication with language as the primary therapy, not nerve blocks or medications. A caring interaction is paramount, and continuity of care supersedes intensity of management. Patient and provider beliefs, expectations, and the quality of their interactions are more important than specific management.

The chronic pain syndrome is characterized by a severely dysfunctional lifestyle centered around avoiding or reducing pain. Multidisciplinary management is recommended because it provides benefit through increased function, reduced health care use, and vocational rehabilitation.61 A self-care (self-management) practice style achieves good long-term outcomes at lower cost and with greater patient satisfaction than when a traditional biomedical approach is used.62 Self-care emphasizes patient responsibility for addressing life problems other than pain. It minimizes the role of biomedical interventions and redefines management in terms of rehabilitative, rather than curative, goals.63,65 Patient outcomes depend more on better coping than better medical intervention. The focus of biopsychosocial management is not to reduce pain but to redefine the problem, thereby leading to the goals of decreased disability and increased ability (improved overall quality of life, increased function, and decreased suffering). Immediate pain relief is not the goal in the long-term management of chronic non-malignant pain. Without knowledge or insight into the goals of chronic pain management, physicians opt for medical tests and management in unproductive efforts to control disabling or persistent pain.

It is crucial to recognize that the risks of nerve blocks are not confined to the physical complications of the procedure. Such treatment reinforces patient beliefs in an underlying abnormality best managed by biomedical procedures. Further, it maintains expectations that the patient should be the passive recipient of treatment rather than an active participant in the process, and
it fosters the illusion that the primary problem in the patient's life is pain. The end result is that psychosocial factors, which are more typically maintaining or exacerbating the patient's suffering, are neglected, and the expensive, futile, and endless search for biomedical solutions is perpetuated. The iatrogenic contribution to somatization, medicalization, and high health care use by chronic pain patients needs to be heeded and addressed.\textsuperscript{52,70} It is therefore insufficient to have one's primary function on a multidisciplinary pain team treating patients with chronic non-malignant pain be that of the technician expert in procedures and medications, whose goal is to reduce pain.

To accommodate the majority of chronic pain patients, anesthesiologists are encouraged to offer more comprehensive pain management services. We suggest that they shift from short-term impersonal technical relationships toward incorporating long-term interpersonal patient treatment into their practice repertoire. In our experience, anesthesiologists can cultivate and develop these skills for application to chronic pain management. These talents applied to forming long-term patient-provider partnerships are essential for effective management.\textsuperscript{71-76}

The Pain Clinic at the VAPSHCS: An Illustration

Overview

Our program is staffed by anesthesiologists, psychologists, and a physical therapist. Although cancer pain management, impatient chronic pain consultation services, acute postoperative pain management, and a full range of traditional anesthesiology services are offered, only the outpatient portion of the program is described. The role of the anesthesiologist differs depending on the type of patient being served. Cancer and acute pain management demand the full range of the anesthesiologist's technical skills. By contrast, in chronic non-malignant pain management, procedurally based expertise plays a minor role in the contributions of anesthesiologists to the team and to the patient. Of greater importance are the anesthesiologist’s skills as an educator and motivator.

We do not use screening criteria\textsuperscript{1} because in a closed system like ours, patients declared ineligible for a pain program will inevitably continue high levels of use with many other providers. Active litigation, psychiatric comorbidity, low potential for return to work, and drug or alcohol problems do not preclude pain clinic enrollment. The fundamental components of our program include a time-limited educational program and an open-ended, long-term care relationship. The emphasis is on continuity of care through long-term management with a stable group of providers. Involvement of spouses or significant others is actively encouraged. In our version of multidisciplinary practice, the patient is seen simultaneously by an anesthesiologist and a psychologist.\textsuperscript{87-80} The goals of such “codisciplinary management” are to communicate a total-person treatment philosophy, modify patient expectations regarding physician behavior, and to legitimize the role of psychosocial issues in pain management.\textsuperscript{78,79}

The Role of the Anesthesiologist in Education

Our educational objective is to redefine the goals, methods, and outcomes of chronic pain management. Anesthesiologists and psychologists together conduct education classes in an open, convivial, and interactive atmosphere, in which the patients are encouraged to actively participate. A variety of topics are covered, aimed at targeting key patient beliefs and expectations about chronic pain. The focus is on shifting patients from a curative to a self-care rehabilitation view of chronic pain.

