BOOK REVIEWS

John M. Porter, MD, Book Review Section Editor

Bioartificial organs II: technology, medicine & materials
David Hunkeler, Alex Prokop, Alan Cherrington, Ray Rojotte, Michael Selton; New York; 1999; Ann NY Acad Sci; 415 pages.

The meeting, Bioartificial Organ II: Science, Medicine, and Technology, sponsored by the New York Academy of Sciences, brought together 94 participants that represented medicine, biology, material science, and engineering to spend 5 days debating the subject. This book, based on the proceedings of this meeting, represents volume 875 of the Annals of the New York Academy of Sciences. It is edited by the conference organizers.

The book is more than 400 pages and organized in seven parts, containing a total of 35 chapters. The first part is written by the main editor, and it provides an overview of the risks and requirements of bioartificial organs. Part II, “Novel Materials,” contains chapters that review immunosoluation of cells by semipermeable membranes and microcapsulation as approaches to xenogeneic cells transplant. These techniques isolate the transplanted cells and prevent access of antibodies and complement proteins to the cells while allowing access to oxygen and nutrients, providing the cells the necessary ingredients to secrete desirable products such as hormones. In addition, part II discusses strategies for creating biomimetic materials designed to control cell behavior and direct organ-specific tissue regeneration. Part III, “Encapsulation: Fundamentals and Applications,” details various types of encapsulation and the use of this technology for somatic gene therapy. The remaining four parts deal with the use of this technology in specific organ transplantation. As its title indicates, part IV, “Islet Isolation, Transplantation and the Bioartificial Pancreas,” discusses the recent scientific progress made in islet cell isolation, preservation, transplantation, and the application of microencapsulation in treating type I diabetes. Part V, “Biological Aspects,” discusses the immunologic processes that impede the use of islet transplantation of encapsulated genetically engineered cells for long-term, constant delivery of peptides in diabetics. Part VI, “Bioartificial Liver,” discusses the design and evaluation of a bioartificial liver that would perform the functions of oxidative detoxification, metabolism, excretion, and modulation of immune and hormonal systems. Part VII, “Skin, Bone, Cartilage and Craniofacial Issues,” discusses tissue engineering for craniofacial bone, computer-controlled bioreactor for large-scale production of cultured skin grafts, and tissue engineering of cartilage by cell seeding on bioabsorbable scaffold.

As expected from the Annals of the New York Academy of Sciences, this volume presents the latest scientific achievements in the subject discussed. Although the subject of bioartificial organs is not one that a vascular surgeon deals with clinically, the concepts discussed are highly interesting and indicate what is coming down the pipeline in the management of diabetes, the complications of which vascular surgeons deal with daily. The subjects discussed are important, technology-driven, and quite novel. I enjoyed reading this book and found it very interesting and stimulating.

Anton Sidawy, MD
VA Medical Center
Washington, DC


Textbook of angiology
John Chang; New York; 2000; Springer Verlag; 1362 pages.

Dr. Chang and associate editors have presented a new text in the discipline of angiology. In the preface, they suggest that a single book can no longer adequately cover every aspect of the subject, and the intent of their text is to focus on the important advances made during the past decade in selected vascular disorders. With these guidelines in mind, I will present my comments about this new text. Overall, the quality of the writing is good and reflects the expertise of the contributors. There is some repetition in different chapters as might be expected from a multiauthored text.

A highlight of this text was the outstanding chapter by Richard Fleming on the pathogenesis of vascular disease, which included wonderful figures on the different etiologic factors. However, this was the 64th chapter and had been preceded by chapters 6, 34, 36, and 60 on the same subject, and they were not nearly as comprehensive as Fleming’s chapter. The excellent chapter on diabetic vascular disease (Kumal) should be the next chapter rather than four chapters later. Improved editing in future editions should minimize these issues.

One of my measurements of the quality of a text is the presentation of “evidence based clinical recommendations for therapy.” We are fortunate to have many prospective randomized studies on vascular disorders: for example, stroke reduction by carotid endarterectomy, PTA versus bypass, lytic therapy. I believe a vascular text should present the actual data from these different reports rather than just the conclusions or recommendations. Such information was well presented in the treatment of acute venous thrombosis (Martin). But the chapters on carotid occlusive disease were weak on the presentation of ACAS, NASCET, and the four other randomized studies.

The chapter on the treatment of chronic lymphedema (Lerner) by physiotherapeutic measures was particularly enlightening to this reviewer; the before/after photographs were spectacular. Other outstanding chapters that warrant mention are vertebral artery occlusive disease (Barkauskas), radiocontrast agents (Quader), and preoperative cardiac testing (Nozzal). The chapter on composite grafts for infringuinal bypasses (Chang) proposed some configurations that I had never even dreamed about. The chapter on venous valves (Phifer) had excellent anatomic figures of the venous valve and presented some animal studies on a “prosthetic venous valve,” an area of particular interest to this reviewer.

