Commentary: Which came first, the chicken or the egg?

Ilitch Diaz-Gutierrez, MD, and Rafael S. Andrade, MD, MHA

From the Division of Thoracic and Foregut Surgery, University of Minnesota, Minneapolis, Minn.
Disclosures: Authors have nothing to disclose with regard to commercial support.

Received for publication Aug 16, 2019; revisions received Aug 16, 2019; accepted for publication Aug 19, 2019;
available ahead of print Oct 18, 2019.

Address for reprints: Rafael S. Andrade, MD, MHA, 420 Delaware St SE, Mayo Mail Code 207, Minneapolis, MN
55455 (E-mail: andr0119@umn.edu).

J Thorac Cardiovasc Surg 2019;158:1707

0022-5223/\$36.00

Copyright © 2019 by The American Association for Thoracic Surgery

<https://doi.org/10.1016/j.jtcvs.2019.08.070>

In this issue, Dr Bianchi and colleagues¹ hypothesized that pathologic gastroesophageal reflux (GER) could influence the outcome of treatment for benign tracheal stenosis. The authors performed a retrospective study of a very large series of patients with mostly postintubation tracheal stenosis who underwent heterogeneous treatments and evaluated them with 24-hour pH testing. Interestingly, 42.3% of patients with benign tracheal stenosis had pathologic GER, but only 12.6% of patients had typical GER symptoms. The patients with abnormal pH testing were then treated either with laparoscopic fundoplication or omeprazole, and the patients with normal pH test results were observed. Patients who completed a 2-year follow-up after pH testing and initiation of treatment were then compared for tracheal stenosis treatment outcomes. The definition of successful tracheal stenosis treatment outcome was no need for further dilations, decannulation, or successful resection. The authors then used propensity score matching to compare tracheal stenosis outcomes between patients with fundoplication, patients treated with omeprazole, and patients with normal pH tests. The results from this study showed that 65% of patients with GER and fundoplication and 61% of patients with normal pH tests had favorable outcomes versus 37% of patients with GER treated medically.

We commend the authors on addressing the important yet elusive association between airway disease and GER in a subgroup of patients with postintubation benign tracheal stenosis. The authors carefully hypothesized that treating GER could influence the outcome of patients with benign tracheal stenosis and wisely avoided the Sisyphean task to determine which came first. Needless to say, a retrospective study on a heterogeneous population of patients and small sample sizes for comparisons poses major statistical challenges that cannot be completely overcome to draw

Ilitch Diaz-Gutierrez, MD, and Rafael S. Andrade, MD, MHA

Central Message

Laparoscopic Nissen fundoplication in patients with benign tracheal stenosis and pathologic gastroesophageal reflux was associated with a better outcome of the stenosis compared with medical management.

See Article page 1698.

definitive conclusions. However, when we evaluate and treat patients with uncommon problems, we do not have the luxury of data from prospective randomized trials. We will likely never have level 1 evidence to guide our management in patients with benign tracheal stenosis and GER.

What practical conclusions can we draw from this study by an expert group of tracheal and esophageal surgeons? We are of the opinion, that the report by Bianchi and colleagues in this issue of *The Journal of Thoracic and Cardiovascular Surgery* alerts us to the association of benign postintubation tracheal stenosis and GER, that we should consider evaluating patients with benign tracheal stenosis for pathologic GER, and that a fundoplication in this setting is a reasonable proposition. We'll never know which came first, the chicken or the egg; all we need to remember is that they are associated with each other.

Reference

1. Bianchi ET, Cardoso PFG, Minamoto H, Bibas BJ, Salati M, Pego-Fernandes P M. Impact of fundoplication for gastroesophageal reflux in the outcome of benign tracheal stenosis. *J Thorac Cardiovasc Surg*. 2019;158:1698-706.