

## *The Anesthesiologist Outside the Operating Room: A New and Exciting Opportunity*

IN THIS ISSUE OF ANESTHESIOLOGY, Ready and his colleagues<sup>1</sup> describe their 18-month experience directing an acute postoperative pain management service. Because neither the specific techniques described in this paper (epidural opiate analgesia and patient-controlled analgesia) nor involvement of anesthesiologists in postoperative pain management are new, it is appropriate to ask why this paper serves as the focus of an editorial. What is different and exciting is that a cadre of experts based in a department of anesthesiology are committed and available 24 hours a day to manage pain following surgery.

Development of this service represents an elegant example of how basic laboratory research becomes translated into contemporary clinical practice. In the case of epidural opiate analgesia, the steps involved in the clinical application of this basic research were as follows. First, opioid receptors were discovered,<sup>2</sup> and were then demonstrated to be present in brain<sup>3-5</sup> and spinal cord;<sup>6</sup> second, animal research demonstrated that analgesia resulted from spinal application of opiates;<sup>7</sup> third, clinical efficacy of spinal and epidural opiate analgesia was demonstrated in humans;<sup>8,9</sup> fourth, increasing use of spinal opiates revealed side effects and complications;<sup>10,11</sup> and fifth, well-controlled clinical studies suggested that epidural opiate analgesia reduced morbidity<sup>12,13</sup> and, perhaps, mortality.<sup>13</sup> Finally this demonstration of efficacy lead to widespread application of epidural opiate analgesia to the postsurgical population

requiring a commitment of personnel, such as that described in this issue of ANESTHESIOLOGY.<sup>1</sup>

Inasmuch as postoperative pain has traditionally been managed by surgeons, why is a postoperative acute pain management service logically based within an anesthesia department? Ready *et al.*<sup>1</sup> identify some of these reasons, which include the fact that anesthesiologists are, perhaps more than others, familiar with the use of potent opiates, including the ability to treat their complications and side effects; are expert in the techniques required to administer these drugs over a prolonged period of time; and have extensive knowledge of pain pathways. In addition, the existing role of anesthesiologists in the postanesthesia recovery unit and the intensive care unit makes provision of analgesia a logical addition to care already provided postsurgical patients. Furthermore, as prerequisites for satisfactory application of patient-controlled analgesia, anesthesiologists have defined plasma levels of opiates required for analgesia without respiratory depression,<sup>14,15</sup> have characterized the pharmacokinetics of opiates given intravenously,<sup>15,16</sup> and are currently developing new and better infusion devices which will be used to achieve pre-determined blood levels of opiates.<sup>17,18</sup> In other words, our training and our special areas of interest suggest that management of postsurgical pain is a natural involvement for our specialty.

Ready *et al.*<sup>1</sup> also comment on the components required to establish such a service. These include interested and expert anesthesiologists who function outside of the operating room, and nurses trained in the management of postoperative pain. To the above must be added the willingness (perhaps the eagerness) of surgeons to relinquish provision of postoperative analgesia when the benefits of doing so became apparent. Clearly,

Accepted for publication August 27, 1987.

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Key words: Pain; acute; postoperative service.

this last component, cooperation between anesthesiologist and surgeon, is crucial, and all participants at the University of Washington are to be congratulated on the evolution of this program.

Future directions for research are also exciting. Though by no means all-inclusive, they include use of new and more specific analgesics—opiate and non-opiate, investigation of additional routes of administration of drugs (as mentioned by Ready *et al.*<sup>1</sup>), and possible extension of these techniques to children. In addition, we need to know why some patients derive only limited pain relief from epidural opiates, how to best manage tachyphylaxis to epidural opiates, and whether patients receiving epidural opiates can safely be cared for in a regular nursing ward, or whether a special care unit is necessary. Finally, and perhaps of greatest importance, extensive long-term studies of outcome addressing risk *versus* benefit are required.

I applaud Ready and his colleagues for their success in organizing this acute pain service. An entirely new and nearly open-ended opportunity awaits our specialty, and we should grasp the chance while it is before us.

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## *Anesthesia Mortality—A New Mechanism*

IN 1979 I POINTED OUT the error bias which pervaded all studies of anesthesia mortality and the commonly held view that, without error, anesthesia mortality

should be nil.<sup>1</sup> I wrote "A second implication of the error bias is that it explicitly precludes any new knowledge concerning mechanisms of death attributable to anesthesia. Reviewers of death protocols never entertained the possibility of undescribed and subtle mechanisms by which anesthetics could contribute to mortality." And, later, "Progress requires that reports be accepted as true accounts, that they be collected in a repository or registry, that cause-effect relationships be sought according to rigorous scientific standards and

Accepted for publication September 2, 1987.

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Key words: Anesthetic techniques: epidural. Complications: cardiac arrest; coma.