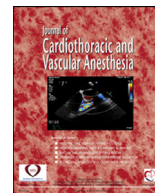


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## Editorial

## Unlocking the Secrets of Pediatric Congenital Heart Diseases by Echocardiography: A Crucial Resource for Adult Cardiac Anesthesiologists

CONGENITAL CARDIAC anesthesiology is a rapidly evolving specialty. As the number of patients with congenital heart defects continues to increase, so does the need for skilled and knowledgeable providers who can provide the best possible care for these patients of all ages.<sup>1</sup> The prevalence of adult congenital heart disease (ACHD) has increased significantly over the past few decades.<sup>2</sup> Also, patients with longstanding congenital heart disease often present as adults with uncorrected pathology and its resulting sequelae. With this increase in prevalence, there is a growing demand for specialized services for ACHD patients to ensure safe and effective patient care.<sup>3</sup>

Cardiac anesthesiologists providing care for these patients face significant challenges due to the complexity of the patient's cardiac condition and the history of surgical procedures performed since childhood. Safety-net hospitals can often see patients present with incomplete medical records and a reported history of "heart surgery as a child," which can further complicate anesthetic management, especially in the case of an urgent and/or emergent scenario. In addition, adult cardiac anesthesiologists have limited exposure to common pediatric cardiac surgeries that have consequences during adulthood. Therefore, it is helpful to familiarize ourselves with the basic echocardiographic appearance of common pediatric congenital heart diseases and their surgical management. This is especially important as more and more ACHD patients are presenting to the hospital with traditional "adult" pathologies and emergencies superimposed on ACHD due to longer lifespans. Even in the nonemergent setting, this patient population is more likely to undergo more anesthetics, further highlighting the importance for adult cardiothoracic anesthesiologists to be familiar with echocardiographic findings of different types of ACHD and subsequent repairs. With this knowledge, we can estimate the long-term effects of surgical and interventional procedures and how they affect our anesthetic plan.

Currently, there are limited hands-on training resources for cardiac anesthesiologists focused on the technical skills needed to perform congenital echocardiography. Although adult cardiac

anesthesiologists are proficient in transesophageal echocardiography, collaboration with experienced cardiac surgeons and congenital cardiology specialists helps provide insight into the complexities of the anatomy, allows us to understand techniques firsthand, and enables us to make informed decisions about the best course of management intra- and perioperatively.

In this issue, Narula et al.<sup>4</sup> presented the case of a pediatric patient undergoing double-chamber right ventricular repair. The authors described the surgical challenges this case presented and the utility of intraoperative transesophageal echocardiography in overcoming these challenges. Congenital echocardiography education is limited during postgraduate training. Therefore, case reports and e-challenges like the one presented in this issue involving patients of all ages with congenital heart disease are relevant to better understanding such procedures and their evolution at different stages throughout their lives. Highlighting the echocardiographic findings of pediatric pathology (in this case, double-chamber right ventricular), the subsequent repair, and its long-term implications, particularly in the case of a suboptimal repair, are greatly beneficial to the cardiothoracic anesthesiologist and echocardiographer in the management of ACHD. In conclusion, by understanding the basics of pediatric congenital heart diseases and their sonographic manifestations, adult cardiac anesthesiologists are better equipped to assess and address the individual needs of patients with congenital heart disease requiring surgery.

### Conflict of Interest

None.

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