Contents

List of Contributors  xiii
Acknowledgements  xv

Introduction  1
Christopher Woodhouse and Alex Kirkham

1 Subtotal Nephrectomy and Tumour Ablation  5
David Nicol, Alison Elstob, Christopher Anderson, and Graham Munneke
Introduction  5
Procedures  5
  Partial Nephrectomy  5
  Early Imaging  6
  Late Imaging  7
  Ablative Therapies  10
  Complications  13
  Successful Tumour Ablation  14
  Treatment Failure  15
  Surveillance  18
  Follow-up Imaging  18
    Partial Nephrectomy  18
    Ablative Therapies  19
    Surveillance  19
Conclusions  19
References  20

2 Renal Transplantation  23
Rhana H. Zakri, Giles Rottenberg, and Jonathon Olsburgh
Introduction  23
The Role of Ultrasound Imaging  23
Vascular Complications  23
  Transplant Renal Artery Stenosis  23
  Transplant Renal Vein Thrombosis  25
  Transplant Renal Artery Thrombosis  26
  Arteriovenous Fistula  27
Follow-up  27
Urological Complications  27
  Ureteric Complications  28
| Contents |
|-----------------|-----------------|
| Anastomotic Urinary Leak or Urinoma | 28 |
| Missed Duplex Transplant Ureter | 29 |
| Ureteric Stenosis | 30 |
| Transplant Ureteric Reflux | 30 |
| Bladder Complications | 30 |
| Urinary Fistulae | 30 |
| General Complications | 31 |
| Lymphocelees | 31 |
| Renal Transplant Stone Disease | 31 |
| Renal Transplant Trauma | 32 |
| Oncological Complications | 32 |
| Transplant Renal Cell Carcinoma | 32 |
| Transplant Ureteric Transitional Cell Carcinoma | 33 |
| Conclusions | 33 |
| References | 34 |

**3 Imaging After Endo-urological Stone Treatment**  
*Daron Smith and Clare Allen*

Introduction 37

The Procedures 37

Conservative Management 37

Ureteric Stones: Results and Complications 41

Extracorporeal shock wave lithotripsy 41

Ureteroscopy 41

Renal Stones: Results and Complications 44

Flexible Ureterorenoscopy 44

Percutaneous Surgery 46

Complications and Follow-up 48

Residual Fragments After ESWL, URS, FURS and PCNL 48

Radiation Exposure for Patients with Stones 53

References 54

**4 Pelvi-ureteric Junction Reconstruction**  
*Mohamed Ismail and Hash Hashim*

Introduction 57

Antenatal Hydronephrosis 57

Pathophysiological Effect of True Pelvi-ureteric Obstruction 58

Physiological and Anatomical Changes in the Kidney Following Pyeloplasty 59

Incidental PUJO in adults 61

Long-term Follow-up 62

Conclusions 63

References 64

**5 Retroperitoneal Fibrosis**  
*Paul Scheel and Bruce Berlanstein*

Introduction 67

Available Treatments 67

Medical Therapy 67

Surgical Treatment 69
Contents

Follow-up 70
  Imaging 70
  Stent Removal 70
Complications 71
  Stent-related Complications 71
  Hydrocoeles 73
Long-term Follow-up 73
  Recurrent Disease 74
References 75

6 Urinary Diversion 77
  Christopher Woodhouse and Alex Kirkham
  Introduction 77
  The Procedures 77
    Clinical Follow-up of Ileal Conduits 78
  Postoperative Imaging 78
    The 'Loopogram' 78
    Ultrasound 81
    Nephrostomy and Antegrade Imaging 83
Monitoring of Asymptomatic Patients 83
Management of Bacteriuria and Sepsis 84
References 85

7 Ureteric Reconstruction and Replacement 87
  Christopher Woodhouse and Aslam Sohaib
  Introduction 87
  Procedures 87
    Stents and Nephrostomies 87
    Uretero-pyelostomy 87
    Uretero-calycostomy 88
    Trans-uretero-ureterostomy 88
    Ureteric Re-implantation 88
    Autotransplantation 90
    Intestine 90
    Complex Lower Urinary Tract Reconstruction 90
    Other Materials and Experimental Techniques 90
  Clinical Follow-up and Complications 91
    Stents and Nephrostomies 91
    Reconstruction with Urothelium 94
    Autotransplantation 95
    Intestine 96
References 98

