

Li-Jen Wang

Key Diagnostic Features in Uroradiology

A Case-Based Guide

 Springer

Key Diagnostic Features in Uroradiology

Li-Jen Wang

Key Diagnostic Features in Uroradiology

A Case-Based Guide

 Springer

Li-Jen Wang, MD
Department of Medical Imaging
Linkou Chang Gung Memorial Hospital
Taoyuan
Taiwan

Department of Medical Imaging
and Radiological Sciences
Institute of Radiological Research
Chang Gung University
Taoyuan
Taiwan

ISBN 978-3-319-08776-4 ISBN 978-3-319-08777-1 (eBook)
DOI 10.1007/978-3-319-08777-1
Springer Cham Heidelberg New York Dordrecht London

Library of Congress Control Number: 2014955671

© Springer International Publishing Switzerland 2015

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed. Exempted from this legal reservation are brief excerpts in connection with reviews or scholarly analysis or material supplied specifically for the purpose of being entered and executed on a computer system, for exclusive use by the purchaser of the work. Duplication of this publication or parts thereof is permitted only under the provisions of the Copyright Law of the Publisher's location, in its current version, and permission for use must always be obtained from Springer. Permissions for use may be obtained through RightsLink at the Copyright Clearance Center. Violations are liable to prosecution under the respective Copyright Law.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

While the advice and information in this book are believed to be true and accurate at the date of publication, neither the authors nor the editors nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, with respect to the material contained herein.

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

Contents

1	Normal Variant and Congenital Anomalies	1
1.1	Renal Agenesis	1
	Case 1	1
	Key Diagnostic Features	2
	Main Differential Diagnoses	2
1.2	Floating Kidney	3
	Case 2	3
	Key Diagnostic Features	4
	Main Differential Diagnoses	4
1.3	Renal Ectopia	5
	Case 3	5
	Case 4	6
	Case 5	7
	Key Diagnostic Features	8
1.4	Malrotation of the Renal Axis	8
	Case 6	8
	Key Diagnostic Features	9
	Main Differential Diagnosis	9
1.5	Horseshoe Kidney	10
	Case 7	10
	Case 8	11
	Key Diagnostic Features	12
	Main Differential Diagnosis	12
1.6	Column of Bertin	12
	Case 9	12
	Key Diagnostic Features	13
	Main Differential Diagnoses	13
1.7	Duplex Kidney	14
	Case 10	14
	Case 11	14
	Case 12	15
	Key Diagnostic Features	15
1.8	Duplex Ureters	16
	Case 13	16
	Key Diagnostic Features	17
1.9	Ectopic Ureter Insertion to the Vagina	18
	Case 14	18
	Case 15	19
	Key Diagnostic Features	19

1.10	Simple Ureterocele	20
	Case 16	20
	Case 17	21
	Key Diagnostic Features	21
1.11	Intravesicular Ectopic Ureterocele in Duplex Ureters	22
	Case 18	22
	Case 19	23
	Key Diagnostic Features	25
1.12	Renal Calyceal Diverticulum	25
	Case 20	25
	Key Diagnostic Features	26
	Main Differential Diagnoses	26
1.13	Medullary Sponge Kidney	27
	Case 21	27
	Key Diagnostic Features	28
	Main Differential Diagnoses	28
1.14	Extrarenal Pelvis	29
	Case 22	29
	Key Diagnostic Features	30
	Main Differential Diagnoses	30
1.15	Congenital Ureteropelvic Obstruction	31
	Case 23	31
	Case 24	33
	Case 25	35
	Key Diagnostic Features	35
	Main Differential Diagnosis	35
1.16	Primary Megaureter	36
	Case 26	36
	Case 27	37
	Key Diagnostic Features	37
1.17	Vesicoureteral Reflux	38
	Case 28	38
	Case 29	39
	Key Diagnostic Features	39
1.18	Seminal Vesicle Cysts with Ipsilateral Renal Agenesis	40
	Case 30	40
	Key Diagnostic Features	41
	Main Differential Diagnoses of Congenital Seminal Vesicle Cysts	41
1.19	Urachal Cyst	42
	Case 31	42
	Key Diagnostic Features	42
1.20	Hematocolpos by Imperforate Hymen	43
	Case 32	43
	Key Diagnostic Features	44
1.21	Uterus Didelphys with Renal Agenesis and Hematocolpos	45
	Case 33	45
	Key Diagnostic Features	45
	References	47
2	Urinary Tract Infection and Inflammation	49
2.1	Acute Pyelonephritis	49
	Case 1	49
	Case 2	49
	Case 3	50
	Key Diagnostic Features	50
	Main Differential Diagnoses	50

