Editorial

Neurosurgical treatment of cancer pain

ROBERTO C. HEROS, M.D.

University of Miami School of Medicine, Miami, Florida

Since I had the pleasure of writing an editorial on these authors’ earlier paper on neurosurgical procedures to control nonmalignant pain, I have been looking forward to this follow-up article. The authors have delivered the quality work expected of them. In this article, they review in a very scholarly fashion the recent literature concerning neurosurgical procedures for control of malignant pain. The article is excellent and, in my opinion, very timely. Essentially, I see it as a call for neurosurgeons not to abandon their pioneering historical role in the treatment of pain, specifically in this article, cancer pain. I consider the article very timely because it is clear that neurosurgeons are ceding this field to other specialties such as anesthesiology, neurology, and physical medicine and rehabilitation. Even of more concern is the proliferation of “pain clinics” where in some cases practitioners with very little specific training and understanding of the intricate pathophysiology of pain, develop lucrative schemes to treat pain with ineffective injections of “trigger points,” unnecessary “blocks,” and a variety of unconventional and unphysiological maneuvers.

I will begin my comments by repeating my concerns about the original article from these authors on nonmalignant pain. These comments are not meant as a criticism of the authors’ scholarly work, but rather are indicative of the limitations of the methodology they use which focused their search mostly in peer-reviewed articles published between 1966 and 2009. Granted, the authors searched for references within those articles of pertinent previous work. However, they left out a very important body of literature published in classic textbooks such as White and Sweet’s. Although I share the authors’ pessimism about the future of destructive neurosurgical procedures in the treatment of pain, I take issue with their statement that “To stimulate appropriate interest in these procedures, evidence needs to meet the current evidence-based standards through clinical trials.” First of all, I believe that from the practical point of view, it is inconceivable that appropriate large randomized studies that meet today’s standards can be developed in the present environment to test the value of some of these classic neurosurgical procedures. More importantly, I strongly believe that although the existing evidence may not meet today’s scientific criteria for Level I evidence, extensive and carefully documented clinical experience has clearly indicated the effectiveness of some of these procedures, as discussed by the authors particularly in the case of cordotomy. Such experience, again in my opinion, amply justifies the performance of many of these procedures in carefully selected patients. I believe that the lack of interest and consequent lack of experience of the current neurosurgical generation, rather than the lack of randomized trials, is the main reason for the near-abandonment of this field by the neurosurgical community. This lack of interest has various explanations, an obvious one is the fact that patients suffering pain, particularly those with chronic nonmalignant pain, are difficult and frequently many patients have to be carefully screened to select the few that are appropriate candidates for surgery. Another reason is our understandable reluctance to put some of these patients, particularly those with terminal cancer, through the stress of open, invasive procedures. However, again through the pioneering efforts of some neurosurgeons coupled with technical advances, less invasive percutaneous procedures continue to be developed and refined. As I stated in my previous editorial, we are fortunate that a few dedicated neurosurgeons, such as Dr. Burchiel, have kept this field alive and hopefully could reinvigorate it in the future.

To conclude, I sincerely applaud the very scholarly and useful review that these authors have provided. I agree 100% with their conclusion that a renewal of neurosurgical interest in the treatment of pain is appropriate and represents a unique challenge to our profession and, more importantly, would offer these unfortunate patients with intractable cancer pain an opportunity to live the rest of their days in relative freedom from pain and without the undesirable side effects of narcotic medications. I could not agree more and was particularly impressed with the authors’ very elegant statement that, “uncertainty of efficacy does not necessarily equate with a certainty of inefficacy in the surgical treatment of cancer pain.” Clearly, it is essential for neurosurgery to continue to explore and develop less invasive and elegant ways to control pain such as with neural modulation; however, as the authors eloquently point out, abandonment of such time-proven procedures as sympathectomy and cordotomy (and, from personal experience, I would add others such as Sourek’s commissural myelotomy, dorsal root entry zone procedures, rhizotomy, and cingulotomy) is highly inappropriate and a great disservice to the many patients who, when carefully selected, could benefit from them. I thank the authors for challenging us to reconsider the role of neurosurgery in the treatment of pain!

References


Response

Ahmed M. Raslan, M.D., Justin S. Cetas, M.D., Ph.D., and Kim J. Burchiel, M.D.

Oregon Health & Science University, Portland, Oregon

We appreciate Dr. Heros’ kind review of our manuscript “Destructive procedures for control of cancer pain: the case for cordotomy. A review.” In this paper we attempted to put forward the argument that even with lower class evidence, a strong case can be made for the use of destructive procedures for the control of cancer pain.

We decided to search the neurosurgical literature beginning in 1966, because we believed this would capture all reports of percutaneous procedures for pain, that at the time were considered “new.” Our focus on percutaneous procedures was driven in large part by the debilitation of most patients with cancer pain, and the reluctance to subject these patients to an extensive surgical procedure. Admittedly, we omitted the body of literature represented by texts such as White and Sweet’s 1969 volume and confined ourselves to PubMed-indexed peer-reviewed articles only.

We agree with Dr. Heros that reinventing the wheel, by producing large Class I randomized controlled trials to demonstrate with “contemporary certainty” the efficacy of some destructive procedures for cancer pain, would be a difficult task in today’s medical and socioeconomic environments. Nevertheless, since our intent was to address the unconvincing—that is, oncologists, internists, and other cancer caregivers—we recognized the value of a structured review that could withstand scrutiny in this era of evidence-based medicine. In this manuscript, we presented a relatively newer classification of evidence; the Grades of Recommendation Assessment, Development and Evaluation (GRADE) system (http://www.ahrq.gov/clinic/uspstf/grades.htm#pre), one that separates clinical recommendations from quality of evidence, and we attempted to use it to support a reconsideration of anterolateral cordotomy as a viable alternative for medically intractable cancer pain.

Essentially, the GRADE system provided us with a tool to argue, from an evidence-based point of view, in favor of cordotomy, an approach that we hoped would both persuade our nonsurgical colleagues and provide us with an opportunity to demonstrate the utility of destructive procedures in the clinical setting. Only by opening this window to past success in neurosurgical pain management could we hope to succeed with the design and implementation of a prospective trial that might serve as a further foundation for the reestablishment of destructive neurosurgical procedures for the amelioration of cancer pain.

As Dr. Heros has pointed out, interest among neurosurgeons in pain procedures has faded. Few neurosurgical residency programs expose their trainees to these procedures, and an entire generation of neurosurgeons is almost devoid of experience in this area. The combination of cancer care specialists who are unfamiliar with the potential efficacy of these procedures, the dearth of expertise in cancer pain care in the neurosurgical community, and the willingness of other specialties to assume the mantle of the “pain practitioner” have created a virtual perfect storm. The way out involves training a new cadre of neurosurgeons who have the dedication and courage to take on these challenging problems. If neurosurgeons are able to reestablish their historic role as the innovators in the field of cancer pain treatment, patients with cancer pain will be the certain beneficiaries.

We extend our deep appreciation to Dr. Heros for his insightful and constructive comments.

Reference


Please include this information when citing this paper: published online August 6, 2010; DOI: 10.3171/2010.5.JNS10778.