



Preface
Interventional pain management



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Guest Editor

Uncontrolled pain remains one of the greatest health care crises affecting Americans. It is the major cause of disability, a leading reason patients visit physician's offices, and the most frequent indication for diagnostic studies, including MRIs and X rays. Pain is estimated to cost the American people upwards of \$100 billion annually in direct health care costs.

Each year, investigators and clinicians publish thousands of articles on the management of pain. This enormous number is an indication of our new recognition of the complexity of pain. Pain is a universal experience, but it is a new disease. The emerging understanding of pain as a disease is accompanied by the realization that pain is not simply an unpleasant manifestation of a more important underlying problem. Instead, pain has an adverse impact on neurobiologic structures, and this impact can cause permanent damage. Thus, we have learned that early exposure to painful stimuli can lead to a lifetime of sensitization to pain; untreated pain can evolve into chronic pain; exposure to pain alters the central nervous system, leading to plastic changes in the spinal cord; and uncontrolled pain can hasten mortality. This means that some of our modern pain management therapies may improve life expectancy as well as pain control while reducing the side effects of analgesics.

The bad news is that this disease can be difficult to treat. The good news is that we have developed a variety of highly effective pain control therapies. Some of this success is due to the reconsideration of ancient and formerly discounted therapies, such as morphine and electrical stimulation, and transforming these therapies into innovative interventions. Once thought to be the scourge of America, we now recognize that opioids remain among our most effective analgesics. Unfortunately,

opioids cause significant side effects and can be illegally diverted to drug abusers. History tells us that, in 46 AD, Scribonius Largus placed torpedo fish, which are capable of an electric discharge, on the heads people with headaches. Largus was building on ancient knowledge that proximity to electrical eels and fish would mitigate pain. Today, clinicians achieve that effect with implanted spinal cord stimulators, which offer the additional benefit of improving outcomes in a variety of vascular diseases. Yet more analgesic success owes its origin to a reconsideration of toxins. Botulinum toxins, for example, which are the source of deadly and dreaded botulism, have been harnessed to modulate pain.

The emerging discipline of pain medicine has a very solid scientific foundation, and the breadth of knowledge required to remain current in this field is enormous. At the dawn of the twentieth century, Sir William Osler said, “He who knows syphilis knows medicine. Syphilis simulates every other disease. It is the only disease necessary to know. One then becomes an expert dermatologist, an expert laryngologist, an expert alienist, an expert occultist, an expert internist, and an expert diagnostician.” At the dawn of the twenty-first century, we can update Osler’s statement by saying, “Whoever knows pain, knows medicine. Pain affects every organ system. Treating pain requires the pharmacology of an anesthetist, the compassion of a complementary physician, the technical skills of a surgeon, the diagnostic skills of a radiologist/internist, the rehabilitative skills of a psychiatrist and physiatrist, and the innovation of a scientist. Rather than becoming an expert in each of these disciplines, the complete pain physician supplements his or her particular expertise by becoming an expert at multidisciplinary consultation and collaboration.”

The articles presented in this issue of the *Anesthesiology Clinics of North America* highlight incredible advances in the field of neuromodulation and pain care. They are practical and at the same time are on the cutting edge of pain care. They provide an indication of the breadth of the field while offering in-depth information on various important aspects of pain management.

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