Foreword

It is indeed a privilege to write a foreword to this comprehensive textbook on the care of the postoperative patient in the cardiothoracic intensive care unit (CTICU). Perioperative cardiac care has been a focus of my professional life for more than 40 years. In 1967, as a third year student at the University of Cape Town in South Africa, I and my classmates admired the extraordinary achievement of our Professor of Cardiac Surgery, Christiaan Barnard, in performing the world’s first successful heart transplant. Ten years later, as a Fellow in Critical Care Medicine and Cardiac Anesthesiology at Stanford University, I provided anesthesia for the great Norman Shumway, a fierce competitor of Dr. Barnard’s, who lost no time in telling me what he thought of my origins! Despite their differences, these two extraordinary figures had in common their pioneering spirit and ability to perform all types of cardiac surgery on adults, infants, and neonates alike. What they also had in common was their strong belief that the cardiac surgeon is “Captain of the Ship” and should take sole responsibility for patient care after surgery.

Over the last three decades, the milieu of cardiothoracic surgery has dramatically altered. The quantity and intricacy of cardiac surgical procedures - as well as the technical complexity of the support provided - have increased exponentially. Patients are older, sicker, and those coming to surgery have considerably more co-morbidity than in the past. Cardiothoracic surgeons have become more subspecialized, while the number being trained is declining. Today, most cardiothoracic surgeons recognize that postoperative care is a “team sport”, and that good patient outcome depends on an integrated, multidisciplinary approach. This has driven the development of the subspecialty of cardiothoracic critical care, provided by surgeons or anesthesiologists who have trained in critical care medicine, and whose knowledge and experience is reflected in this outstanding textbook.

The spectrum of cardiothoracic surgery has also increased extraordinarily. The past two decades have witnessed a drive toward minimal invasiveness, characterized by procedures such as off-pump coronary artery bypass grafting (OPCAB), robotic cardiac surgery, and transcatheter aortic valve replacement (TAVR). At the other extreme is the expanding capability for cardiovascular intervention in the patient with life-threatening acute or chronic heart failure, built upon the progression through a short-, medium- or long-term ventricular assist device (VAD) as a bridge to recovery, decision or transplant, or as destination therapy. The miniaturization of the pump oxygenator has facilitated emergent institution of extracorporeal membrane oxygenation (ECMO), and has revolutionized acute cardiovascular and pulmonary salvage and resuscitation.

As a consequence, the staff of the CTICU has to deal with a number of “tracks” of patient care. Patients without substantial comorbidity who undergo uncomplicated coronary revascularization or a single valve repair or replacement are candidates for the “fast track”. This usually requires an overnight stay in the ICU only, and much of the care can be protocol driven. A middle group of patients may undergo the
procedures listed above, but have substantial comorbidity, or may undergo more complex procedures such as combined valve replacement and coronary revascularization. These patients may spend several days in the ICU, or much longer if they have had perioperative complications. The third - and most challenging - group of patients undergo major, complex surgical procedures, such as mechanical circulatory support (MCS), heart or lung transplantation, or pulmonary thrombo-endarterectomy (PTE). Add to this any patient who has a catastrophic complication in the operating room requiring ECMO. Some of these patients may spend weeks in the CTICU before recovery.

The postoperative outcome of all groups of patients – but especially the latter two - is dependent on the teamwork and mutual interaction of the cardiac surgeon, cardiologist, the CTICU nursing staff, therapists (respiratory, physical and occupational), consultants in nephrology, infectious disease, gastroenterology etc., and the palliative care team. At the center of all this stands the cardiothoracic intensivist, leader of the group of physicians who not only provide 24/7 care of the patient, but also coordinate the inputs coming from so many sources.

This timely contribution to our management of the patient undergoing cardiothoracic surgery is aptly entitled “Modern Concepts and Practices”, because it truly represents the multidisciplinary team approach that is essential to assuring good patient outcomes. Its contributors represent a wide constellation of specialties and subspecialties, including cardiac anesthesiologists, intensivists and cardiac surgeons from major centers throughout the United States and Canada. It address every aspect of perioperative care: the structure and function of the CTICU; preoperative assessment and optimization of cardiac surgical patient; cardiothoracic pharmacology; the multiple body systems affected by cardiac surgery; the impact of various surgical techniques; and monitoring, echocardiography and ultrasound. It is essential reading for cardiac surgeons, cardiac anesthesiologists, intensivists, CTICU nurses and therapists - and indeed, anyone involved in the perioperative management of patients undergoing cardiothoracic surgery.

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