8 Conservative and Reconstructive Bladder Surgery 101
  Pardeep Kumar
  Introduction 101
  Extravasation 101
  Bladder Perforation 101
  Reconstruction Following Ureteric Injury and Partial Cystectomy 103
The Irradiated Bladder 106
Complications After Posterior Exenteration 106
Conclusions 107
References 107

9 Bladder Augmentation in Children 109
Paddy Dewan and Padma Rao
Introduction 109
The Procedures 109
Augmentation with Ileum or Colon 109
Gastrocystoplasty 109
Seromuscular Cystoplasty 109
Auto-augmentation 110
Uretero-cystoplasty 110
Clinical Follow-up 111
Postoperative Imaging 113
Complications of Enterocystoplasty 115
Metabolic and Electrolyte Disorders 115
Stones 115
Perforation 117
Neoplastic Progression 118
Unique Complications of Gastrocystoplasty 119
Hypochloraemic Metabolic Alkalosis 119
Hypergastrinaemia 119
Haematuria-Dysuria Syndrome 120
Changes Over Time 120
References 121

10 Radiology and Follow-up of the Neobladder 125
Richard Hautmann and Bjoern G. Volkmer
Introduction 125
The Procedure 125
Radical Cystectomy in Females 125
Radical Cystectomy in Males 125
The Neobladder 125
Postoperative Imaging 126
Clinical Follow-up 127
Clinical Examination 127
Bladder and Urine Investigations 128
Renal Investigations 128
Oncologic Follow-up Specific to the Neobladder 132
Local Recurrence 132
Secondary Tumour Growth in Urinary Diversions for Benign Disease 134
Complications 135
Complications up to 90 Days 135
Long-term Complications 135
Changes Over Time 136
Reservoir Control 136
Incontinence 136
Voiding Failure (Hypercontinence) 136
Metabolic Changes (see also Chapter 11) 138
References 138

11 General Consequences of Lower Urinary Tract Replacement and Reconstruction 141
Christopher Woodhouse and Alex Kirkham
Introduction 141
Reservoirs 141
The Stomach 141
Ileum 141
Gastrointestinal Consequences 141
Storage Consequences 143
Colon 143
Gastrointestinal Consequences 143
Storage Consequences 143
Rectum 145
Continence (Mainz II) 146
Anastomotic Cancer 147
Urodynamic Findings 149
Stones 149
Renal Function 151
Perforation 151
Histological Changes 153
Infection 155
Neoplasia 156
Urine Testing for Pregnancy 157
The Conduit and Continence 157
References 158

12 Surgery on the Benign Prostate 163
Doug Pendse and Mark R. Feneley
Introduction 163
Procedures 163
Outcomes and Complications 165
Postoperative Failure to Void 166
Continued Failure to Void or Unsatisfactory Voiding 166
Sexual Function 168
Incontinence 170
Stricture 170
Unexpected Malignancy 171
Changes Over Time 171
References 172

13 Imaging After Treatment of Prostate Cancer 177
Alex Kirkham
Introduction 177
Appearances After Radical Prostatectomy 177
Residual Tumour After Radical Prostatectomy 179
The Prostate After Ablative Therapies 179
  Early Appearances 180
  Early Complications 181
  Appearances at 2–5 Months 182
  Appearances at 6 Months: Assessing Residual and Recurrent Tumour 182
Nuclear Medicine Studies 184
A Schedule for Follow-up 184
References 184

14 Urethroplasty 189
Simon Bugeja, Clare Allen, and Daniella E. Andrich
Introduction 189
Pericatheter Urethrogram 189
Ascending and Descending Urethrography 190
  Radiological Appearance After Different Types of Urethroplasty 191
    Traumatic Strictures 192
    Idiopathic Bulbar Strictures 193
    Penile Urethroplasty 193
  Use of Ultrasound in Urethroplasty Follow-up 194
Follow-up After Urethroplasty 196
  Radiological Appearance and Surgical Management of Recurrent Strictures After
  Urethroplasty 197
References 198

15 The Postoperative Appearance and Follow-up of Urinary Tract Prostheses 201
Alex Kirkham
Introduction 201
Penile Prostheses 201
  Normal Appearance and Imaging Techniques 201
  Problems of Positioning and Length 203
Artificial Urinary Sphincters 204
  Disorders of Function and Position 205
Infection in Implanted Devices 206
Metallic Stents 208
References 208

Index 211