

## Introduction

Because aortic valve sparing is of such current interest, Dr. Sundt, our Associate Editor for adult cardiac disease, decided to have three articles detailing this very important and relatively new form of therapy for aortic valve disease. Likewise, the Norwood procedure continues to be a controversial issue; Dr. Jonas has highlighted some important technical areas. Finally, thoracic outlet syndrome continues to have discussion around applicability indications and therapy. Both authors, under Dr. Mentzer's direction, have done a nice job of illustrating the pros and cons of each approach.

### **Aortic Valve-Sparing Root Reconstruction: Modifications of "The David Procedure"**

Surgical techniques for aortic root reconstruction with preservation of the native valve have come into their own of late, with increasingly widespread application in a range of pathologic conditions, including Marfan syndrome, idiopathic root dilation, bicuspid aortic valve disease with associated aneurysm, and acute aortic dissection. Indeed, since the first issue of *Operative Techniques in Thoracic and Cardiovascular Surgery*, in which Dr. Tirone David and Professor Magdi Yacoub detailed their approaches, their methods and modifications thereof have become an integral part of the surgical armamentarium.

In this issue, three versions of the David repair are detailed, beginning with a contribution from two surgeons who have had excellent results with the classic "David I" operation. Drs. Matthias Karck and Axel Haverich continue to advocate reconstruction with a simple tube graft, reporting outstanding results. Concerns have been raised by some, however, that the absence of sinuses accelerates valve failure due to abrasion of the native leaflets against the Dacron graft. Accordingly, a specialized "Valsalva" graft for root reconstruction has been developed and is commercially available.

Dr. Duke Cameron of the Johns Hopkins Hospital has one of the world's largest experiences in valve-sparing root reconstruction in the setting of Marfan syndrome, and his preference is for use of this graft. His description contrasts nicely with that by Drs. Karck and Haverich.

Finally, Dr. Sundt presents a "poor man's" version of the Valsalva reconstruction based on the modifications suggested by Drs. Tirone David and Craig Miller. We hope that the reader will discover among these approaches one that is intuitive and reproducible.

### **Norwood Procedure for Hypoplastic Left Heart Syndrome**

The congenital contributions for this issue focus on different approaches to the Norwood procedure for hypoplastic left heart syndrome. Dr. Tom Spray and the group from Children's Hospital of Philadelphia have a very large experience with what can reasonably be labeled the traditional Norwood approach. The group describes their application of deep hypothermic circulatory arrest, a traditional modified Blalock shunt, and reconstruction of the neoaorta using a homograft patch.

At Birmingham Children's Hospital, Dr. Bill Brawn has evolved his technique through several stages, which are described. In the initial approach, a direct anastomosis was fashioned between the proximal divided main pulmonary artery and the aortic arch. Because this technique sometimes resulted in distortion of the coronary anastomosis, the method evolved through a transitional technique in which pulmonary homograft tissue was used to supplement the arch anastomosis. An interesting point of distinction from the Philadelphia approach is the lack of direct anastomosis between the ascending aorta and the proximal divided main pulmonary artery. The current technique at Birmingham Children's incorporates a Sano-type shunt placed to the right of the neoaorta.

The contrasting contributions from Philadelphia and Birmingham clearly illustrate the important technical challenges that await the surgeon undertaking this complex three-dimensional reconstruction.

### **Thoracic Outlet Syndrome**

Controversy continues to surround the diagnosis and treatment of thoracic outlet syndrome. Two common surgical approaches to the resection of the first rib are used. Dr. Urschel describes a transaxillary approach that avoids retraction of the brachial plexus, limits muscle division, and simplifies removal of the posterior segment of the rib. In contrast, Drs. Mackinnon, Patterson, and Colbert describe a supraclavicular approach that facilitates exposure for potential neurolysis of the C8 and T1 nerve roots, allows proximal control of the subclavian vessels, and ensures complete soft-tissue decompression.

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