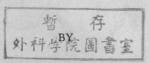
# UROLOGICAL SURGERY

DODSON

# UROLOGICAL SURGERY



## AUSTIN INGRAM DODSON, M.D., F.A.C.S.

Richmond, Virginia

Professor of Urology, Medical College of Virginia; Urologist to the Hospital Division,
Medical College of Virginia; Urologist to Crippled Children's Hospital;
Urologist to St. Elizabeth's Hospital; Urologist to St.
Luke's Hospital and McGuire Clinic

### With Contributions by

RANDAL A. BOYER, M.D.

DOUGLAS G. CHAPMAN, M.D., F.A.C.P.

FRED M. HODGES, M.D., F.A.C.R.

T. LEON HOWARD, M.D., F.A.C.S.

GUY WINSTON HORSLEY, M.D., F.A.C.S.

LINWOOD D. KEYSER, M.D., F.A.C.S. ROBERT B. McIVER, M.D., F.A.C.S. CHARLES M. NELSON, M.D. WILLIAMS E. PEMBLETON, M.D. GEORGE C. PRATHER, M.D., F.A.C.S.

JAMES H. SEMANS, M.D., F.A.C.S. LAWRENCE O. SNEAD, M.D., F.A.C.R.

SECOND EDITION

WITH 645 ILLUSTRATIONS

THE C. V. MOSBY COMPANY

Copyright, 1944, 1950, By The C. V. Mosby Company

(All rights reserved)

First Edition Reprinted
May, 1946

Printed in the United States of America



Press of
The C. V. Mosby Company
St. Louis

CONTENTS	
CHAPTER I	PAGE
ANATOMY OF THE UROGENITAL TRACT	17
CHAPTER II	
Diagnosis, 42; History, 42; General Physical Examination, 45; Preoperative Urological Examination, 48; Urography, By Lawrence O. Snead, M.D., F.A.C.R., 52.	42
CHAPTER III	
PREOPERATIVE AND POSTOPERATIVE CARE. Revised by Charles M. Nelson, M.D Preoperative Treatment, 100; Postoperative Treatment, 102.	100
CHAPTER IV	
RADIATION THERAPY OF LESIONS OF GENITOURINARY TRACT. By Fred M. Hodges, M.D., F.A.C.R., and Randal A. Boyer, M.D.  General Considerations, 113; Renal Tumors, 114; Tumors of the Bladder, 114; Tumors of the Prostate Gland, 115; Tumors of the Urethra, 115; The Penis, 115; Carcinoma of the Penis, 115; Plastic Induration of the Penis (Peyronie's Disease), 116; Carcinoma of the Scrotum, 116; Testicular Tumors, 116; Irradiation of Metastatic Malignancy, 116.	113
CHAPTER V	
ACID-BASE BALANCE AND FLUID ADMINISTRATION. By Douglas G. Chapman, M.D., F.A.C.P.	118
CHAPTER VI	
BLOOD TRANSFUSION AND THE TREATMENT OF SHOCK. By Guy Winston Horsley, M.D., F.A.C.S.	135
CHAPTER VII	
ANESTHESIA IN UROLOGICAL SURGERY. By Williams E. Pembleton, M.D Premedication, 148; Local Anesthesia, 149; Spinal Anesthesia, 151; General Anesthesia, 152.	148
CHAPTER VIII	
SURGICAL APPROACH TO THE KIDNEY. INCISIONS FOR OPERATIONS ON THE KIDNEY Surgical Approach to the Kidney, 155; Incisions, 157; The Lumbar Incision, 157; The Vertical Incision of Simon, 165; Resection of the Twelfth Rib, 166, Anterior Abdominal Incision, 169.	155
CHAPTER IX	
CONGENITAL ANOMALIES OF THE KIDNEY AND THEIR TREATMENT	171

