The Use of Opioids in Anesthesia Is not Especially Associated with nor Predictive of Postoperative Hypoxemia

To the Editor—It has been repeatedly highlighted in the medical literature that physicians, both in the United States and abroad, under medicate patients with pain. As a result, patient suffering is increased. This problem is most significant with regard to the underutilization of opioids. More recent publications documenting that the deleterious consequences of inadequately treated pain and accompanying stress can result in greater patient morbidity and mortality add weight to the serious nature of this problem. It is unfortunate that, even today, comments implicating opioids as particularly hazardous, without any substantial proof, continue to foster misconceptions about this class of drugs.

The review article on “Recent Developments in Pulse Oximetry” states that investigations of hypoxemia have focused on “the post-anesthesia recovery period, clearly demonstrating the high incidence of hypoxemia due to the effects of anesthetic, sedative, relaxant, and especially opioid drugs.” More than a dozen references are cited to substantiate these claims. Scrutiny of these citations does not, however, support the subtle but definite singling out of the use of opioids as carrying any greater risk for producing postoperative hypoxemia. In fact, of the nine reports cited that included in their evaluation a search for an association between the use of opioids intraoperatively and postoperative hypoxemia during recovery, none found such a link. Only one study confirmed a weak correlation between fentanyl dose (as well as halothane concentration) and lower (but not hypoxic) postoperative oxygen saturations. In addition, the finding in this study was present only in patients randomized to receive no supplemental oxygen postoperatively.

In addition to the references mentioned by Severinghaus and Kelleher, other similar investigations have consistently failed to document the intraoperative use of opioids as a practice that particularly predisposes patients to hypoxemia after surgery. Indeed, the only possible conclusion that one could draw from a literature review is that the intraoperative use of opioids is not associated with any increased incidence of postoperative hypoxemia. While occasional case reports document respiratory arrest and resuscitation with naloxone soon after surgery, they only illustrate cases of opioid overdose or reanesthetization. These uncommon circumstances arise from numerous causes (e.g., improper drug dosing, variability in patient pharmacologic response). They do not, however, demonstrate any intrinsically greater propensity for opioids, compared to other anesthetic agents, to cause postoperative hypoxemia. Indeed, I consider the ability to easily recognize (e.g., slow respiratory rate, pinpoint pupils) and specifically treat (e.g., naloxone) exaggerated opioid respiratory effects a distinct advantage.

All drugs in anesthesia carry definite, serious risks. As clinicians we develop habits and biases based in part on our experiences. It is every clinician’s continuous and difficult task to balance the impressions formed from personal experience with the more objective (it is hoped) information provided in medical journals. Unfortunately, the update on “Recent Developments in Pulse Oximetry,” while timely and authored by respected and renowned experts in anesthesia and medicine, confirms and propagates old misconceptions and scientifically unsubstantiated ideas with regard to opioids and risks associated with their use.

PETER L. BAILEY, M.D.
Associate Professor of Anesthesiology
University of Utah Health Sciences Center
50 North Medical Drive
Salt Lake City, Utah 84132

REFERENCES

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