

not iv sedation. Furthermore, the data provided do not warrant the conclusion that this technique is more efficacious or safe when used in an infant whose lungs are already being ventilated preoperatively.

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In Reply:—Although we cannot absolutely contend that the doses of ketamine and midazolam that our patient¹ received produced "sedation" rather than "anesthesia," our major objective in managing this particular anesthetic was not to lay the groundwork for an argument in semantics, but to produce as little physiologic trespass as possible in a fragile patient with an urgent underlying surgical condition. Although studies have shown that younger children require more ketamine on a per-kilogram basis than do older children or adults to prevent movement in response to surgical stimulation,² we are not sure that anyone has determined what constitutes an "anesthetizing" dose of ketamine in a 1,500-g infant. Preoperatively, this patient had been receiving intravenous diazepam 0.3 mg·kg⁻¹ every 4 h supplemented with intravenous fentanyl 2 µg·kg⁻¹ for control of episodes of intense agitation.

In selecting the doses of ketamine and midazolam used in this case, our underlying concern was to prevent this patient from experiencing intraoperative hypoxemia and hypercarbia secondary to agitation in response to both surgical and nonsurgical stimuli. This patient never ceased breathing spontaneously during the surgical procedure. Separation from mechanical ventilation, which had begun preoperatively, continued rapidly in the postoperative period.

In conclusion, we believe that in this particular case, we met our goals of providing excellent surgical anesthesia without worsening the course of our patient's underlying pulmonary disease. However, com-

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Collecting Blood for Autologous Transfusion

To the Editor:—Isovolemic hemodilution—the exchange of whole blood with colloid or crystalloid to obtain autologous whole blood for retransfusion while maintaining normovolemia—has recently regained favor as a technique to minimize exposure to homologous blood products.*† Unfamiliarity with the technique may be a barrier to its use.

Inserting a 14- or 16-G venous catheter, connected to a collecting bag, and waiting for the blood to collect can be a frustrating experience. Collecting blood from a 20-G arterial or central venous catheter is an

* Orr M: Autologous transfusion. *Journal of Cardiothoracic Anesthesia*. 11:7-12, 1988

† Kaplan JK: Summary. *Journal of Cardiothoracic Anesthesia*. 11:50-51, 1988

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REFERENCES

1. Furman JR, Smith MD: Caudal anesthesia and intravenous sedation for repair of giant bilateral inguinal hernias in a ventilator-dependent premature infant. *ANESTHESIOLOGY* 72:573-575, 1990
2. Reich DL, Silvey G: Ketamine: an update on the first twenty-five years of clinical experience. *Can J Anaesth* 36:186-197, 1989

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parisons of safety and efficacy of different anesthetic techniques require more than one case report to demonstrate the universal superiority of any particular anesthetic technique.

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REFERENCES

1. Furman JR, Smith MD: Caudal anesthesia and intravenous sedation for repair of giant bilateral inguinal hernias in a ventilator-dependent premature infant. *ANESTHESIOLOGY* 72:573-575, 1990
2. Lockhart CH, Nelson WL: The relationship of ketamine requirement to age in pediatric patients. *ANESTHESIOLOGY* 40:507-508, 1974

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alternate method but requires invasive cannulation. All of these methods can lead to a costly error, since slowly collected blood can clot in the collecting tubing and bag.

We use the Fenwall autologous blood collection kit (two 500-ml bags with 63 ml anticoagulant, citrate-phosphate-dextrose) and place an automatic blood pressure cuff on the same arm in which a venous catheter has been inserted into a vein in the forearm or antecubital area. By cycling the cuff at 3-min intervals, pressure is generated in the vein, and blood collection is facilitated. This technique may be analogous to the squeezing and releasing of the hand around a sponge ball that is used in awake blood donation. It is necessary to frequently shake the collection bag to ensure adequate mixing with the citrate-phosphate-dextrose. This further prevents clotting.

We use the method described by Bourke and Smith¹ to estimate allowable hemodilution. This volume is replaced with a crystalloid or