### CONTENTS

CHAPTER X	PAGE
THE SURGICAL TREATMENT OF RENAL INFECTIONS Pyelonephritis, 190; Infection of the Renal Cortex, 194; Perirenal Abscess, 197; Nephrostomy, 199; Cabot's Nephrostomy, 202; Marion's Nephrostomy, 206.	190
CHAPTER XI	
Renal Tuberculosis and Its Treatment. By T. Leon Howard, M.D., F.A.C.S Diagnosis of Renal Tuberculosis, 208; Nephrectomy, 213; Comments, 216.	207
CHAPTER XII	
INJURIES OF THE KIDNEY AND THEIR TREATMENT. By George C. Prather, M.D., F.A.C.S. Types of Force Producing Injury, 218; Pathological Changes, 220; Symptoms, 221; X-ray Examination, 222; Clinical Course, 222; Diagnosis, 224; Treatment, 224; Follow-up Observations, 226.	218
CHAPTER XIII	
NEPHROPTOSIS AND ITS TREATMENT	227
CHAPTER XIV	
RENAL CALCULI AND THEIR TREATMENT	
CHAPTER XV	
HYDRONEPHROSIS. SURGICAL TREATMENT OF OBSTRUCTION AT THE URETEROPELVIC JUNC-	
Hydronephrosis, 280; Surgical Treatment of Obstruction at Ureteropelvic Juncture, 284.	280
CHAPTER XVI	
Cysts of the Kidney and Their Treatment Solitary Cysts, 308; Polycystic Disease, 310.	308
CHAPTER XVII	
TUMORS OF THE KIDNEY AND THEIR TREATMENT  Tumors of the Adult Renal Parenchyma, 315; Tumors of the Renal Pelvis, 326; Tumors of the Renal Parenchyma in Children, 333; Embryonal Adenomyosarcoma (Wilms' Tumor), 333.	315
CHAPTER XVIII	
Nephrectomy	. 344
CHAPTER XIX	
ANEURYSM OF THE RENAL ARTERY	363
CHAPTER XX	
OPERATIONS UPON THE ADRENAL GLAND	367

CHAPTER XXI	
SURGICAL APPROACH TO THE URETERS. INCISIONS FOR OPERATIONS ON URETERS Surgical Approach to Ureters, 372; Blood Vessels, 373; Nerves, 373; Incisions for Exposing the Ureter, 374.	PAGE 372
CHAPTER XXII	
CONGENITAL ANOMALIES OF THE URETER AND THEIR TREATMENT	390
CHAPTER XXIII	
PYOURETER AND ITS TREATMENT	402
CHAPTER XXIV	
DENERVATION OF THE URETER FOR PAINFUL SPASM	403
CHAPTER XXV	
URETERAL CALCULI AND THEIR TREATMENT	406
CHAPTER XXVI	
INJURIES OF THE URETER AND THEIR TREATMENT. By George C. Prather, M.D., F.A.C.S. Physiological Considerations, 420; Penetrating Injuries, 421; Cystoscopic Injuries, 422; Surgical Injuries, 423.	420
CHAPTER XXVII	
URETEROURETEROSTOMY; URETEROCYSTOSTOMY; URETEROSTOMY, EXTERNAL; URETEROSIGMOIDOSTOMY	427
CHAPTER XXVIII	
Tumors of the Ureter and Their Treatment. Ureterectomy Tumors of the Ureter, 457; Ureterectomy, 459.	457
CHAPTER XXIX	
SURGICAL APPROACH TO THE BLADDER. INCISIONS FOR OPERATIONS ON THE BLADDER _ Surgical Approach to the Bladder, 464; Suprapubic Cystotomy and Cystostomy, 467; Vaginal Cystotomy and Cystostomy, 473; Perivesical Drainage, 473.	464
CHAPTER XXX	
INJURIES OF THE BLADDER AND THEIR TREATMENT. By George C. Prather, M.D., F.A.C.S. Penetrating Wounds of the Bladder, 476; Rupture of the Bladder, 478.	476
CHAPTER XXXI	J. K.
Vesicocutaneous Fistulas, 483; Vesicointestinal Fistulas, 485; Vesicovaginal Fistulas, 486.	483