Before entering our pain program, most patients have minimal exposure to the biopsychosocial approach. Their encounters with physicians occur in a traditional biomedical context that culminates in referral to the pain clinic, often because of the consequences of the “treatment imperative” and “pain game.”\textsuperscript{43} The anger that makes patients difficult to help often is fueled by communications, either explicit or implicit, suggesting that cure would be possible if only the patient had “real pain.” The anesthesiologist, as an educator, candidly discusses this mutually frustrating experience with patients and explains that many patients with disabling pain have ambiguous or absent physical findings. The normalization and legitimation of pain that cannot be adequately explained by a biomedical model is extremely important and is most credible when delivered by a physician. The openness of patients to learning about the limitations of contemporary medical science is encouraging.

The Role of the Anesthesiologist in Long-term Codisciplinary Care

The anesthesiologists role in the long-term codisciplinary care of chronic pain patients is to reinforce and
maintain the biopsychosocial focus, respond appropriately to somatic concerns, and manage medications. Anesthesiologists and psychologists working together use motivational strategies to encourage the attainment of self-directed reactivation goals in physical, psychosocial, recreational, and vocational domains. In the codisciplinary context, anesthesiologists provide "white coat credibility," thereby facilitating the ability to concentrate on the multidimensional aspects of chronic pain and to communicate and model a biopsychosocial perspective. The presence of a physician is essential to avoid the patient's pejorative conclusion that the pain is "all in my head." Patient expectations regarding legitimate areas of inquiry are easily broadened to include psychosocial dimensions by the physician addressing somatic concerns in a timely manner. The anesthesiologist provides real time reassurance and education regarding medical issues and the absence of relevant abnormality. Anesthesiologists monitor patients' physical status and potential development of new problems. Requests for referral to specialists and more diagnostic tests are addressed without undue attention to pain complaints while maintaining an appropriate focus on the goal of rehabilitation. The physician emphasizes the minimal role of surgery and provides patients with information to make informed choices. The physician facilitates addressing patient concerns regarding other interactions with the health care system as an informed consumer.

Implications for the Training of Anesthesiologists

Anesthesiologists are in a good position to expand their involvement in chronic non-malignant pain management because of their unique heritage and because no other discipline is currently training biopsychosocially oriented pain physicians. The minimum clinical pain experience required for anesthesia residents by the Anesthesiology Residency Review Committee, an arm of the Accreditation Committee for Graduate Medical Education (ACGME), is nerve block-oriented and does not emphasize interpersonal relationship aspects. Current pain training of anesthesiologist residents focuses predominantly on pain relief. The emphasis of this education is on regional anesthesia, interventional techniques, and medication management.

Anesthesiologists training in chronic pain management need more biopsychosocial instruction to provide them with a balanced perspective and to equip them to decipher the "enigma" of chronic non-malignant pain. The initial challenge is to present a realistically proportioned overall perspective, irrespective of the experience level of the trainee. Thereafter, specific areas relevant to the trainees' individual requirements build on the fundamental foundation. Although the depth of knowledge, training, and areas of emphasis may differ, the fundamentals remain constant. In addition to the pathophysiology, it is important to teach the multidimensional nature of the chronic pain experience. Trainees should know that nociceptive inputs from tissue or from the nervous system are not the sole determinants of individual pain behavior. Motivational, affective, social, cultural, and environmental factors are important in determining the behavior of chronic pain patients. Information on the role of learning, cognitive factors, and the changes in human behavior in response to environmental effects is important.

