Book Review

Grossman’s Cardiac Catheterization, Angiography, and Intervention, 6th ed
Donald S. Baim; William Grossman, eds.

As the number of cardiac catheterizations proliferate and therapeutic invasive procedures performed in the cardiac catheterization laboratory grow in importance in the comprehensive care of cardiac and extracardiac vascular disease, the need for a catheterization “bible” grows greater. Cardiologists are becoming more rooted in angiography and are in danger of becoming, as one critic of invasive cardiologists called them, “photographers.” Data analysis has become increasingly automated, and image making and processing are now completely digitized; thus, the working cardiologist is confronted with few demands to directly interact with the creation of the data on which critical clinical decisions are made. This is particularly true for the “jack of all trades” cardiologist who renders comprehensive clinical care and visits the catheterization laboratory much like a surgeon using an operating suite.

The sixth edition of Grossman’s Cardiac Catheterization effectively continues to fill the need for a comprehensive reference. This substantial text has 35 chapters divided into 8 sections with 32 authors. It spans the gamut from the history of catheterization and invasive principles to specific techniques and clinical integration. Unlike a typical multi-authored text, 22 of the 35 chapters are written by or coauthored by either Drs Baim or Grossman. This provides a cohesive style throughout and minimizes redundancy between chapters. Chapters that are not authored at least in part by one of the two editors are those describing specialized techniques heretofore considered the exclusive province of radiologists and vascular medicine specialists. This expanded multidisciplinary approach reflects the changes in the cardiac catheterization laboratory environment, with the rendering of more comprehensive vascular care in that setting. This notion is particularly reflected in the expansion of sections dedicated to peripheral vascular diagnostic and therapeutic techniques. All chapters in this book are authored by world experts who have made seminal contributions to their respective disciplines.

The first 3 sections of the book are my favorites. “General Principles,” “Basic Techniques,” and “Hemodynamic Principles” are essential sections I demand my fellows read their first month in the cardiac catheterization laboratory. These chapters have been updated to include the latest changes in catheterization laboratory technology and thus remain fresh and relevant. At the same time, they nicely summarize much of the science that has evolved in radiological imaging and hemodynamics. Although reliance on echocardiography to determine the definitive hemodynamic significance of congenital and valvular lesions has grown in many centers, I believe that cardiac catheterization still represents the gold standard. As the population ages and aortic valve stenosis increases in prevalence and as more patients with corrected congenital defects grow into adulthood, the need for a firm grounding in the principles of hemodynamic analysis of valvular and congenital heart disease is increasingly important.

These are the very areas where the knowledge base of many young invasive cardiologists remains deficient, often because many of their mentors are no longer well versed in these specific disciplines. This makes these chapters a bedrock of seminal knowledge.

The sections on angiography and interventional techniques are written by technical masters who are both practical and articulate. One can learn the step-by-step approach on how to engage an Amplatz catheter into the left coronary artery and also encounter a scholarly read on the debate over the relative importance of periprocedural creatine kinase elevations. This combination of “how to” and “why” is the core strength of this book. Particularly impressive in this vein is the expanded chapter on peripheral vascular intervention, which is well written and illustrated, as well as beautifully and logically tabulated. It provides the cardiologist with an excellent foundation for triage of vascular patients to medical, surgical, and interventional therapies. A section on the burgeoning and controversial area of carotid bifurcation stenting sets a standard for the field.

The sections on the evaluation of cardiac function will be referred to less in the current era but serve as a useful reference to those who wish to understand ventricular mechanics. With the evolution of interventional congestive heart failure treatment, this section may become a more important resource as invasive evaluation of device performance is required.

The section on specialized catheterization techniques, especially those chapters on coronary blood flow and vascular ultrasound, are comprehensive and well-suited to give any student of the field a sophisticated grounding in these important tools in contemporary interventional practice. The additional chapter in this section on implantable devices is excellent and comprehensive, but I wonder if one would reach for this particular volume if one were seriously contemplating implanting defibrillators and pacemakers.

The final section on profiles of specific clinical entities and specific disorders is an invaluable resource. I suspect these chapters are the least read, but I think they should serve as the “final examination” for this text. They put clinical, hemodynamic, and angiographic findings in perspective, with typical and representative case examples in their respective areas. These cases can serve as excellent templates for patient care. The addition of a chapter on peripheral vascular disease to the section helps complete the mission of this book.

Is this book perfect? No. There are inherent limitations to a comprehensive text in such a rapidly evolving field. References are current only to 1999. Twenty-two pages are dedicated to brachial artery cutdowns (a technique that I have not seen in my laboratories in >30 000 procedures), but there is virtually no mention of the percutaneous brachial approach and only 2 paragraphs dedicated to the radial approach. A full chapter dedicated to stress testing in the catheterization laboratories is unnecessary. This can certainly be shortened and incorporated into other chapters on specialized techniques. Although there is ample discussion of vascular closure devices, there is little discussion of their complications. In addition, I would certainly argue that a vascular-surgical consult is unnecessary in 90% of cases of femoral pseudoaneurysms, which can be handled as a rule with minimally invasive techniques. I am also perplexed by the persistent use of “PSI” instead of “atmospheres” in the angioplasty chapter. I would also add a more comprehensive discussion of digital catheterization imaging archival and add more extensive device illustrations to the pediatric interventional chapter.

These critiques should not, however, in any way diminish the enduring contributions of Drs Baim and Grossman to the field by their constant updating of this textbook. It remains the premiere resource and primer, providing both a practical and scientific foundation in contemporary interventional practice.

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