

Contents

Introduction	1
What is Urology	1
General Urology	4
Embryology	5
Development of the Urogenital System	7
Pronephros, Mesonephros, Metanephros	7
Gonadal Development	9
Development of the External Genitalia	11
Anatomy and Physiology	13
Bladder	17
Prostate and Seminal Vesicles	21
Testis and Epididymis	22
Urethra	22
Sexual Function	23
Sperm	25
Physiology of Ejaculation and Erection	28
Pathophysiology of the Urogenital Tract	30
Renal Failure	30
Chronic Renal Failure	32
Artificial Kidney and Peritoneal Dialysis	33
Kidney Transplants	34
Disturbances of Urine Transport	36
Urinary Transport	36
Ectasia of the Urinary Tract and Hydronephrosis	37
Disturbances of Micturition	40
Systemic Diseases	41
Disturbances of Water and Electrolyte Balance and	
Acid-Base Balance	41
Water Deprivation (Hypertonic Dehydration)	43
Sodium Deprivation (Hypotonic Dehydration)	44
Sodium Excess (Hypertonic Hyperhydration)	44
Water Intoxication (Hypotonic Hyperhydration)	44
Lack of Sodium and Water (Isotonic Dehydration)	45
Excess of Sodium and Water (Isotonic Hyperhydration)	45
Disturbances of Potassium Metabolism	45
Potassium Decrease	45
Hyperkalemia	48
Calcium Metabolism	49
Magnesium Metabolism	49

Disturbances of the Acid-Base Balance.....	49
Acid-Base Metabolism.....	50
Metabolic Acidosis.....	51
Hyperchloremic Acidosis.....	51
Hypertension.....	54
Effect of Anesthesia and Surgery on Renal Function.....	57
Urological Symptoms	60
Examination of Urine.....	60
Hypostenuria and Isostenuria.....	60
Proteinuria.....	61
Pyuria.....	62
Hematuria.....	62
Changes of Micturition.....	62
Fever.....	63
Pain.....	64
Diagnosis in Urology	69
Urinalysis.....	69
Quick Tests.....	73
Culture, Sensitivity and Animal Inoculation.....	75
Examination of the Ejaculate.....	76
Collection and Examination.....	76
Examination of Kidney Function.....	79
Water Test (Volhard).....	79
Dye Test.....	80
Clearance Determinations.....	80
Isotope Diagnosis.....	82
Examination of Prostate and Seminal Vesicles.....	87
Instrument Investigations.....	90
Catheterization.....	93
Suprapubic Bladder Aspiration.....	97
Endoscopy.....	100
Urological Radiology.....	104
Abdominal Flat Plate.....	104
Urogram.....	107
Retrograde Urography.....	109
Special Radiologic Investigations.....	112
History and Physical.....	116
History.....	116
Neurologic Examination.....	118
Examination of the Kidneys.....	118
Examination of the Ureters.....	119
Examination of the Bladder.....	120
Examination of the External Genitalia.....	120
Examination of the Inner Genitalia.....	120

Examination of the Urine	120
Instrumentation	121
Special Urologic Therapy	123
Urological Surgery	123
Operations on the Kidney	123
Nephrectomy	123
Heminephrectomy and Partial Kidney Resection	125
Pyelotomy, Nephrotomy, Nephrostomy	125
Pyeloplasty	127
Operations on the Ureter	129
Operations on the Bladder and Prostate	133
Procedures on the External Genitalia	134
Endoscopic Procedures	135
Systemic Diseases	137
Anomalies	138
Cystic Kidney Diseases	138
Renal Cyst	141
Renal Agenesis	143
Horseshoe Kidney, Double Kidney, Pelvic Kidney	143
Congenital Hydronephrosis	144
Anomalies of the Renal Pelvis and Ureter	146
Ptotic Kidney	146
Bladder Exstrophy	149
Phimosis	149
Paraphimosis	150
Infections	152
Nonspecific Infections	152
Infection of Parenchymal and Hollow Organs	152
Acute and Chronic Infections	152
Primary and Secondary Infections	154
Acute Infections	155
Infections of Perirenal Tissue and Paranephritic Abscess	155
Pyelonephritis	155
Purulent Nephritis and Renal Carbuncle	158
Acute Primary Cystitis	158
Infections of the Urethra	160
Infections of Prostate and Seminal Vesicles	161
Orchitis and Epididymitis	162
Testicular Torsion	165
Chronic Infections	167
Chronic Pyelonephritis	167
Chronic Prostatitis	169
Therapy of Nonspecific Infections	171
Physical Measures	172