Education of physicians in chronic pain management should help them to conceptualize a person's pain as real, no matter how displayed. It also should acknowledge that pain is multiply determined by a patient's physical, emotional, social, and environmental states. Trainees should recognize language as a primary intervention in the management of chronic non-malignant pain. They should be taught to restrain their desire to provide the patient with immediate, but often transitory, relief in the interest of facilitating longer-term quality of life. Physicians should learn to recognize the psychosocial aspects of pain including depression, anxiety, anger, helplessness, personality disorders, posttraumatic stress, and adverse life circumstances. If unable to assess and treat these patients themselves, physicians should be prepared to work with a competent behavioral medicine colleague such as a psychologist or social worker with appropriate training. Pain physicians should assess that biomedical conditions are diagnosed and appropriately managed and that more tests are not always necessary. Training in forming relationships with patients allows trainees to deliver biopsychosocial management convincingly. Patients become actively involved, and the physician assumes a supervisory role (as a coach). The physician helps the patient initiate and maintain self-treatment techniques, which often involve altering habits (i.e., excessive rest) or giving up secondary gain (monetary disability or excessively supportive family behaviors).

Communication skills are effectively taught and easily learned and incorporated into routine practice, without

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significantly lengthening the medical visit or radically changing the way that medicine is practiced. Training in communication skills helps physicians engage more effectively in the process of psychosocial exploration, which is important for the management of chronic pain. Use of these skills leads to greater patient disclosure of sensitive psychosocial information and better detection and reduction of the patient's emotional distress. Providing appropriate training in chronic pain management requires instruction in mental health problems in pain management training programs and in the incorporation of mental health professionals into the pain management health care domain. These strategies more effectively address patients' unmet needs, resulting in improved rehabilitation and reductions in medical care-seeking.

Conclusion

The model of pain one adopts, whether biopsychosocial or biomedical, determines one's clinical action and reaction. It profoundly influences the choice of which issues are relevant, the interpretation of clinical information, and the manner in which clinical and research questions are framed. We present a biopsychosocial approach to the management of chronic pain and suggest that anesthesiologists can be an integral part of a medical-psychosocial team. This allows for efficient, effective, and low technology chronic care for a population of patients whose complexities outstrip the resources of a single physician. It effectively treats patients who make inappropriate or excessive demands for services within organizations striving for cost-effective management.

In such a clinic setting, anesthesiologists work closely with other health care professionals, thereby gaining added recognition outside of the operating room. Further, anesthesiologists training in the biopsychosocial model and their acquisition of interpersonal communication skills necessary for chronic pain management enhance their role as specialists in perioperative medicine and pain management. Cost-effective management of chronic pain patients, who are characteristically aggressive, high users of health care resources, benefits the medical community by providing a welcoming venue, good care, good patient satisfaction, and decreased health care use.

The codisciplinary approach incorporates low-technology, long-term care to provide for the integrated management of the health and mental health needs of chronic pain patients. It fulfills the requirements for the care of the population of patients described. In the current health care system, a codisciplinary structure is feasible in a capitated integrated network setting (e.g., health maintenance organization, Veterans' Affairs, nationalized health service). Despite this potentially large market, it has not been adopted largely because acceptance of the biopsychosocial model does not occur in a reimbursement system that is biomedically oriented. Ultimately, for wide acceptance, the structure of health care and the attitudes of caregivers will need to change.

Although the codisciplinary approach fulfills the requirements for integrated biopsychosocial care, it is not necessarily a prerequisite of such care. The ideas embodied by this method reflect a general orientation to the management of chronic pain. Others wanting to implement a multidimensional approach may use these ideas to create a clinical setting with a structure that best suits their needs depending on available resources, clinic policy, and style. Team members should be familiar with the biopsychosocial model of illness, self-management, and cognitive-behavioral methods for managing pain.

Many anesthesiologists continue to use nerve blocks as their treatment of choice. New horizons beyond the needle beckon anesthesiologists interested in using the biopsychosocial model of illness for chronic pain. Anesthesiology has the chance to broaden its sphere of influence in the pain domain. As the specialty defines itself, evolves, and develops strategies for the future, it should find itself a full partner in biopsychosocial chronic non-malignant pain management.

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