

for delayed functional recovery is an important step toward providing individualized, effective, cost-conscious, and high-value care in the context of the perioperative surgical home.<sup>7</sup> While we agree that the blood test used an external or “artificial” TLR4 ligand (lipopolysaccharide) that may not recapitulate biology as it unfolds during surgery, the use of lipopolysaccharide to activate a specific signaling pathway does not negate the predictive value of the test.

The scientific endeavor never stops, and interesting results will always trigger the next set of important questions. While our strong correlative findings provide a link to relevant biology, we agree that they do not prove cause and effect—and we never in our report suggested such a relationship. This is the next obvious question that we need to address. The prospect of validating TLR4 as a therapeutic target is exciting in light of preclinical studies, suggesting that preemptive dampening of TLR4 with a nontoxic agonist attenuated proinflammatory events and enhanced host resistance to infection and survival in models of burn injury and systemic infection.<sup>8,9</sup>

There is certainly important work ahead of us and room to improve on all fronts. However, our bets have been placed, and we see a clear light at the end of the tunnel.

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### Competing Interests

Dr. Nolan has a personal financial interest in Fluidigm (South San Francisco, California), the manufacturer of the

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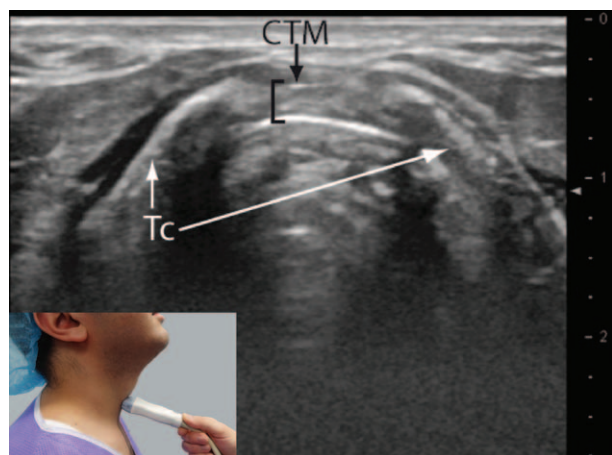
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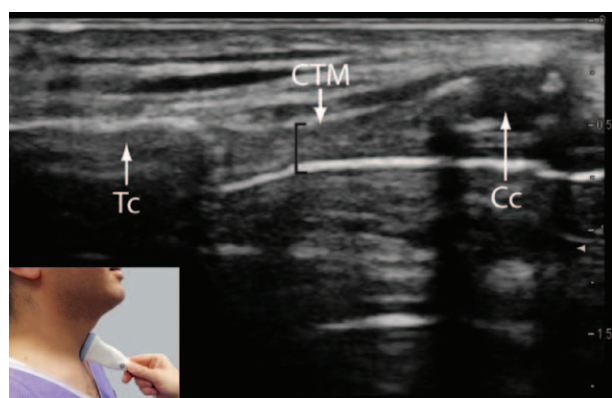
## Ultrasonographic Appearance of the Cricothyroid Membrane

### To the Editor:

We read with great interest the important article by Siddiqui *et al.*<sup>1</sup> published in the November issue of *ANESTHESIOLOGY*, demonstrating that the use of ultrasound guidance may improve the cricothyrotomy success rate in cadavers with difficult landmarks. We also read with great attention the nice Editorial View by Asai,<sup>2</sup> which accompanies this article. One image (from J. P. Rathmell) in the center of the first page of this Editorial illustrates these two articles. Unfortunately, this picture does not seem to be an image of the cricothyroid membrane but, as much as we can see, an ultrasound image of the hyoid bone, represented “as an inverted U hyperechoic curvilinear line” as described by



**Fig. 1.** Transverse view of the cricothyroid membrane (CTM). Tc = thyroid cartilage.



**Fig. 2.** Sagittal view of the cricothyroid membrane (CTM). Cc = cricoid cartilage; Tc = thyroid cartilage.

Singh *et al.*<sup>3</sup> We understand that this image was not necessarily intended to present a true sonoanatomic view but was rather an artistic illustration of airway ultrasound. This might, however, be confounding for readers not familiar with ultrasound imaging of the airway because it is the only image illustrating these two articles. Furthermore, this image might lead to puncture failure and/or adverse events if anesthesiologists try to find a view similar to the one presented in the Editorial. The cricothyroid membrane located nearly 2 cm caudal to the hyoid bone has a characteristic ultrasound feature. In the transverse plane, it appears as a slight depression at the caudal border of the thyroid cartilage, framed by the lateral wings of the thyroid cartilage or the cricoid cartilage, according to the level of the scan (fig. 1). In the sagittal plane, it also appears as a depression of 7- to 12-mm long in adults, lying between the lower border of the thyroid cartilage and the upper border of the cricoid cartilage (fig. 2). This latter picture is in agreement with the description made by Kristensen.<sup>4</sup> We hope this letter can help those who were interested in this topic.

## Competing Interests

The authors declare no competing interests.

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## In Reply:

I want to thank Drs. Zetlaoui and Benhamou for pointing out the shortcomings of the ultrasound image I created to accompany a recent Editorial View<sup>1</sup> and Original Research Article<sup>2</sup> on the use of ultrasound to improve the safety of cricothyrotomy. Truth be told, this is my very own tracheal anatomy exactly at the level of the cricothyroid membrane. However, a combination of my own anatomy (small distance between my cricoid and thyroid cartilages) and the ultrasound probe that I had on hand that day conspired to make it impossible to get an image that nicely demonstrated the ultrasonographic anatomy of the cricothyroid membrane itself. I want to thank these authors for reading the journal so closely and for taking the time to assemble the excellent images for our readers.

## Competing Interests

The author declares no competing interests.

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