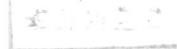


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TREATMENT OF CANCER AND ALLIED DISEASES
SECOND EDITION

VOLUME VII

**Tumors of the Male Genitalia
and the Urinary System**

BY THIRTY AUTHORS

Edited by **GEORGE T. PACK, M.D., F.A.C.S.**

and **IRVING M. ARIEL, M.D., F.A.C.S.**



With 436 Illustrations



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TREATMENT OF CANCER AND ALLIED DISEASES

SECOND EDITION

**Volume VII: Tumors of the Male Genitalia and the
Urinary System**

Dedicated to the late

HUGH HAMPTON YOUNG

pioneer urologist and dynamic teacher, whose surgical attainments and teachings profoundly influenced the treatment of cancer and other diseases of the urogenital tract

and to

T. HARVEY FERRIS

the embodiment of those qualities which characterize a great and generous American citizen who has contributed significantly to cancer education

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Preface

The scientific treatment of tumors of the genitourinary system is largely a contribution of the twentieth century. At the turn of the century, the urologist was concerned mainly with venereal diseases, urinary retention, stones, and the endoscopic control of bladder diseases.

The discoveries of the latter nineteenth century and the first years of the present century paved the way for the modern approach to the treatment of these neoplasms. These innovations included the development of the cystoscope by Nitze in 1877 and of the first operating cystoscope in 1896; the utilization of urologic roentgenology by Chapius and Chauvel in 1896 and the subsequent development of urography; the introduction of fulguration treatment of bladder tumors, using the Oudin monopolar current, by Edwin Beer, and the bipolar high frequency current, by E. L. Keyes, Jr., in 1910; the development of surgical technics for ureterointestinal transplantation (Maydl, 1894; Coffey, 1910); and the introduction of radical perineal prostatectomy by Hugh H. Young in 1905.

This volume recapitulates these advances and describes and evaluates the currently acceptable methods for treating tumors of the male genitalia and the urinary tract—neoplasms that accounted for over 27,500 deaths in the United States in 1958.

In many fields of cancer therapy, the desirability of collaborative effort on the part of surgeon, radiotherapist, and physician is becoming increasingly obvious. These conjoined therapeutic disciplines are especially necessary

for certain urologic cancers, such as prostatic carcinoma and tumors of the testis and bladder. The applications of surgery, radiotherapy, hormonal therapy, and chemotherapy in the control of these neoplasms have, accordingly, been presented in considerable detail. The indications for treatment of the various tumors, and the accomplishments and complications of the different therapeutic modalities are discussed.

The volume is divided into two main sections: (1) tumors of the male genitalia and (2) tumors of the urinary system.

TUMORS OF THE MALE GENITALIA

This section is introduced by a critique of current practices and accomplishments by Victor F. Marshall and covers neoplasms of the penis, testis, prostate, and male urethra, as well as the treatment of benign prostatic hypertrophy as it pertains to cancer.

Penile cancer is essentially a surgical problem although radiation therapy has been given extended trial (Barringer, 1924; Berven and Heyman, 1921-1947; Cade, 1931; Dean, 1926-1936). Conservative amputation and the radical operation are described; the latter, devised by Young in 1931, encompasses the routes of spread of penile cancer and consists of radical amputation of the penis combined with bilateral inguinal and femoral lymph node dissections. The Editors support this principle.

The chapters covering testicular tumors present improved technics that have evolved on the basis of (1) histologic classification,

(2) anatomic routes of dissemination, and (3) the degree of radiosensitivity of the various neoplasms. The chapter on surgical treatment describes the authors' technic of orchiectomy for the primary tumor and a technic of lymph node dissection, developed by them and performed through a transperitoneal incision, that has distinct advantages over the retroperitoneal or flank approach. The chapter on the radiation treatment of testicular tumors is based on a most extensive clinical experience in this field and on studies of tumor dosage based on a correlation of the histologic type of tumor and the response to radiation.