2.2	Nephronia	51
	Case 4	51
	Key Diagnostic Features	52
	Main Differential Diagnoses	52
2.3	Renal Abscess	52
	Case 5	52
	Case 6	53
	Key Diagnostic Features	53
	Main Differential Diagnoses	53
2.4	Renal Subcapsular Abscess	54
	Case 7	54
	Key Diagnostic Features	55
	Main Differential Diagnoses	55
2.5	Perinephric Abscess	56
	Case 8	56
	Case 9	57
	Key Diagnostic Features	57
	Main Differential Diagnoses	57
2.6	Pyonephrosis	58
	Case 10	58
	Key Diagnostic Features	59
	Main Differential Diagnoses	59
2.7	Emphysematous Pyelitis	59
	Case 11	59
	Key Diagnostic Features	60
	Main Differential Diagnoses	60
2.8	Emphysematous Pyelonephritis	61
	Case 12	61
	Case 13	62
	Key Diagnostic Features	62
	Main Differential Diagnoses	62
2.9	Xanthogranulomatous Pyelonephritis	63
	Case 14	63
	Case 15	64
	Case 16	65
	Key Diagnostic Features	65
2.10	Renal Actinomycosis	66
	Case 17	66
	Key Diagnostic Features	66
2.11	Chronic Pyelonephritis	67
	Case 18	67
	Case 19	67
	Case 20	68
	Key Diagnostic Features	69
	Main Differential Diagnoses	69
2.12	Pyelitis Glandularis	69
	Case 21	69
	Key Diagnostic Features	70
2.13	Tuberculosis of the Urinary Tract	71
	Case 22	71
	Case 23	72
	Case 24	73
	Case 25	74
	Key Diagnostic Features	74

2.14	Renal Tuberculosis	75
	Case 26	75
	Case 27	76
	Case 28	76
	Case 29	77
	Case 30	78
	Case 31	78
	Key Diagnostic Features	79
2.15	Ureteral Tuberculosis	80
	Case 32	80
	Case 33	82
	Case 34	83
	Key Diagnostic Features	84
2.16	Urinary Bladder Tuberculosis	84
	Case 35	84
	Case 2	85
	Case 36	85
	Key Diagnostic Features	86
2.17	Emphysematous Cystitis	86
	Case 37	86
	Case 38	87
	Key Diagnostic Features	88
	Main Differential Diagnoses	88
2.18	Pneumocystitis (Gas in the Bladder Lumen)	88
	Case 39	88
	Case 40	89
	Key Diagnostic Features	89
	Main Differential Diagnoses	89
2.19	Cystitis Cystica and Cystitis Glandularis	90
	Case 41	90
	Case 42	90
	Key Diagnostic Features	91
2.20	Interstitial Cystitis	91
	Case 43	91
	Key Diagnostic Features	92
2.21	Polypoid Cystitis	93
	Case 44	93
	Key Diagnostic Features	93
2.22	Inflammatory Myofibroblastic Tumor (Inflammatory Pseudotumor) of the Urinary Bladder	94
	Case 45	94
	Key Diagnostic Features	94
	References	95
3	Renal Cystic Disease	97
3.1	Renal Simple Cyst: Bosniak's Category I	97
	Case 1	97
	Key Diagnostic Features	98
3.2	Renal Cystic Masses of Bosniak's Category II	99
	Case 2	99
	Case 3	99
	Case 4	101
	Key Diagnostic Features	101