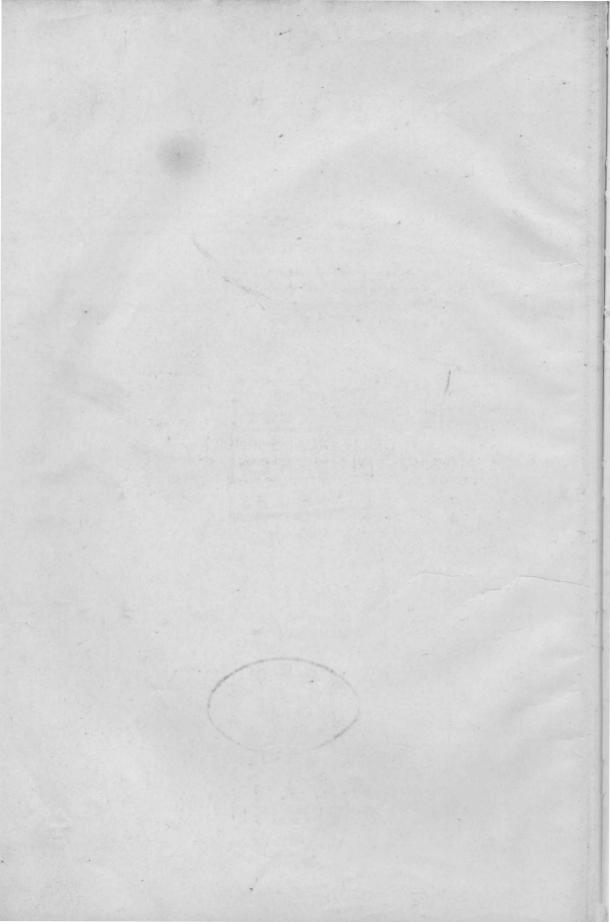
CHAPTER XXXII	PAGE
NEUROGENIC DISEASE OF THE BLADDER. By James H. Semans, M.D., F.A.C.S	494
CHAPTER XXXIII	
THE SURGICAL TREATMENT OF PATENT URACHUS, CYSTS OF URACHUS, EXSTROPHY OF BLADDER AND DIVERTICULA OF THE BLADDER Patent Urachus and Urachal Cyst, 507; Exstrophy of the Bladder, 508; Diverticula, 509; Diverticulectomy, 512.	507
CHAPTER XXXIV	
TUMORS OF THE BLADDER, GENERAL CONSIDERATIONS Nonepithelial Tumors; 518; Epithelial Tumors, 520.	518
CHAPTER XXXV	
SURGICAL TREATMENT OF BLADDER TUMORS Excision of Tumors, 537; The Transvesical Application of Diathermy, 542; The Transvesical Application of Radium, 545; Resection of the Bladder, 549; Total Cystectomy, 558.	537
CHAPTER XXXVI	
THE SURGICAL TREATMENT OF THE MALE URETHRA	572
CHAPTER XXXVII	
CONGENITAL ANOMALIES OF THE MALE URETHRA AND THEIR TREATMENT Congenital Valves, 573; Contracture of the Internal Sphincter and Hypertrophy of the Verumontanum, 575; Epispadias, 575; Hypospadias, 585; The Ombrédanne Operation, 603; Hermaphroditism, 607.	573
CHAPTER XXXVIII	
SURGICAL TREATMENT OF STRICTURES AND FISTULAS OF THE MALE URETHRA, AND PERINEAL DEFECTS  Meatotomy, 611; Internal Urethrotomy, 611; External Urethrotomy and Urethrostomy, 612; Perineal Operations for Stricture of the Urethra, 612; Excision of Stricture With Urethral Anastomosis, 617; Excision of Perineal Fistulas, 618; Closure of Rectourethral Fistula, 620; Young's Operation, 621; Repair of Perineal Defects, 622; Diverticula, 626.	611
CHAPTER XXXIX	
INJURIES OF THE URETHRA AND THEIR TREATMENT. By George C. Prather, M.D., F.A.C.S. Penile Urethra, 630; Bulbous Urethra, 630; Deep Urethra, 633.	-630
CHAPTER XL	
CARCINOMA OF THE MALE URETHRA AND ITS TREATMENT	643
CHAPTER XLI	
SURGICAL CONDITIONS OF THE FEMALE URETHRA AND THEIR TREATMENT Injury, 654; Epispadias, 656; Hypospadias, 660; Diverticulum, 660; Urethrovaginal Fistula, 662; Prolapse of the Urethra, 662; Neoplasms of the Female Urethra, 663.	654
CHAPTER XLII	
SURGICAL CONDITIONS OF THE PENIS AND THEIR TREATMENT	669

