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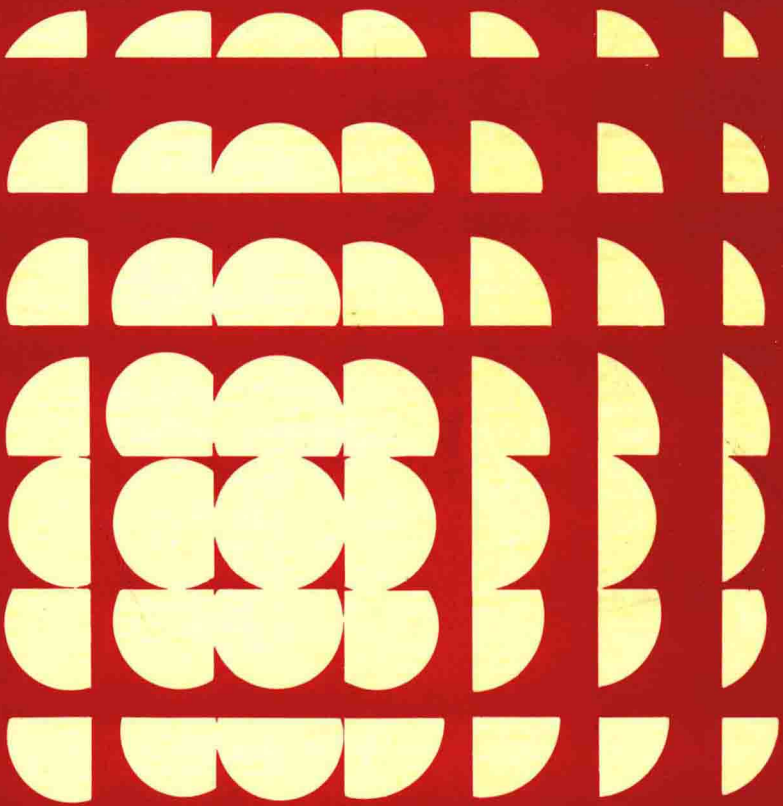
Carcinoma of the Bladder

Editor
John G. Connolly



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Dedication

This volume is affectionately dedicated to Dr. William Krogvig Kerr on his retirement from university teaching. Throughout his long and distinguished career, he has maintained his great interest in bladder cancer, both as a teacher and as an investigator. He has written extensively on the subject of bladder cancer and his scientific contributions to the literature are widely recognized. He has enriched the specialty of Urology by his presence and, above all else, is known to his many friends as a gentle man.

Preface

Cancer of the bladder has evolved as one of the model neoplasms for the multidisciplinary study of carcinogenesis and management. Epidemiologic studies have focused attention on the carcinogenic effects of the environment, work-place, and lifestyle; the time is at hand for meaningful preventive measures. Current management demands an understanding of the relative roles of surgery, radiotherapy, and chemotherapy; and new methods, such as phototherapy, are under investigation. Perhaps the most exciting new development is the harvesting of viable bladder cancer cells for study *in vitro*. It is hoped that this procedure will benefit all cancer patients through the development of techniques aimed at a better understanding of the biology of the cancer cell and the selection of specific therapy. The study of bladder cancer offers the oncologist opportunities for prevention, meaningful interdisciplinary management, and cell research.

This volume is an up-to-date and comprehensive treatise on bladder cancer. It has been written by experts in the field, chosen for their contributions to a specific aspect of the bladder cancer problem, and includes the significant advances in carcinogenesis, epidemiology, and treatment of bladder cancer. The book is divided into three sections. Since most advances in the subject will come from prevention and early diagnosis, almost one-third of the book is devoted to occupational and environmental aspects, including carcinogenesis. The second section concerns non-invasive bladder cancer. It includes material on carcinoma *in situ* as well as chapters on tumour cell markers, an exciting area which shows great promise in predicting the future clinical course of patients with superficial bladder tumours. The third section is devoted to invasive bladder cancer, the treatment of which involves surgeons, radiation oncologists, and chemotherapists. This subject is not without its controversies and these are presented along with updated treatment results from leading centres in the world.