3.3	Renal Cystic Masses of Bosniak's IIF Category	102
	Case 5	102
	Case 6	102
	Key Diagnostic Features	103
3.4	Renal Cystic Masses of Bosniak's Category III	104
	Case 7	104
	Case 8	105
	Case 9	105
	Key Diagnostic Features	106
3.5	Renal Cystic Masses of Bosniak's Category IV	107
	Case 10	107
	Case 11	108
	Key Diagnostic Features	108
3.6	Renal Hemorrhagic Cysts	109
	Case 12	109
	Case 13	110
	Case 14	110
	Key Diagnostic Features	111
	Main Differential Diagnosis	111
3.7	Milk of Calcium Cyst	112
	Case 15	112
	Case 16	113
	Key Diagnostic Features	113
3.8	Renal Infected Cyst	114
	Case 17	114
	Case 18	115
	Key Diagnostic Features	115
3.9	Renal Cyst Rupture	116
	Case 19	116
	Key Diagnostic Features	116
3.10	Parapelvic Cyst	117
	Case 20	117
	Case 21	118
	Key Diagnostic Features	119
	Main Differential Diagnosis	119
3.11	Multilocular Cystic Nephroma	120
	Case 22	120
	Key Diagnostic Features	121
	Main Differential Diagnosis	121
3.12	Renal Lymphangiomas	122
	Case 23	122
	Key Diagnostic Features	122
3.13	Multilocular Cystic Renal Cell Carcinomas	123
	Case 24	123
	Case 25	123
	Case 26	124
	Key Diagnostic Features	125
	Main Differential Diagnoses	125
3.14	Renal Cysts Associated with Tuberous Sclerosis Complex (TSC)	125
	Case 27	125
	Key Diagnostic Features	126
3.15	Renal Cysts Associated with Von Hippel-Lindau (VHL) Disease	127
	Case 28	127
	Key Diagnostic Features	128

3.16	Autosomal Dominant Polycystic Kidney Disease	129
	Case 29	129
	Case 30	129
	Case 31	130
	Key Diagnostic Features	131
3.17	Acquired Renal Cystic Disease	132
	Case 32	132
	Case 33	133
	Key Diagnostic Features	134
	Main Differential Diagnosis	134
3.18	Multicystic Dysplastic Kidney Disease	135
	Case 34	135
	Case 35	137
	Key Diagnostic Features	137
3.19	Unilateral Renal Cystic Disease	138
	Case 36	138
	Key Diagnostic Features	139
	Main Differential Diagnosis	139
	References	139
4	Renal Parenchymal Neoplasms	141
4.1	Clear Cell Renal Cell Carcinoma	141
	Case 1	141
	Case 2	142
	Case 3	143
	Case 4	144
	Case 5	145
	Case 6	146
	Key Diagnostic Features	146
4.2	Chromophobe Renal Cell Carcinoma	147
	Case 7	147
	Case 8	148
	Case 9	149
	Key Diagnostic Features	149
4.3	Papillary Renal Cell Carcinoma	150
	Case 10	150
	Case 11	151
	Case 12	152
	Key Diagnostic Features	152
4.4	Collecting Duct Carcinoma	153
	Case 13	153
	Key Diagnostic Features	153
4.5	Renal Cell Carcinoma with Perinephric Extension and Lymph Node Metastasis	154
	Case 14	154
	Key Diagnostic Features	154
4.6	Cystic Renal Cell Carcinomas	155
	Case 15	155
	Case 16	155
	Key Diagnostic Features	156
	Main Differential Diagnoses	156
4.7	Renal Small Cell Carcinoma	156
	Case 17	156
	Case 18	157
	Key Diagnostic Features	158