CONTENTS 13

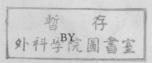
CHAPTER XLIII	PAGE
SURGICAL CONDITIONS OF THE SCROTUM AND THEIR TREATMENT	686
CHAPTER XLIV	
SURGICAL DISEASES OF THE TUNICA VAGINALIS AND SPERMATIC CORD AND THEIR TREATMENT	697
Hydrocele, 697; Hematocele, 708; Hydroceles and Cysts of the Spermatic Cord, 709; Tumors of the Spermatic Cord, 710; Torsion of the Spermatic Cord, 712; Varicocele, 714; Inguinal Varicocelectomy, 719.	
CHAPTER XLV	
SURGICAL CONDITIONS OF THE TESTICLE AND THEIR TREATMENT	722
CHAPTER XLVI	
SURGICAL CONDITIONS OF THE EPIDIDYMIS, VAS DEFERENS AND SEMINAL VESICLES AND THEIR TREATMENT  The Epididymis, 747; Acute Epididymitis, 747; Tuberculosis of the Epididymis, 748; Epididymovasectomy, 749; Chronic Nontuberculous Epididymitis, 752; Inflammatory Occlusion of the Epididymis or Vas Deferens, 755; Vas Deferens, 758; The Seminal Vesicles, 759.	747
CHAPTER XLVII	
ENDOCRINOLOGY AND ENDOCRINE THERAPY OF THE PROSTATE. By Linwood D. Keyser, M.D., F.A.C.S.  The Testicular Hormones, 762; The Pituitary Hormone, 762; The Nature of Prostatic Enlargement, 764; The Incidence of Benign and Malignant Prostatism, 765; Clinical Use of Hormone Therapy in Benign Prostatism, 765; Endocrine Therapy in Prostatic Cancer, 767; Significance of Serum Phosphatase, 768; Sedi-	762
mentation Rate of Erythrocytes, 769; The Significance of 17 Ketosteroids, 769; Clinical Treatment of Prostatic Cancer, 769; Antiandrogen Treatment Preliminary to Total Prostatectomy, 770.	
CHAPTER XLVIII	
The Prostate Gland ————————————————————————————————————	773







# UROLOGICAL SURGERY



# AUSTIN INGRAM DODSON, M.D., F.A.C.S.

Richmond, Virginia

Professor of Urology, Medical College of Virginia; Urologist to the Hospital Division,
Medical College of Virginia; Urologist to Crippled Children's Hospital;
Urologist to St. Elizabeth's Hospital; Urologist to St.
Luke's Hospital and McGuire Clinic

### With Contributions by

RANDAL A. BOYER, M.D.

DOUGLAS G. CHAPMAN, M.D., F.A.C.P.

FRED M. HODGES, M.D., F.A.C.R.

T. LEON HOWARD, M.D., F.A.C.S.

GUY WINSTON HORSLEY, M.D., F.A.C.S.

LINWOOD D. KEYSER, M.D., F.A.C.S. ROBERT B. McIVER, M.D., F.A.C.S. CHARLES M. NELSON, M.D. WILLIAMS E. PEMBLETON, M.D. GEORGE C. PRATHER, M.D., F.A.C.S.

JAMES H. SEMANS, M.D., F.A.C.S. LAWRENCE O. SNEAD, M.D., F.A.C.R.

SECOND EDITION

WITH 645 ILLUSTRATIONS

THE C. V. MOSBY COMPANY

Copyright, 1944, 1950, By The C. V. Mosby Company

(All rights reserved)

