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Non-cardiac Surgery in Adult Congenital Heart Disease

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Abstract

The perioperative and intraoperative care for an adult patient born with a congenital heart defect can provide a unique challenge to a surgical team. This study reviews the current literature relevant to surgeons, anesthesiologists, and perioperative nurses caring for the adult congenital heart disease patient.

As the vast majority of children born with a heart defect are surviving into adulthood, they inevitably require surgical intervention just as the general population. Many surgeons and anesthesiologists are not aware, however, of the specific hemodynamic instability that many of these patients have. This is why the surgical team should be well prepared for the procedure by obtaining a very thorough history and physical examination. Laboratory testing can evaluate any hematological abnormalities in the patient, while radiographic imaging—for example, echocardiography—can identify any residual shunting of blood through even repaired hearts. These techniques can help the team determine how judicious they should be with peri- and intra-operative fluid administration and how to properly medicate these patients during the procedure—certain anesthetics, for example, can negatively affect the patient's systemic vascular resistance and cardiac output. Such changes can lead to pulmonary hypertension and—in the case of a cyanotic heart defect such as Tetralogy of Fallot—can lead to a reversal of the shunt, known as Eisenmenger's syndrome. However, with the appropriate techniques and understanding of the patient's physiology the well-informed surgical team can manage the multiple morbidities involved in a patient with a heart defect and surgery can proceed with few adverse consequences.

Biography

Erica Sutton completed her medical degree in 2001 at The Johns Hopkins University School of Medicine and her residency and fellowship training in minimally invasive surgery at the University of Maryland School of Medicine in 2010. She is the director of Surgical Simulation at the Hiram C. Polk, Jr. Department of Surgery at the University of Louisville School of Medicine where she evaluates and develops training techniques in minimal access surgical techniques.