4.8	Renal Sarcoma	158
	Case 19	158
	Key Diagnostic Features	159
	Main Differential Diagnoses	159
4.9	Renal Lymphoma	160
	Case 20	160
	Case 21	161
	Key Diagnostic Features	161
4.10	Primitive Neuroectodermal Tumor (PNET) of the Kidney	162
	Case 22	162
	Case 23	163
	Key Diagnostic Features	163
4.11	Renal Metastasis	164
	Case 24	164
	Key Diagnostic Features	165
	Main Differential Diagnosis	165
4.12	Renal Angiomyolipomas With Detectable or Abundant Fat	165
	Case 25	165
	Case 26	166
	Case 27	167
	Key Diagnostic Features	168
4.13	Renal Angiomyolipomas With Minimal or Undetectable Fat	168
	Case 28	168
	Case 29	169
	Case 30	169
	Key Diagnostic Features	170
4.14	Exophytic Renal Angiomyolipomas	170
	Case 31	170
	Case 32	171
	Case 33	171
	Key Diagnostic Features	172
4.15	Renal Angiomyolipomas With Spontaneous Bleeding	172
	Case 34	172
	Case 35	173
	Case 36	174
	Key Diagnostic Features	174
4.16	Renal Angiomyolipomas with Aneurysmal Dilatation of Tumor Vessels	175
	Case 37	175
	Case 38	176
	Key Diagnostic Features	176
	Main Differential Diagnoses	176
4.17	Renal Angiomyolipomas with IVC Thrombosis or Distant Metastasis	177
	Case 39	177
	Case 40	178
	Key Diagnostic Features	179
	Main Differential Diagnoses	179
4.18	Renal Oncocytomas	179
	Case 41	179
	Case 42	180
	Key Diagnostic Features	181
4.19	Renal Hemangioma	181
	Case 43	181
	Key Diagnostic Features	182

4.20	Renal Leiomyoma	182
	Case 44	182
	Case 45	183
	Key Diagnostic Features	183
4.21	Wilms' Tumor	184
	Case 46	184
	Case 47	184
	Key Diagnostic Features	185
4.22	Mesoblastic Nephroma	185
	Case 48	185
	Key Diagnostic Features	186
	References	186
5	Lesions of the Urinary Tract and Renal Sinus	187
5.1	Renal Calyceal Calculi	187
	Case 1	187
	Case 2	188
	Case 3	188
	Key Diagnostic Features	189
5.2	Ureteropelvic Junction Calculi	190
	Case 4	190
	Case 5	191
	Case 6	193
	Key Diagnostic Features	194
5.3	Renal Staghorn Stone	195
	Case 7	195
	Case 8	196
	Case 9	197
	Key Diagnostic Features	198
5.4	Ureteral Calculus	200
	Case 10	200
	Case 11	201
	Case 12	203
	Case 13	204
	Key Diagnostic Features	204
5.5	Ureterovesical Calculus	205
	Case 14	205
	Case 15	206
	Key Diagnostic Features	206
5.6	Urinary Bladder Calculus	207
	Case 16	207
	Case 17	207
	Case 18	208
	Case 19	209
	Key Diagnostic Features	209
5.7	Urethral Calculus	210
	Case 20	210
	Case 21	211
	Key Diagnostic Features	211
5.8	Cystocele	212
	Case 22	212
	Case 23	213
	Key Diagnostic Features	214

5.9	Bladder Herniation	215
	Case 24	215
	Case 25	216
	Case 26	217
	Key Diagnostic Features	217
5.10	Bladder Diverticulum	218
	Case 27	218
	Case 28	219
	Key Diagnostic Features	219
5.11	Female Urethral Diverticulum	220
	Case 29	220
	Case 30	221
	Key Diagnostic Features	221
5.12	Renal Urothelial Carcinoma	222
	Case 31	222
	Case 32	223
	Case 33	224
	Case 34	225
	Key Diagnostic Features	225
	Main Differential Diagnoses	225
5.13	Ureteral Urothelial Carcinoma	226
	Case 35	226
	Case 36	227
	Case 37	228
	Case 38	229
	Case 39	231
	Key Diagnostic Features	232
	Main Differential Diagnoses	232
5.14	Bladder Urothelial Carcinomas	233
	Case 40	233
	Case 41	234
	Case 42	235
	Case 43	236
	Case 44	236
	Case 45	237
	Key Diagnostic Features	237
	Main Differential Diagnoses	237
5.15	Synchronous Urothelial Carcinomas of Multiple Urinary Organs	238
	Case 46	238
	Case 47	240
	Key Diagnostic Features	240
5.16	Urethral Urothelial Carcinoma	242
	Case 48	242
	Case 49	242
	Case 50	243
	Key Diagnostic Features	243
5.17	Renal Squamous Cell Carcinoma	244
	Case 51	244
	Case 52	245
	Case 53	247
	Key Diagnostic Features	248
	Main Differential Diagnosis	248