First Edition Reprinted
May, 1946

Printed in the United States of America

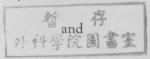


Press of
The C. V. Mosby Company
St. Louis

## TO

# J. SHELTON HORSLEY, M.D., LL.D., F.A.C.S.

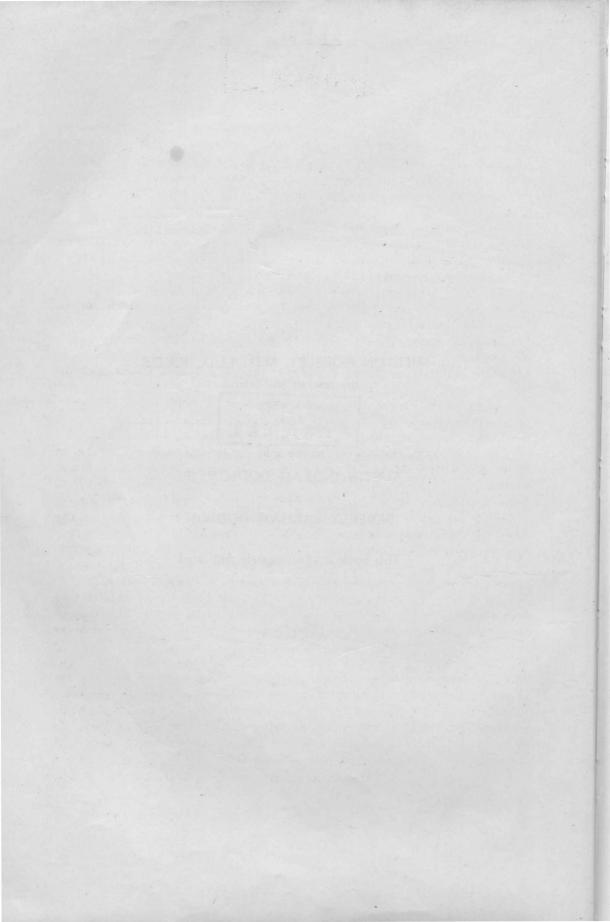
my teacher and friend



to my sons

AUSTIN INGRAM DODSON, JR. and BEVERLY BARHAM DODSON

This book is affectionately dedicated





### PREFACE TO SECOND EDITION

In presenting a second edition of *Urological Surgery*, I wish to express my sincere gratitude for the kindly manner in which the first edition was received. Approval has been very generous and criticisms have been kindly and helpful. Added experience and the progress of urology require some changes in the material originally presented and some additions to its contents. The purpose set forth in the first paragraph of the preface to the first edition is adhered to.

Dr. Randal A. Boyer has replaced Dr. R. A. Berger in association with Dr. Fred M. Hodges in the preparation of the chapter on Radiation Therapy, and the chapter in this edition on Anesthesia is written by Dr. W. E. Pembleton, professor of anesthesiology at Medical College of Virginia.

In addition to these changes in contributors, Dr. Charles M. Nelson has revised the chapter on Preoperative and Postoperative Care; the chapter on Renal Tuberculosis has been rewritten by Dr. T. Leon Howard; the chapter on Injuries of the Kidney has been rewritten by Dr. George C. Prather; the chapter on Neurogenic Disease of the Bladder has been rewritten by Dr. James H. Semans; and Dr. Robert B. McIver has rewritten the section on Ureterointestinal Anastomosis.

A few of the illustrations have been replaced by others more clearly depicting the author's idea of the proper operative technique and a number of illustrations have been added where it was thought they would be helpful.

The chapter on Nephroptosis has been deleted to some extent. This chapter in the first edition was out of proportion to the rest of the book. Additions have been made in Chapter XXI to include the operation devised by Dr. Fred Foley for exposure of the upper portion of the ureter, and in Chapter XXVII to include the author's methods of ureterocutaneous and ureterovesical anastomosis. In the discussion of the carcinoma of the bladder, a number of new illustrations have been added illustrating the technique of more radical surgery. In the chapter on The Prostate Gland, the operation for retropubic removal of the prostate has been added and more emphasis is given radical surgery in the treatment of prostatic malignancy. Additional operative procedures have been added in the treatment of hypospadias, and correction is made in the legends of the Bucknall operation which was incorrectly accredited to Bidder in the first edition.

There have been some very slight changes in the arrangement of the material. Urography and Cystography by Dr. L. O. Snead has been added to the chapter on Diagnosis, and Preoperative and Postoperative Care has been given a separate chapter. The chapter on Blood Transfusions has been replaced by a chapter devoted to discussion of the treatment of hemorrhage and shock. In many of the remaining chapters additions and changes have been made with the hope of increasing the usefulness of the book.

