

# Anesthesia and Cancer Recurrence: Comment

To the Editor:

The effect of anesthetic technique on cancer outcomes is of particular interest. Based on the concept that invasiveness of surgery and inflammation may affect cancer recurrence, a recent editorial<sup>1</sup> commented that our recent study<sup>2</sup> did not explore surgical extent (*i.e.*, breast-conserving surgery *vs.* total mastectomy). Thus, we performed a subgroup analysis to evaluate the influence of type of anesthesia on cancer recurrence only in patients receiving total mastectomy. In the propensity-matched cohort, the Cox regression analysis revealed that there was no difference in recurrence-free survival between patients receiving intravenous anesthesia and those receiving inhalation anesthesia (table 1). The Kaplan–Meier survival curves also

demonstrated no significant differences in long-term outcome between the two groups (fig. 1). Therefore, surgical procedure did not influence the outcomes of total intravenous *versus* inhalation anesthesia for breast cancer surgery.

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## Competing Interests

The authors declare no competing interests.

Seokha Yoo, M.D., Jin-Tae Kim, M.D., Ph.D. Department of Anesthesiology and Pain Medicine, Seoul National University Hospital, Seoul National University College of Medicine, Seoul, Korea. jintae73@gmail.com

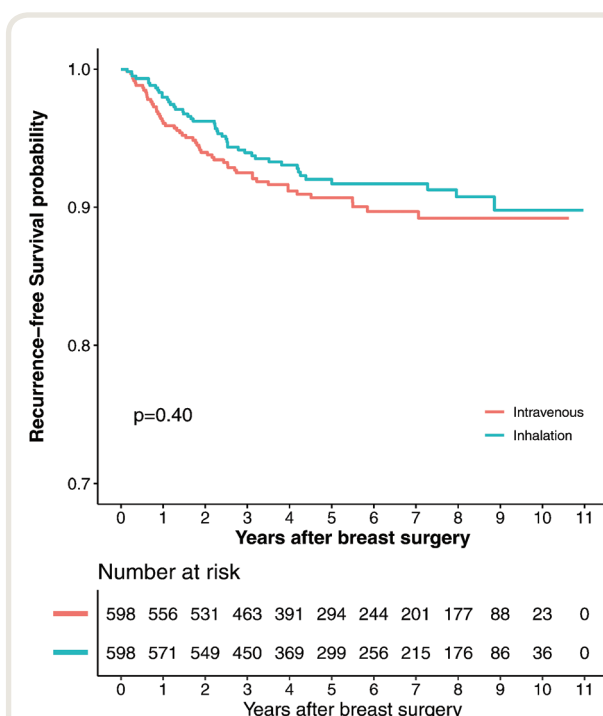
This letter was sent to the author of the original article referenced above, who declined to respond.—Evan D. Kharasch, M.D., Ph.D., Editor-in-Chief.

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**Table 1.** Multivariable Cox Regression Analysis for Recurrence-free Survival in the Propensity-matched Patients

	Adjusted		
	Hazard Ratio	95% CI	P Value
Type of anesthesia			
Intravenous (n = 598)	Reference		
Inhalation (n = 598)	0.999	0.632–1.580	0.997
Age, yr			
Age < 40	1.403	0.855–2.303	0.181
40 ≤ Age < 50	Reference		
Age ≥ 50	3.208	1.810–5.686	< 0.001
Anesthetic time (1 h)	0.981	0.664–1.449	0.923
Perioperative opioid administration	1.596	0.874–2.916	0.128
Perioperative use of ketorolac	0.913	0.610–1.367	0.659
Transfusion	2.088	0.628–6.943	0.230
Subtype			
Luminal A	Reference		
Luminal B	2.503	1.473–4.254	< 0.001
HER2 overexpression	3.124	1.762–5.539	< 0.001
Basal	2.143	1.213–3.784	0.009
Nonadherence to standard cancer therapy	2.980	1.815–4.895	< 0.001
Year of surgery			
2011–2013			
2008–2010	1.890	0.941–3.796	0.073
2005–2007	4.347	2.288–8.259	< 0.001

HER2, human epidermal growth factor 2.



**Fig. 1.** Kaplan–Meier survival curve for recurrent-free survival in the propensity score-matched patients.

## References

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2. Yoo S, Lee HB, Han W, Noh DY, Park SK, Kim WH, Kim JT: Total intravenous anesthesia *versus* inhalation anesthesia for breast cancer surgery: A retrospective cohort study. *ANESTHESIOLOGY* 2019; 130:31–40

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## Current Difficult Airway Management: Not Good Enough!: Comment

### To the Editor:

The Editorial authored by Asai and Hillman<sup>1</sup> contains the statement “If difficult airway management is predicted, general anesthesia should not be induced before securing the airway.” We believe their statement may be inconsistent with the American Society of Anesthesiologists (Schaumburg, Illinois; ASA) Practice Guidelines for Management of the Difficult Airway.<sup>2</sup> The ASA Practice Guidelines defines a difficult airway as “the clinical situation in which a conventionally trained anesthesiologist experiences difficulty with facemask ventilation of the upper airway, difficulty with tracheal intubation, or both.” In addition, Asai and Hillman do not define their use of the word “predicted.”

Contained within the ASA Practice Guidelines is a difficult airway algorithm, which recommends that the anesthesiologist consider the relative merits and feasibility of basic management choices:

- Awake intubation *versus* intubation after induction of general anesthesia
- Noninvasive technique *versus* invasive techniques for the initial approach to intubation
- Video-assisted laryngoscopy as an initial approach to intubation
- Preservation *versus* ablation of spontaneous ventilation

The ASA Practice Guidelines provide multiple options to deal with a difficult airway and outline a strategy for intubation of the difficult airway that does not mandate intubation before general anesthesia is induced.

We believe that with the availability and appropriate use of supraglottic airways, video-assisted laryngoscopes, and

flexible fiberoptic scopes, there is a reduced need to secure the airway before inducing general anesthesia. If a previous anesthesia record reveals that mask ventilation is not difficult and conventional rigid laryngoscopy is difficult, then after general anesthesia induction, a video-assisted laryngoscope intubation attempt or an asleep flexible fiberoptic intubation attempt are acceptable options. We believe our opinion is consistent with the ASA Practice Guidelines. The fact that certain practitioners may not follow the ASA Practice Guidelines is not a problem with the guidelines themselves.

### Competing Interests

Dr. Marymont has stock options in ImaCor (Jericho, New York). Dr. Vender reports no competing interests.

Jesse H. Marymont, M.D., M.B.A., Jeffery Vender, M.D., M.B.A.  
NorthShore University HealthSystem, Evanston, Illinois  
(J.H.M.). JMarymont@northshore.org

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## Current Difficult Airway Management: Not Good Enough!: Reply

### In Reply:

We appreciate the comments of Drs. Marymont and Vender<sup>1</sup> on our recent Editorial<sup>2</sup> addressing the