excellent results as a sole agent, allowing rapid return of airway reflexes and good quality recovery for day cases.

My concern is that anesthesiologists not familiar with propofol may read this case report as a failing of propofol, and that would be incorrect. I continually point out to my residents that supplemental opioids, benzodiazepines, or inhalational agents will all decrease the dose of propofol required. However, if the decision has been to use propofol as a sole agent, then appropriate doses need to be given to give plasma levels of 5–6 μg/mL.*

* Kenny GNC: Practical experience with computer-controlled propofol infusion. Seminars in Anesthesia 11:S12–S13, 1992.

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77:1233–1234, 1992

In Reply:—We appreciate the opportunity to respond to the above letters. Laryngoscopy without intubation causes hemodynamic changes comparable to laryngoscopy plus intubation in young otherwise healthy patients.[1–3] Therefore, we specifically chose a total intravenous anesthetic using propofol as the sole agent, because of its reported superiority over thiopental in blunting the hemodynamic response to laryngoscopy and intubation as well as for its rapid dissipation of effect and lack of significant "hangover" properties in view of our patient's desire for rapid discharge.*[4,5] We fully anticipated that antihypertensive therapy would likely be required at some time during his anesthetic course, as evidenced by our table 1, which clearly documents this patient's routine requirement for such agents (even with adjunctive use of benzodiazepines and/or fentanyl).[6] Furthermore, the use of intravenous β-blocking agents to attenuate the hemodynamic response to laryngoscopy and intubation is hardly a novel concept, and a number of studies support their efficacy in this setting.[7–9] One of these studies using labetolol found a statistically significant difference from placebo only at a dose of 1 mg/kg.[9] Our single 5-mg dose of labetolol restored hemodynamics to baseline values and seems homeopathic in comparison, especially in the face of sustained laryngeal suspension and initiation of surgery with the CO_2 laser.[6] This fact coupled with absence of other signs of light anesthesia (sweating, lacrimation, piloerection) and use of a high-dose, constant-rate propofol infusion (as alluded to in our Discussion)[6] gave us a false sense of security that our patient's anesthetic depth was adequate.

Bennett appears to have missed the major teaching point of our case. We reported a patient who was hypertensive and unaware during methohexital-oxygen anesthesia despite multi-drug adjunctive therapy, but who was normotensive and aware during propofol-oxygen anesthesia with a small dose of an antihypertensive administered during laryngoscopy. At equivalent levels hemodynamically, propofol was associated with awareness, whereas methohexital was not. Bennett suggests that we give enough propofol to achieve plasma levels of 5–6 μg/mL. There are three problems with this recommendation: (1) we currently do not have the ability to measure real-time plasma propofol levels intraoperatively; (2) great individual variability in propofol dose and resultant plasma levels exists;[10,11] and (3) propofol has a very wide dose-response curve compared with the barbiturates.[10–12] We agree with Bennett that we needed more propofol, but the clinical endpoint to which additional drug should have been titrated remains unclear in our minds. Should we assume that patients rendered unconscious and hypotensive from lower doses of propofol have recall of laryngoscopy and intubation or other intraoperative events? And what is the endpoint for propofol infusions during regional anesthesia—sedation or loss of awareness?

Our case emphasizes the inherent difficulty clinicians face in determining whether our patients are aware during the course of an anesthetic. Refinement of technology, such as auditory evoked potentials, may one day allow us to more closely monitor for the presence of intraoperative awareness.[13]

* Edelist G: Propofol for laser endoscopic procedures. Seminars in Anesthesia 11(suppl 1):16–17, 1992.

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Hespan® and Air Embolism

To the Editor:—Hespan® (6% hetastarch, DuPont, Wilmington, DE) was supplied for many years in 500-mL bags with no air in the bag. It is now supplied in bags containing approximately 60 mL of air. Because Hespan® is commonly administered with the aid of a pressure infusion device, I draw the reader's attention to the need to prevent venous air embolism when using Hespan®.

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In Reply:—Recently, Du Pont Pharma and McGaw introduced Hespan® (6% hetastarch in 0.9% sodium chloride injection) in a new Excel® container. The previous bag did not contain significant amounts of air, whereas the new bag does. This does not affect the quality of the product, but the air may affect how it is administered. As with all infusion products, care should be taken not to introduce air into the infusion tubing when using the product. If administration is controlled by a pumping device, care must be taken to discontinue pumping action before the container runs dry, or air embolism may result. If the product is administered by pressure infusion, all air should be withdrawn or expelled from the bag through the medication port before infusion.

The package insert for Hespan® states, "If administration is by pressure infusion, all air should be withdrawn or expelled from the bag through the medication port prior to infusion."

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