Landmarks in Cardiac Surgery

During the 20th century, cardiac surgery emerged from the realm of conjecture and speculation into the clinical arena, upstaging less dramatic forms of surgery and winning widespread acclaim for its practitioners. The first cardiac operations were desperate procedures, undertaken mainly to treat battlefield injuries. By 1950, operations on the closed heart had become fairly common. Cardiac surgery did not begin to fulfill its initial promise, however, until the advent of the cardiopulmonary bypass machine in 1953. Once this device made open heart surgery possible, almost every form of heart disease quickly yielded to the scalpel. In 1967, the world was awestruck by the first human heart transplant. Later, we saw the development of left ventricular assist devices and total artificial hearts. Today, heart transplants are routine, and some cardiac operations are being performed as minimally invasive procedures. In view of these advances, it is hard to believe that cardiac surgery is still a relative newcomer.

Because of this specialty’s short history, many of its original pioneers remain alive and professionally active. It is fitting that as the 20th century draws to a close, the story of heart surgery be chronicled anew while these history makers are still available to set the record straight. I can think of no one better qualified to compile such a chronicle than the author of this book, Stephen Westaby, who is a cardiac surgery pioneer in his own right. Currently at the forefront of mechanical assist device technology, Dr Westaby is a prolific author who has published 6 previous books. The present volume is an outstanding addition to his bibliography.

Landmarks in Cardiac Surgery presents a wide range of information, including some material that I have never before seen in print. In addition to providing historical data, biographical sketches, and “official” portraits, it offers entertaining anecdotes and informal photos that show the human side of cardiac surgery. The first portion of the book (306 pages) consists of 8 chapters, which furnish a continuous narrative concerning the evolution of cardiac surgery. After covering the foundations of heart surgery and the advent of cardiopulmonary bypass, this section discusses congenital heart defects, valvular heart disease, thoracic aortic disease, early cardiac transplants, and mechanical circulatory support. At the end of each chapter are biographical sketches of the pioneers who contributed to the developments covered by that chapter. The narrative is exceptionally well written, informative, and entertaining. Of particular interest are the many quotes from eminent surgeons, whose words of wisdom are highlighted in special text boxes.

The second and largest portion of the book consists of 2 appendices, the first of which presents 44 landmark journal articles in cardiovascular surgery, accounting for 339 pages. By collecting all of these articles under 1 cover, the author has performed a valuable service. Because each article is in its original format, this portion of the book resembles a volume of bound reprints. The second appendix (18 pages) lists the chief pioneers of cardiac surgery, along with their major accomplishments. The book contains such a wealth of information that one wishes it were somewhat better arranged. The overall layout is satisfactory, but the biographical sketches suffer from inconsistency and unevenness in presentation. Because individual pioneers are listed according to the field in which they made their greatest contribution, it is not always easy to find the entries for those who were active in more than 1 field. Moreover, within each chapter, the order of the biographies is neither alphabetical nor chronological but rather appears completely random. Therefore, in looking for a particular entry, one must often resort to the index. In addition, the number of the biographies is uneven from 1 chapter to another. For instance, the chapter on mechanical circulatory support is followed by only 1 biography; the remaining pioneers in this field are described either within the chapter itself or at the end of other chapters. These problems would have been solved if all the biographies had been presented alphabetically, in a separate section of their own, making the book much handier for researchers.

Unfortunately, my review copy of the book was poorly bound. After minimal handling, the cover started to pull away from the pages. I hope that this is an exceptional case and not typical of the other copies.

Despite these drawbacks, Landmarks in Cardiac Surgery is a valuable resource that belongs on the shelves of cardiac surgeons, cardiologists, historians, biographers, and others interested in the evolution of medicine and surgery. I congratulate Dr Westaby for undertaking this ambitious chronicle and producing such a fine result.

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The Electrocardiogram in Acute Myocardial Infarction

As a cardiology fellow 2 decades ago, I was told by an otherwise highly prescient mentor that by century’s end, the ECG would end up in the archival display cases at the Smithsonian as an honored but outmoded bedside clinical test. Word of the demise of the 12-lead ECG, however, has proved premature. Indeed, at the close of the millennium, this inexpensive and versatile test has been reinvigorated, perhaps most importantly by the advent of thrombolysis and acute angioplasty in the treatment of myocardial infarction (MI). The success of these remarkable interventions relies on the accurate diagnosis of more subtle and atypical presentations of acute ischemia, as well as in the exclusion of its simulators, including acute pericarditis and normal variant “early repolarization.”

Dr Ian P. Clements has edited a useful but limited monograph on selected aspects of the ECG in acute MI. There are 16 chapters in all, about half of which deal with new or investigational extensions of ECG diagnoses in this area, including continuous multilead ST-segment monitoring, contemporary vectorcardiography, precordial ECG mapping, heart rate variability, single averaged ECG, QT dispersion analysis, high-frequency electrocardiography, and variance electrocardiography, as well as conventional heart rate variability analysis. At the all-but-certain risk of being as maladroit at forecasting as my beloved mentor, I will predict that few of these modalities will find a secure clinical niche in the next decade, with the notable exceptions of detection of repolarization alternans and assessment of complex heart rate dynamics.