Prostatic cancer is one of the most common cancers afflicting men, being exceeded in frequency only by cancers of the gastrointestinal tract and lung. Four chapters cover all aspects of its present-day treatment. The only certain cure of prostatic cancer is its complete surgical removal. Owing to delayed diagnosis, complete resectability is not possible in the majority of cases. A step-by-step description is given of the radical perineal prostatectomy, including removal of the seminal vesicles and the adjacent bladder neck, introduced by Young in 1905 and performed today, with minor modifications, as originally described by him. We quote from Hugh Young's statement in 1937: "Success in the treatment of carcinoma of the prostate depends upon the diligence and acumen of the general practitioner and the decision of operators not to relegate these patients to palliative procedures when a chance of radical cure is at hand." Also described are the radical retropubic prostatectomy introduced by Terrence Millin in 1905 and the management of cancers that have extended beyond the confines of the prostate. Radiation therapy, with emphasis on radioisotopic (colloidal gold) therapy, is discussed by the group with the largest experience with this newer modality.

The knowledge that carcinoma of the prostate may be hormone dependent and controlled by altering the patient's hormonal balance has revolutionized the treatment of this common neoplasm and represents a major advance in oncologic therapy. Although the effects of bilateral orchiectomy on the prostate were noted as early as 1836 when Leroy D'Etoilles observed "complete disappearance of the pros-

tate in patients who underwent bilateral orchiectomy during the treatment of hernia," it was not until 1941, when Huggins made the first of his fundamental contributions on the place of castration, estrogen therapy, and adrenalectomy in carcinoma of the prostate that hormonal therapy notably altered the management of this cancer. This complicated hormonal interrelationship has been very carefully analyzed, and the various methods of hormonal manipulation for controlling a prostatic cancer or offering palliation to a patient bearing this tumor are most comprehensively covered.

Cancers of the deep male urethra pose a difficult therapeutic problem because they often require radical surgical excision with permanent urinary diversion. Their treatment and the simpler management of cancers of the pendulous urethra are delineated.

TUMORS OF THE URINARY SYSTEM

The second portion of the volume, dealing with tumors of the urinary system (which accounted for over 12,000 deaths in the United States in 1958), is introduced by an over-all appraisal of these neoplasms by Gustavus A. Humphreys.

Bladder tumors constitute the most frequent form of urinary-tract cancer. Although they can be clinically investigated with a high degree of accuracy, their tendency to recurrence and multiplicity has resulted in a high mortality, despite recent advances in treatment. The currently acceptable methods of treatment—cystoscopic, surgical, radiation, or a combination of these—are presented in three chapters. The first deals with the technics of cystoscopic control and the accomplishments of these at the Mayo Clinic, with its wide clinical experience. The second presents in great detail the surgical procedures at present utilized, including operations with preservation of bladder function and the extensive procedures of radical cystectomy and pelvic exenteration, together with a review of the methods of urinary diversion. The safety with which radical extirpation of the bladder can be performed emphasizes the advances that have been made since J. Bentley Squier performed the first partial cystectomy in 1915. In the third chapter are described various combina-

tions of operative and radiation therapy, the latter utilizing radioisotopes and supervoltage external irradiation. There is no one exclusive method of treating bladder tumors. Individualization of therapy is a clinical necessity and this phase of management is emphasized by each of the authors.

Tumors of the kidney cortex are of two main types: the renal-cell carcinoma, described by Grawitz in 1883 under the name "hypernephroma," and embryonal tumors (Wilms's tumor, sarcoma). The papillary tumors of the renal pelvis are similar pathologically to those of the ureter and bladder. With the exception of Wilms's tumor, which is treated by both nephrectomy and radiation, the preferred treatment for all renal cancers is nephrectomy or complete nephroureterectomy, proposed by V. C. Hunt in 1927 when he observed that renal pelvic tumors often produced ureteral seedings. These operations are described at length, including the different approaches for nephrectomy (posterolumbar, thoracoabdominal, transperitoneal, extrapleural dorsolumbar flap). Separate chapters are devoted to the treatment (surgical and radiation) of Wilms's tumor, including a detailed account of the therapeutic program at one of the world's great cancer centers, and to the technics and

results of radiation therapy of renal tumors. Although used mainly as an adjunct to surgery (except in Wilms's tumor), irradiation plays an important role when nephrectomy is not feasible and in affording palliation.