Illustrations are by Miss Helen Lorraine. Thanks are due Dr. Donald Gilbert for aid in correcting proof.

AUSTIN I. DODSON.

#### PREFACE TO FIRST EDITION

It is the purpose of this book to present and discuss those surgical problems arising in everyday urological practice. It is not intended as a complete treatise on the diseases of the genitourinary organs, but as an aid in clinical work and as a surgical supplement to the excellent books on principles and practice of urology now in use. The subject matter is arranged on an anatomical basis in the belief that an individual problem can be referred to more easily.

It was originally my intention to confine the book to surgical treatment, but realizing that in many communities urological surgery must be done by surgeons lacking a basic training in urology, it seemed best to add some discussion of diagnosis and pathology where such discussion would clarify the subject.

The chapter on anatomy contains the essentials for surgical needs. Its chief purpose is to call attention to the manner in which anatomical arrangement influences the progress of disease and how the anatomy can be taken advantage of in surgical treatment. In chapters on surgical approach, attention is called to the important anatomical structures overlying the urinary organs, and incisions for adequate exposure with minimum damage to these structures are described. One or more procedures are described in dealing with each surgical problem. No claim is made for originality in any instance. Operations are described that I have found useful or that seem to be physiologically sound. Many excellent operative procedures are necessarily left out for lack of space.

The book is to a great extent an expression of my own experience. For additional material I have made liberal use of the recent urological literature. If in any instance credit is not given to the author of an article or to the originator of an operation, it is unintentional and apologies are extended. A bibliography is appended to each chapter to indicate the source of material and to permit a more detailed study of the subject under discussion.

Chapters on Excretory Urography and Cystography, Radiation Therapy, Acid Base Balance and Fluid Administration, Blood Transfusion, Anesthesia in Urological Surgery, and Endocrinology and Endocrine Therapy of the Prostate, are written by men well versed in these particular fields. These chapters add materially to the value of the book and I wish here to express my appreciation to these contributors.

The book is illustrated by Miss Helen Lorraine. I am also indebted to Miss Lorraine for valuable aid in assembling the material and arranging the chapters.

I wish to express my appreciation for permission to use a number of illustrations from Chapters 68-72, of Horsley and Bigger, *Operative Surgery*, fifth edition, 1940.

Thanks are due to Dr. J. Shelton Horsley for many helpful suggestions in the preparation of the text.

Austin I. Dodson

CONTENTS	
CHAPTER I	AGE
ANATOMY OF THE UROGENITAL TRACT	17
CHAPTER II	
Diagnosis and Urography — — — — — — — — — — — — — — — — — — —	42
CHAPTER III	
PREOPERATIVE AND POSTOPERATIVE CARE. Revised by Charles M. Nelson, M.D Preoperative Treatment, 100; Postoperative Treatment, 102.	100
CHAPTER IV	
RADIATION THERAPY OF LESIONS OF GENITOURINARY TRACT. By Fred M. Hodges, M.D., F.A.C.R., and Randal A. Boyer, M.D	113
CHAPTER V	
ACID-BASE BALANCE AND FLUID ADMINISTRATION. By Douglas G. Chapman, M.D., F.A.C.P.	118
CHAPTER VI	
BLOOD TRANSFUSION AND THE TREATMENT OF SHOCK. By Guy Winston Horsley, M.D., F.A.C.S.	135
CHAPTER VII	
Anesthesia in Urological Surgery. By Williams E. Pembleton, M.D Premedication, 148; Local Anesthesia, 149; Spinal Anesthesia, 151; General Anesthesia, 152.	148
CHAPTER VIII	
SURGICAL APPROACH TO THE KIDNEY. INCISIONS FOR OPERATIONS ON THE KIDNEY Surgical Approach to the Kidney, 155; Incisions, 157; The Lumbar Incision, 157; The Vertical Incision of Simon, 165; Resection of the Twelfth Rib, 166, Anterior Abdominal Incision, 169.	155
CHAPTER IX	
CONGENITAL ANOMALIES OF THE KIDNEY AND THEIR TREATMENT Congenital Solitary Kidney, 171; Congenital Hypoplasia, 172; Ectopic Kidney, 172; Horseshoe Kidney, 180.	171