Handbook of Vascular Brachytherapy, 2nd ed
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Endovascular brachytherapy has emerged as the most potent weapon to prevent restenosis after coronary interventions. Six clinical trials have now demonstrated that γ- and β-radiation are effective in blocking the restenosis process in patients who develop such proliferative lesions within previously placed stents. Depending on the extent of the restenotic material within the stents, repeat interventions may result in a re-restenosis ranging from 20% to 60%. When radiation therapy has been applied, this rate has been dramatically reduced. The 2 major shortcomings of radiation therapy have been identified in recent studies and have been largely addressed. The first is a thrombotic occlusion resulting from the retarded endothelial healing caused by radiation and the exposure of newly placed stent wires. This problem has been virtually eliminated by the limited use of additional stenting within previously stented segments and by the extended use of combined aspirin and clopidogrel therapy. The second issue has been the development of new proliferative lesions in balloon-injured arterial segments outside the effective radiation zone. This problem is being addressed by more adequate coverage of the entire balloon-injured segment of the artery.

The Handbook of Vascular Brachytherapy leaves to other publications these major issues in endovascular brachytherapy. The book is primarily composed of a glossary of terms in radiation physics, biology, and oncology and a description of the various methods for providing vascular brachytherapy that are being developed. The book concludes with a list of the clinical trials of brachytherapy that have been conducted in the United States and in Europe. Despite a 2000 publication date, many of the studies that were reported within the last year only have their design and baseline features discussed; results are unfortunately missing.

This is the best quick reference to the language of vascular radiation therapy for the uninitiated, who will largely be cardiologists beginning to perform these procedures in collaboration with their oncology colleagues. The brief descriptions of radiation terms will be helpful to the cardiologists as they attempt to communicate with their oncology colleagues using a common language. At this point in time, all of these endovascular brachytherapy procedures are jointly performed with radiation oncology and cardiology participation.

The descriptions of the few commercially available systems and the other systems undergoing clinical trials and preclinical evaluation are also helpful in understanding some of the differences and similarities between them. The systems are all presented by advocates for those systems; therefore, the sections entitled “Why I Like the Specific System” is really an argument by proponents without much in the way of counterbalanced discussion of shortcomings. The cardiologists, oncologists, radiation physicists, and safety officers working with these systems and catheterization laboratory personnel working with vascular brachytherapy will find this publication helpful in understanding the systems that are being used. However, the speed with which this field is evolving is quite evident when trying to find the outcome of clinical trials. The lack of current information regarding results of trials released over the last year will undoubtedly quickly lead to a third edition. Nonetheless, while awaiting that publication, this book will serve an important purpose in providing a quick radiation physics and biology view of the systems in use and those being investigated.

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