Additional chapters are devoted to ureteral tumors (primary and secondary); the use of segments of small intestine to reconstruct organs such as the bladder or to restore the continuity of channels; and to tumors of the adrenal glands. All aspects of adrenal tumors are considered: classification, the various clinical syndromes they produce, diagnosis, and management, with an excellent description of the surgical approach to the adrenals and the operative treatment of both cortical and medullary tumors. A most valuable chapter on the preoperative and postoperative care of patients subjected to surgery of the genitourinary organs is contributed by one of the outstanding students of urologic physiology.

Thirty authors, from some of the world's foremost treatment centers, have contributed of their knowledge and wide clinical experience with urologic cancer to the preparation of this comprehensive volume.

New York

G. T. P.
I. M. A.

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It is a duty and a pleasure to acknowledge our indebtedness to those who have made this volume possible, namely:

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G. T. P.
I. M. A.

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Tumors of the Male Genitalia

Neoplasms of the Male Genitalia: General Considerations

Victor F. Marshall

The following chapters constitute an important compilation of knowledge concerning neoplasms of the penis, testis, prostate, and male urethra. In spite of this inclusive information, many diagnostic, therapeutic, and etiologic problems remain. Where facts dwindle, opinions grow and controversy blossoms. Treatment has been particularly controversial, ranging from broad considerations of determinism and chance as the principal contributors to a good result, to narrow items such as how small a dosage of estrogen can produce a remission of prostatic cancer.

From the viewpoint of the clinician wishing applicability, progress has been especially slow in the determination of etiologic influences. The methodology of diagnosis of these tumors is today little changed from twenty-five years ago, being based on history-taking, inspection, palpation, and biopsy. However, it would be a great mistake to conclude that no progress has been made.

Perhaps the most striking advance has been against prostatic carcinomas. The fundamental contributions of Huggins, with Hodges and Scott, have led to great improvements in the interrelated matters of diagnosis, therapy, and causation. Prostatic carcinoma is now demonstrated not to be a totally independent, lawless growth but one usually influenced significantly by variations in the hormonal environment. A beneficial revolution has taken place in the care of patients with this disease, even when the cancer is of an advanced stage. The diagnosis of prostatic carcinoma—not only of its existence but also of its extent—has been improved by the new modality of measuring the serum phosphatases. On the other hand, prophylaxis

is still lacking. Castration in youth might well reduce the incidence of prostatic cancer but for obvious reasons is impractical. From this example concerning prostatic cancer, we see that all is not gloom; that progress has been made, but that much remains to be accomplished.

THE DIAGNOSIS OF GENITAL NEOPLASMS IN THE MALE

In considering diagnosis, early detection is much emphasized. Although the word “early” indicates chronologic brevity, the oncologist has more in mind the detection while the cancer is small and still localized. Even earlier would be the detection of the underlying process, perhaps by some chemical pattern, before the neoplasm is overt. Precancerous circumstances are unknown and consequently unrecognizable in the case of prostatic carcinoma. Certain precancerous lesions are recognizable on the penis, and rarely in the urethra. Nondescent is somehow related to neoplasia of the testis, but beyond that nothing is recognized as possibly conducive. Orchiopexy appears to have no prophylactic value, at least when the testis is placed in the scrotum after the age of five years, as is the usual practice. No one knows whether bringing the cryptorchid down at a much earlier age would prevent cancers later.

The Papanicolaou cytologic method has been a great advance in the early detection of carcinoma of the cervix but helps only slightly with prostatic carcinomas and not at all with testicular neoplasms. Carcinomas of these latter two organs exfoliate so scantily into collectable material that it is only oc-