Additional chapters deal with limitations in the 12-lead ECG, prognostic indicators, atypical ECG patterns, triage decisions based on acute ECG findings, and correlation of the 12-lead ECG with coronary artery anatomy and prognosis. The final chapter deals with ECG features of infarct-related regional pericarditis, calling attention to some important but not widely recognized findings.

Overall, the material covered is concisely presented. Proposals of electronic publication will note that most of the
references are from 1996 or earlier, so that readers wishing for an update will have to do their own Medline search rather than awaiting serial CD-ROM–type updates provided by the authors. The selective nature of this volume is evidenced by topics that receive brief or no attention. The important differential diagnosis of ST-segment elevations is mentioned in passing, as is the pathophysiology of the injury current itself. There is no discussion of non–Q-wave versus Q-wave infarcts or of the increasingly important problem of recognizing acute MI in the presence of ventricular pacing. Arrhythmias associated with acute ischemia and reperfusion also fall outside the scope of this text. Tighter editing would have been helpful in interlacing the discussions by different authors in different chapters and avoiding overlapping or parallel discussions, such as those related to prognosis and infarct localization. Because of the saltatory sequencing of topics, as well as the lack of tutorial-type presentations, this volume likely will not be as appealing to cardiology trainees or practicing physicians as its title might lead them to believe.

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**Syncope: Mechanisms and Management**

The challenge of tackling the problem of syncope is not for the faint of heart. So diverse are the mechanisms, and often so transient is the presentation and so elusive the specific cause, that patients and medical care providers alike are left frustrated. Syncope exacts an enormous personal and economic toll and has potentially serious medical-legal implications. Thus, it is rather remarkable that to date there has been no truly comprehensive book on the subject. Enter Grubb, Olshansky, and 22 other contributors, who have succeeded admirably in their aim “to bring together in one volume a comprehensive yet usable source on syncope.”

The book reads easily, is well organized and referenced, and is liberally seasoned with useful tables, figures, and “real-life” cases from patients. The authors begin with overviews of evaluation, approach, and management, aided by “busy” but clinically helpful flow diagrams. The chapters on neurocardiogenic and dysautonomic syncope are first-rate. Bradycardias, tachyarrhythmias, and use of electrophysiological studies are each nicely treated separately. It was refreshing to read clinically focused chapters devoted to neurological causes of syncope, psychiatric disorders, and chronic fatigue syndrome, respectively. The chapters on carotid sinus hypersensitivity and miscellaneous causes of syncope are relatively short but useful. Pertinent discussions then follow of syncope in the child and adolescent, the athlete, and the elderly, respectively. Some of these areas are still controversial.

As anyone dealing with the problem of syncope knows, even the most intensive evaluations may not reveal a cause. Information on an earlier version of an implantable loop recorder is presented that suggests that this relatively new tool may help establish or exclude a specific arrhythmic etiology in some patients with recurrent unexplained syncope. The chapter on driving provides much practical information, even if the authors’ approach may not always concur with that of a previously published combined AHA/NASPE Medical Scientific Statement. The book ends with an interesting discussion of medical-legal aspects relating to syncope. The importance of history and physical examination in approaching the patient with syncope comes through clearly in different sections of this book.

The overwhelming excellence of this book makes its shortcomings relatively minor. A more in-depth treatment of baroreceptor physiology and pathophysiology would have been helpful. More attention to torsade de pointes, syncope in the setting of hypertrophic cardiomyopathy, adult congenital heart disease, and long-QT syndrome (admittedly a specialized area probably deserving its own book), and mention of microvolt T-wave alternans (possibly in regard to ventricular tachycardia) would have added to the completeness of the book. There are several errors in the references. Also, some useful and important references were not included (perhaps because the book had already gone to press), such as “Diagnosing Syncope” by M. Linzer et al (Ann Intern Med. 1997;126:989–996 and 1997;127:76–86) and the most recent “ACC/AHA Guidelines for Implantation of Cardiac Pacemakers and Antiarrhythmia Devices” by G. Gregoratos et al (J Am Coll Cardiol. 1998;31:1175–1209), although the previous guidelines are mentioned. The discussion on pacing as a therapeutic consideration for neurocardiogenic syncope is not well indexed.

Although this book does not always provide the reader with specific advice on how to manage certain clinical problems, it does supply most of the tools for formulating such a management decision by its multifaceted discussions in the many areas previously mentioned. Although specific treatment approaches are provided for some problems, others require more integrative processing by the reader.

In summary, this book deserves a prominent place on the shelf of anyone involved in caring for the patient presenting with syncope. Whether an emergency room physician, cardiologist, internist, or neurologist, the established practitioner or trainee should make a conscientious and “conscious” effort to read and own this book.

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