

Quotation from Article about Anesthesia Providers' Activities during Ophthalmology Cases

To the Editor:—I thoroughly enjoyed the review by Vann *et al.*¹ of anesthesia for ophthalmology. However, I was surprised by their quotation from Pecka and Dexter.²: “These authors commented that there is ‘no justification to decreasing the amount of time that anesthesiologist or nurse anesthetists spend caring for patients undergoing cataract extraction with a retrobulbar block’” (italics added).

The full paragraph is as follows:

In conclusion, [in 1995] at our tertiary medical center, anesthesia providers [did] interventions after placement of the retrobulbar block for 33% of cases (upper bound < 36%). Therefore, a retrospective study cannot determine whether, to decrease costs, a registered nurse could safely replace the anesthesia provider after uneventful placement of a retrobulbar block. A prospective study assessing patient outcome related to these interventions is required for a more meaningful assessment of present standards for monitored anesthesia care for cataract extrac-

tions . . . There is *currently* no justification to decreasing the amount of time that anesthesiologists or certified registered nurse anesthetists spend caring for patients undergoing cataract extraction with a retrobulbar block.

The word *currently* is important.

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References

1. Vann MA, Oggunnaik BO, Joshi GP: Sedation and anesthesia care for ophthalmologic surgery during local/regional anesthesia. *ANESTHESIOLOGY* 2007; 107: 502–8
2. Pecka SL, Dexter F: Anesthesia providers' interventions during cataract extraction under monitored anesthesia care. *AANA J* 1997; 65:357–60

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Anesthesia for Ophthalmologic Surgery

To the Editor:—I would like to make several comments regarding the excellent article by Vann *et al.*¹ First, I would encourage anesthesiologists to resist the use of topical anesthesia for ophthalmologic surgery except when the most competent surgeons are doing straightforward procedures in healthy patients. I have been caught several times when cataract surgery went awry and a retinal surgeon had to be called in urgently to perform surgery that could not be tolerated using topical anesthesia alone. The alternatives are to stop the procedure and induce emergent general anesthesia or to induce very deep sedation without control of the airway. A sub-Tenon, peribulbar, or retrobulbar block would have prevented the added risks of either of the above alternatives.

Second, I have performed several hundred retrobulbar blocks without using any premedication or sedation. In addition, I have been the anesthesiologist during many other retrobulbar or peribulbar blocks performed by the surgeon without any premedication or sedation. In the vast majority of cases, all that is required is a little hand-holding, encouragement, and empathy. Occasionally, for patients with high anxiety or a low pain threshold, a transcutaneous electrical nerve

stimulation unit with the electrodes placed on the temple and forehead virtually eliminates any discomfort. It is the rare patient who must have something like propofol for the block.

With a little preparation by the surgeon and anesthesiologist, it is seldom that any medication at all is required for ophthalmologic surgery. The less medication is used, the more alert and cooperative the patient will be and the less likely the patient will be to fall asleep, suddenly awaken, and move during surgery. To me, the risk-benefit ratio clearly favors the major block without sedation.

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In Reply:—We thank Drs. Dexter and Bourke for their comments on our article.¹ First, in response to Dr. Dexter, we believe that we maintained the meaning of the quotation from his article² that anesthesia care is justified during eye surgery performed under *retrobulbar block* (italics added). The administration of a retrobulbar block has not changed in the years since his article was written; therefore, the word *currently* does not change our sentiment.

Second, in reply to Dr. Bourke, we appreciate his concerns about topical anesthesia and emphasize in our article that the best technique for local/regional anesthesia considers the surgeon's skill and anesthesiologist's comfort as well as patient needs. Regarding the conversion of a phaco procedure during topical anesthesia to vitreoretinal surgery, we note that these procedures can be conducted under a sub-Tenon

block that the surgeon can administer to the topicalized eye on the surgical field. As far as his concerns about sedation, we covered sedation techniques and outcomes in the article, also noting that patient expectations as well as demographic and regional differences often account for choice of sedation during a block. We appreciate his use of alternative techniques such as transcutaneous electrical stimulation. However, use of transcutaneous electrical stimulation as an alternative to sedation techniques needs to be formally evaluated before it can be recommended for routine use.