The venous section emphasized a “European” viewpoint for the treatment of varicose veins. The novel hypothesis that degenerative joint disease is related to venous hypertension was interesting but not convincing (Arnoldi). A historical anecdote that I found interesting is presented on page 1024. This is about the king of Troy, Philoctetes, who has a chronic leg ulcer that is so foul that his shipmates set him ashore on the isle of Lemnos where local physicians treated him—not very successfully—for 9 years. In the 10th year, Machaon, a most famous surgeon of the Asclepiads, cut away the decaying flesh and applied a pressure dressing with herbs. The leg healed, the king returns to battle and wins. Machaon has a temple built in his honor. However, inter-specialty jealousy was also rampant in those days, and some
physicians spread the rumor that Machaon’s brother, a dermatologist, had been in charge of the case.

The chapter on an operative technique for a carotid endarterectomy was too simplistic. For example, it was recommended that the instruments be kept sterile until the patient was judged to be neurologically stable following the emergence from anesthesia. However, no recommendations were made for the situation if the patient awoke with or subsequently developed a new neurological deficit. The chapter on carotid occlusion did not discuss cerebral monitoring and criteria or technique for shunting. The chapter on Hemostasis was weak with only one reference after 1994 and no mention of factor V DNA (Leiden) abnormalities. Conspicuously absent were chapters on gene therapy or vascular impotency.

The text “Vascular Medicine” by Loscalzo is also a multidisciplinary presentation of similar material but lacking the international viewpoint presented in Chang’s text. Brief review of the recent Rutherford text suggests that the vascular surgeon or trainee will always need a basic comprehensive vascular surgical text and that the role of Chang’s Textbook of Angiology would be as a supplemental reference for the care of patients with unusual vascular problems.

The editors have achieved their stated objectives of presenting new, up-to-date information on the diagnosis, pathophysiology, and treatment strategies of many vascular disorders. For the interventional radiologist, cardiologist, or internist or other practitioners caring for patients with vascular disorders, the Textbook of Angiology will be a welcome addition to fill a void that currently exists among texts in the developing specialty of angiology.

Willard Johnson, MD
Department of Surgery
Boston University School of Medicine
Boston Veterans Administration Medical Center
Boston, Mass

Stent-grafts: current critical practice
Bart Domatch, Ulrich Blum; New York; 1999; Thieme; 238 pages; $99.00.

New endovascular therapies have stimulated enormous interest in the vascular community. This book is a timely, comprehensive, and balanced assessment of the present and future roles of stent-grafts. The book is captivating, with thorough, objective review of the emerging technology of stent-grafts. Specialists who perform endovascular interventions, as well as those challenged by stent-grafts, will find the book enjoyable and informative. After this book is read, it should be evident that further research of the same high caliber is necessary to assess the effectiveness of this new technology.

Jon Matsushita, MD
Northwestern University Medical School
Chicago, Ill

Writing and publishing in medicine
E. J. Huth; Baltimore; 1999; Williams & Wilkins; 348 pages.
The Chicago Manual of Style, The CBE Manual for Authors, and Strunk and White’s The Elements of Style have always been close companions of mine. While they are unable to guarantee the generation of a word-class manuscript with a clear and concise message, these texts have always been a source of helpful rules and guidelines. With such classics on my bookshelf, I had always been convinced that the purchase of any additional book on effective writing would be money poorly spent. This preconception has been revised, and a new space has been created on an already overcrowded bookshelf for Edward Huth’s Writing and Publishing in Medicine. This is a superb text that should be read by anyone who has an interest in publishing papers in the basic or clinical medical sciences. Although careful review of this text should be mandatory for the novice writer, I highly recommend it for all authors experienced enough to recognize that writing well is nothing but hard work. Huth’s book is clear, concise, and reviews the task of generating a publishable report from study formulation and literature search, to the generation of initial and revised drafts, to final manuscript submission.

Tips on preparing tables and illustrations are included, and input regarding the revision of prose for fluency, economy, and grace are well organized and especially useful. The salient points of this text are nicely summarized at the end of each chapter, and special sections are devoted to case reports, meta-analytic studies, editorials, and writing or editing books. Where necessary, the reader is also referred to helpful web site addresses for medical writers. Huth reminds the reader that scientific papers, whether focused on a fundamental problem in laboratory research or a clinical investigation, are instruments of persuasion that must be built on the principles of critical argument. Effective writing is fundamental to this process, and the guidance provided by this text will help all prospective authors to achieve this important goal.

Elliot L. Chaikof, MD
Division of General Vascular Surgery
Emory University School of Medicine
Atlanta, Ga
Angiology is the medical specialty which studies the diseases of the circulatory system and of the lymphatic system, i.e., arteries, veins and lymphatic vessels, and its diseases. In the UK, this field is more often termed angiology, and in the United States the term vascular medicine is more frequent. The field of vascular medicine (angiology) is the field that deals with preventing, diagnosing and treating vascular and blood vessel related diseases.