

## Introduction

### **Surgery for End-Stage Lung Disease**

This edition of *Operative Techniques in Thoracic and Cardiovascular Surgery* includes 2 superb articles on the surgical management of end-stage lung diseases. In the first article, Dr. Marc de Perrot describes his approach to performing pulmonary thromboendarterectomy for the management of chronic thromboembolic pulmonary hypertension. This is an underappreciated technique by thoracic surgeons and Dr. de Perrot describes the technique clearly; the text is supported by helpful illustrations. Although much of the success in managing these patients depends on patient selection, a thoughtful, well-conceived, and expertly performed operation is mandatory for these patients to do well. In the companion article, Drs. Walter Klepetko and Aigner describe their approach to performing a double lung transplant. Dr. Klepetko is one of the world's leading authorities on lung transplantation and his article on the technical aspects of the procedure is a wonderful addition to the literature. Both of these operations, pulmonary thromboendarterectomy and lung transplantation, are formidable procedures, but if performed as described by the authors, the outcomes can be excellent.

### **Replace or Repair? Techniques for Management of Ischemic Mitral Regurgitation**

The Cardiac Surgery topic is ischemic mitral regurgitation. Controversy exists regarding whether repair or replacement is the preferred modality in patients with ischemic mitral regurgitation. Previous investigations have demonstrated the benefit of preserving the integrity of the mitral apparatus, should replacement be the chosen modality. Dr. David presents an elegant description of chordal-sparing mitral valve replacement. He also demonstrates a technique for chordal replacement, should it be necessary to resect some or all of the chords, to preserve the continuity of the subvalvular apparatus. As there is general agreement that ischemic mitral

regurgitation is primarily a ventricular disease, standard repair techniques that do not address the ventricular component of this disease have been less than satisfactory. Kron has developed a technique of papillary muscle relocation as a method of improving leaflet coaptation and the durability of mitral valve repair in ischemic mitral regurgitation. The article by LaPar and Kron clearly depicts the critical steps in this operation.

### **Tetralogy of Fallot with Complete Common Atrioventricular Canal Defect**

The incidence of tetralogy of Fallot among patients with complete common atrioventricular defect is estimated to be about 6% to 10%. This defect is classified as an endocardial cushion defect with anterior deviation of the conal (infundibular) septum. The net result is a common atrioventricular valve, primum atrial septal defect inlet "canal" ventricular septal defect, and right ventricular outflow tract (RVOT) obstruction. As a result, physiology may range from a "balanced" circulation with a Qp/Qs of 1:1 to that of insufficient pulmonary blood flow, depending on the degree of RVOT obstruction. This combination of lesions poses certain unique structural and physiological challenges to the surgeon. There remains considerable controversy regarding the timing of surgery: (1) initial palliative systemic to pulmonary artery shunt vs complete repair; (2) the use of a single patch vs multiple patches to address the septal defects; and (3) the surgical approach to relieve RVOT obstruction and the need for performing a transannular patch. In the Congenital Surgery section of this issue, experts advocating either the single patch or the 2-patch technique describe their methods for repair of tetralogy of Fallot with atrioventricular canal defect. There is particular focus on closure of the ventricular septal defect and repair of the common atrioventricular valve. The modifications described by these experts have the potential to improve outcomes for these complex infants.

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