

of the community. Clearly, to answer more granular questions requires more granular data. Hopefully, future versions of the STS database will allow for such investigations.

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Commentary: God is in the details!

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The negative relationship of congenital heart disease with airway anomalies has long been appreciated by health care providers. Recent studies have shown that both morbidity and mortality in children undergoing repair of congenital heart disease are significantly greater in those with airway anomalies.^{1,2} However, the wide spectrum of pathology within each group does not permit a simple generalization of this relationship. In this study, Riggs and colleagues³ have sought to define this association in a more refined way using the Society of Thoracic Surgeons Congenital Heart Surgery Database. The authors are indeed to be commended for their efforts to answer long-overdue questions regarding quantification and stratification of the risks of airway intervention in children with heart defects. Notable strengths of the study include a large study population from multiple institutions, allowing for generalization of conclusions and stratification of risk of airway intervention in a way that can be easily applied by health care providers. The study will also serve as a solid reference for



T. K. Susheel Kumar, MD

CENTRAL MESSAGE

Modern cardiac surgery databases are powerful tools to seek answers to many clinical problems. However, the lack of granularity in information captured is a major weakness of these tools.

clinicians and families involved in the care of this critical subset of patients.

However, the study falls short of expectations and leaves some crucial questions unanswered. There are no clues provided for recurring dilemmas in clinical practice, such as optimal timing of airway intervention; whether airway intervention should precede or follow cardiac intervention; optimal duration between the 2 interventions; and the level of airway support at which tracheostomy or other form of procedure should be considered, among others. In the authors' defense, the Society of Thoracic Surgeons Congenital Heart Surgery Database does not have provisions to capture this sort of granular information, thereby highlighting the fact that large databases with multicenter information are not the answer to all pending clinical questions. Single institutional studies with more granular

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information and uniformity of practice may be better positioned to answer such questions. In the end, while the size of study population is important, details matter just as much.

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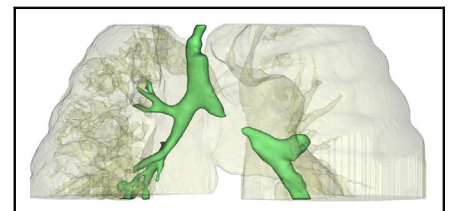
See Article page 1112.



Commentary: Congenital heart disease patients with airway anomalies do worse: We knew that, or so we thought

Reilly D. Hobbs, MD, MBS, and
 Richard G. Ohye, MD

In their article in this issue of the *Journal*, Riggs and colleagues¹ use data from the Society of Thoracic Surgery Congenital Heart Surgery Database (STS-CHD) to investigate the impact of airway anomalies and tracheal surgery on the outcomes of children undergoing congenital heart surgery. Although the presence of concomitant airway anomalies in children with congenital heart disease is well known,² there are little available data to quantify the associated risks. The authors should be congratulated, as this manuscript will be an important resource for preoperative counseling and provides a necessary framework for future studies.



Computed tomography scan showing severe left mainstem stenosis from bronchomalacia with hyperinflation on the left lung. (Reprinted from Zopf DA, Hollister SJ, Nelson ME, Ohye RG, Green GE. Bioresorbable airway splint created with a three-dimensional printer. *N Engl J Med.* 2013;368:2043-45, with permission from the Massachusetts Medical Society.)

CENTRAL MESSAGE

This study using the Society of Thoracic Surgery Congenital Heart Surgery Database helps quantify the impact of airway anomalies and tracheal surgery on congenital heart surgery outcomes.

The study included 198,674 patients who underwent cardiovascular surgery between January 2010 and September 2018. Concomitant or same hospitalization airway surgery was performed in 428 of these patients. The authors grouped patients with airway anomalies into 5 groups: patients undergoing tracheal interventions with stenosis, patients undergoing tracheal intervention without stenosis, patients with tracheal stenosis not undergoing intervention, patients with airway malacia, and patients with other airway anomalies. The main finding of their study is that patients

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