Chemotherapy	172
Bacteriostasis – Bactericide	175
Specific Infections	187
Urogenital Tuberculosis	187
Urinary Tuberculosis	187
Genital Tuberculosis	192
Venereal Diseases	199
Syphilis (Lues)	199
Gonorrhea	201
Parasitic Diseases of the Urinary Tract	203
Schistosomiasis	203
Filariasis	204
Echinococcosis	206
✓ Benign and Malignant Tumors	208
TNM System	210
Hypernephroma (Renal Cell Carcinoma)	213
Renal Cancer in Infants	216
Renal Pelvic Carcinoma and Papilloma	216
Ureteral Papilloma and Carcinoma	217
Bladder Papilloma	217
Urethral Tumors	218
Bladder Carcinoma	218
Testicular Tumor	222
Hydrocele	227
Spermatocele	227
Prostatic Adenoma	229
Prostatic Carcinoma	240
Urolithiasis	253
Formation of Urinary Calculi	254
Pathogenesis of Stone Formation	255
Renal Calculi	258
Ureteral Stone	261
Bladder Stone	262
Staghorn Calculi	262
Diagnosis of Renal Ureteral Calculi	263
Stone Passage	264
Basket Extraction	265
Surgical Stone Removal	265
Stone Dissolution and Stone Prevention	267
Uric Acid Calculi	269
Cystine Stones	270
Calcium Oxalate Stones	272
Phosphate Stones	274
Advice for Stone Patients	276

Obstructive Uropathy	277
Upper Tracts	277
Retroperitoneal Fibrosis	279
Pressure Relationships in the Obstructed Kidney	280
Bladder	283
Foreign Bodies and Calculi	283
Urethral Strictures	284
Urinary Phlegmon	284
Contracted Vesical Neck	285
Stenosis of the Bulbous Urethra	285
Urinary Tract Trauma	287
Kidneys	287
Bladder Injury	288
Urethral Trauma	290
Diseases of the Adrenal Gland	292
Cushing's Syndrome	292
Primary Hyperaldosteronism – Conn's Syndrome	292
Adrenogenital Syndrome (AGS)	293
Pheochromocytoma	294
Adrenal Carcinoma	294
Sexual Pathology of Man	295
Impotence	295
Organic Impotence	296
Functional Impotence	297
Infertility	301
Further Causes of Infertility	302
Insemination	304
Homologous Insemination	304
Heterologous Insemination	304
Intersexuality	305
True Agonadism	307
Gonadal Dysgenesis	308
Turner Syndrome	308
Male Turner Syndrome	308
Klinefelter Syndrome	308
True Hermaphroditism	309
Female Pseudohermaphroditism	309
Adrenogenital Syndrome	310
Male Pseudohermaphroditism	310
Guidelines for Evaluation	311
Pediatric Urology	313
Congenital Malformations	313
Bladder Exstrophy	313
Epispadias	314

Hypospadias.....	314
Undescended Testis	317
Urinary Tract Infections	320
Enuresis and Urinary Incontinence	322
Urinary Tract Obstructions.....	324
Urolithiasis in Children	336
Urogenital Tumors in Children	337
Female Urology	338
Pyelonephritis in Pregnancy	338
Chronic Pyelonephritis	338
Vesicoureteral Reflux.....	338
Distal Urethral Stenosis.....	339
Urological Complications in Gynecologic Diseases	339
Ureterovaginal Fistulae	340
Incontinence	341
Urethral Polyp.....	341
Irritable Bladder	342
Interstitial Cystitis.....	342
Vesicovaginal Fistulae	343
Sexual Pathology of the Female	345
Neurourology	348
Cord Transection	352
Detrusor-Sphincter Dyssynergia.....	354
Meningomyelocele	355
Urological Emergencies	356
Anuria.....	356
Septic Obstructed Kidney	358
Testicular Torsion	359
Paraphimosis	359
Other Acute Problems	360
Conclusion	362
Disability Determination: Legal Considerations	363
Disability Evaluations	364
Guideline Determinations.....	365
References	374
Index	377