This volume will be of interest to the basic scientist, epidemiologist, and pathologist working in the field of bladder cancer, and it should facilitate an understanding of the many facets of this complicated problem. For the clinician, there is much information on how best to manage the clinical problem as seen by the experts in the field. A careful reading of this volume will leave the reader with a comprehensive picture of the state of the art and science in the management of bladder cancer today.

J. W. Meakin, M.D., F.R.C.P. (C)
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Introduction

A scientist being introduced to the subject of bladder cancer must surely marvel at the broad spectrum of its biological behavior. In its most common form, the tumor is a low grade, low stage, multifocal papillary lesion that is usually a nonlethal disease. At the other end of the spectrum it presents as a unifocal, solid, rapidly growing tumor that readily invades and disseminates widely. It is difficult to accept that these two manifestations of bladder cancer are due to similar etiological factors.

There are many aspects of bladder cancer that are of great interest. Occupational and environmental factors have interested the epidemiologists and occupational physicians for many years. The role of food additives as possible bladder carcinogens has stimulated much investigation by scientists interested in carcinogenesis and by the regulatory authorities responsible for food and drug legislation. The control of both superficial and invasive bladder cancer is no longer a purely urological matter but requires the assistance of both radiation and chemotherapy oncologists. We require contributions from many disciplines if we are to make progress in understanding bladder cancer. All of this augurs well for our patients, for such multidisciplinary approaches will inevitably lead to an improvement in the management and, hopefully, in the quality of life of our patients.

This volume brings together a selection of papers that represent significant contributions to our understanding of bladder cancer. We have chosen comprehensive papers dealing with three main areas: The first section contains contributions on etiological factors including carcinogenesis; the second group of papers contains much current information on mucosal disease; the final section is devoted to the treatment of invasive bladder cancer.

The purpose of this volume is to acquaint the reader with the tremendous amount of scientific activity occurring in the field of bladder cancer. Also, it is anticipated that those involved in both the treatment and research aspects of bladder cancer will derive a broader understanding of this disease from reading this volume. If we examine the various areas in which real progress has been made in cancer treatment, the central theme is a multidisciplinary approach. If the various disciplines involved in the attempt to cure bladder cancer can freely communicate, we are on our way to a better understanding of the disease. Hopefully this volume will assist in disseminating the current information available on bladder cancer and lead to better communications between the various disciplines involved in bladder cancer treatment and research.

J. G. Connolly

Contents

Treatment of Advanced Bladder Cancer

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Bladder Cancer Research: Providing the Data Base for Societal Decision-Making

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In the study of human cancer, research workers have for many years effectively utilized experimental models of various kinds in order to test hypotheses about the disease(s) that cannot be studied directly in patients. For example, the induction of bladder cancer in rats and mice has provided us with the means of studying both the pathogenesis of these tumors and various modalities of treatment. There are, of course, pitfalls in the extrapolation of data from the experimental bladder cancer model to the human situation, but if conclusions are drawn with caution we can in this way obtain a great deal of information that can help us understand the disease in humans. Examples of models that have yielded this kind of information will be found in some of the papers in this volume and elsewhere in the recent literature.

In a somewhat comparable way, perhaps we could consider the current pattern of multidisciplinary research on bladder cancer to be itself a model for the investigation of other types of human cancer. The importance of approaching complex research problems, especially those requiring both laboratory and clinical studies, on a multidisciplinary basis has been adequately demonstrated over the past decade.

The National Bladder Cancer Project, under the aegis of the National Cancer Institute, has made every effort to further this approach (1,2). The focus of bladder cancer research under the Project has been—and must continue to be—on the individual who has, or who will develop, bladder cancer. Contrary to the original expectations of some investigators, we have not found this approach to limit research in any way. Instead we have seen a flowering of the multidisciplinary concept of research, both within the Project and by investigators not directly associated with it. At the same time, it has enabled those who wished to pursue individual research activities to benefit from the improved communication which the Project has fostered between and among those concerned with all aspects of bladder cancer research.

The development of a coordinated multidisciplinary approach, however, was facilitated, and even mandated, by the established fact that there is a definite relationship between human bladder cancer and certain occupational factors. Indeed, bladder cancer was recognized more than 80 years ago as a very possible conse-