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Backup Failure of an Adjunct Battery in an Evita 4® Ventilator

To the Editor:—Electrical power failure in the hospital presents a severe challenge to intensive care unit patients.¹ We recently experienced electrical backup failure in an Evita 4® ventilator (Dräger Medizin-technik, Lübeck, Germany), which was caused by the internal erosion of a connecting cable of an adjunct battery Dryfit A512® (Sonnenschein, Buding, Germany) to the ventilator.

Because of renovation of the power supply system in our hospital, the temporary interruption of electrical supply in the intensive care unit was scheduled. According to an advance notice from the hospital management division, the electrical supply would be stopped for only several minutes before the emergency electrical generator would start up to supply electricity. At the time of power interruption, three patients were ventilator dependent. The ventilators used in our intensive care unit are checked annually, and adjunct batteries are replaced by engineers from the manufacturers. At the time of power stoppage, two ventilators continued to function, but an Evita 4® ventilator shut down instantly without any alarm. An attending nurse noticed the incident and ventilated the patient manually using a resuscitation bag. Electricity was reestablished quickly, and the ventilator restarted immediately. The patient had no identifiable injury as a result of the shutdown.

The AC and DC power modules of the ventilator were 8 yr old. The ventilator functioned steadily with an external power supply. Because the Evita 4® is normally configured to function for 10 min with backup from a fully charged battery in case of a power cut, the battery assembly was suspected to be responsible for the problem. The ventilator was sent to the manufacturers for close inspection to identify the source of the power backup failure. Dräger Germany found that the cable connector to an adjunct battery was eroded by leaked battery solution. Inside the moist electronic unit, the minor erosion had degraded the connecting cable over time and increased the electrical resistance, leading to the malconduction to the ventilator system and power failure even though the adjunct battery was properly charged

(figs. 1–3). Close examination of the manufacturer's database for batteries of approximately 10,000 serial numbers showed that the erosion occurred rarely. The current case was formally registered in the manufacturer's incident list. The manufacturer replaced the emergency power unit of the ventilator with a Panasonic lead-acid battery (Mastushita Battery Industrial, Osaka, Japan). Dräger Japan explained that all Evita 4® ventilators used in Japan would be inspected eventually, and batteries would be replaced, because there was a risk of leakage with the current battery unit.

The internal component of life-supporting devices including ventilators is a "black box" to medical users. We have no precise information about battery life. Depending on the rate of deterioration over time, the life of a battery is usually within 3–5 yr. Regular checkup and periodical replace-

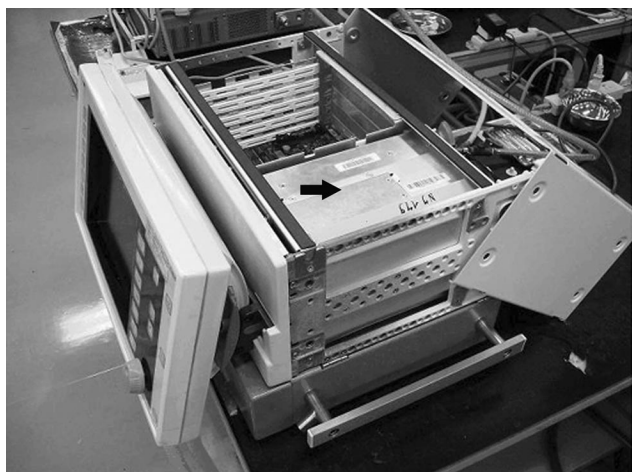


Fig. 1. The AC and DC power modules (arrow) are set in the electrical power unit of an Evita 4® ventilator (Dräger Medizin-technik, Lübeck, Germany).



Fig. 2. A pair of the same type of batteries as the failed battery is placed in the adjunct battery assembly of the DC power module. The arrow indicates the cable connector to a battery.



Fig. 3. The eroded cable connector that caused the malconduction trouble.

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