

Preface

Several techniques have evolved during the past few decades for addressing lesions affecting the aortic valve, aortic root, and proximal ascending aorta. As diseases affecting the aortic valve and aortic root are varied, it is not surprising that several operative techniques have evolved and some of these techniques are based on achieving the long term durability, hemodynamic advantage, and perhaps the increased survival of the patients. The aortic root is attached to the left ventricular outflow tract and continues as the proximal ascending aorta. The proximal ascending aorta is composed of sinus aorta or aortic sinuses from which the aortic valve is suspended. The diseases can involve the aortic valve, sinus aorta, and aortic root in common such as in aortic aneurysms, ascending aortic dissection, and bacterial endocarditis. Surgical corrective procedures to address these lesions are so described in common with procedures on the aortic valve. During the past decade with the emergence of new technologies the aortic valve and aortic root surgery has changed with introduction of procedures such as catheter based interventions for aortic valve replacement, mini sternotomy approach, aortic stent grafting and valve replacement, and introduction of endoscopic surgery and robotics. Despite these advances, the basic surgical techniques on the aortic valve have not changed and these basic surgical procedures are described in this text in detail in addition to xenograft and homograft replacement of the aortic root and aortic valve. In addition to the detailed description of the surgical techniques involving the aortic root and aortic valve, a brief discussion of the normal anatomy of the aortic root, aortic valve, and closely related anatomical structures is provided to enable the readers to perform surgical procedures which are safe without untoward technical complications. Several practical issues encountered at the operating table while performing certain surgical techniques are addressed for accomplishing the operative techniques with ease.

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