5.18	Squamous Cell Carcinomas of the Urinary Bladder	249
	Case 54	249
	Key Diagnostic Features	250
5.19	Small Cell Carcinomas of the Urinary Bladder	251
	Case 55	251
	Case 56	252
	Case 57	253
	Key Diagnostic Features	254
5.20	Adenocarcinomas of the Urinary Bladder	254
	Case 58	254
	Case 59	255
	Key Diagnostic Features	255
5.21	Paraganglioma of the Urinary Bladder	256
	Case 60	256
	Case 61	257
	Key Diagnostic Features	257
5.22	Renal Angiomyolipomas Located in the Renal Sinus	258
	Case 62	258
	Case 63	259
	Case 64	260
	Key Diagnostic Features	261
	Main Differential Diagnoses	261
5.23	Renal Sinus Lipomatosis	262
	Case 65	262
	Key Diagnostic Features	262
5.24	Renal Schwannoma	263
	Case 66	263
	Key Diagnostic Features	264
5.25	Renal Carcinoid Tumor	264
	Case 67	264
	Key Diagnostic Features	265
	References	265
6	Vascular Diseases and Normal Variants	267
6.1	Multiple Renal Arteries	267
	Case 1	267
	Case 2	268
	Case 3	269
	Key Diagnostic Features	269
	Main Differential Diagnoses	269
6.2	Two Right Renal Veins	270
	Case 4	270
	Case 5	271
	Key Diagnostic Features	272
6.3	Retroaortic Left Renal Vein	272
	Case 6	272
	Key Diagnostic Features	273
	Main Differential Diagnoses	273
6.4	Circumaortic Left Renal Veins	273
	Case 7	273
	Key Diagnostic Features	274
6.5	Nutcracker Phenomenon and Syndrome	275
	Case 8	275
	Case 9	276
	Case 10	277
	Key Diagnostic Features	277

6.6	Left Side Inferior Vena Cava	278
	Case 11	278
	Case 12	280
	Key Diagnostic Features	280
	Main Differential Diagnoses	280
6.7	Double Inferior Vena Cava	281
	Case 13	281
	Case 14	282
	Key Diagnostic Features	282
	Main Differential Diagnoses	282
6.8	Circumcaval Ureter (Retrocaval Ureter)	283
	Case 15	283
	Key Diagnostic Features	285
6.9	Renal Artery Aneurysm	285
	Case 16	285
	Case 17	286
	Case 18	287
	Key Diagnostic Features	287
6.10	Renal Arteriovenous Malformation	288
	Case 19	288
	Case 20	289
	Case 21	290
	Key Diagnostic Features	290
6.11	Renal Vein Aneurysm	291
	Case 22	291
	Key Diagnostic Features	292
6.12	Renal Vein Varix	293
	Case 23	293
	Key Diagnostic Features	295
6.13	Renal Arterial Stenosis by Artherosclerosis	295
	Case 24	295
	Case 25	296
	Key Diagnostic Features	296
6.14	Fibromuscular Dysplasia	296
	Case 26	296
	Case 27	297
	Key Diagnostic Features	297
6.15	Polyarteritis Nodosa (PAN)	298
	Case 28	298
	Case 29	299
	Key Diagnostic Features	299
	Main Differential Diagnoses	300
6.16	Renal Infarct	300
	Case 30	300
	Case 31	302
	Case 32	302
	Case 33	303
	Key Diagnostic Features	303
	Main Differential Diagnoses	303
6.17	Renal Vein Thrombosis	304
	Case 34	304
	Case 35	304
	Key Diagnostic Features	305

6.18	Inferior Vena Cava Thrombosis	305
	Case 36	305
	Case 37	306
	Key Diagnostic Features	306
6.19	Spontaneous Renal or Retroperitoneal Hemorrhage	307
	Case 38	307
	Case 39	308
	Key Diagnostic Features	308
	References	309
7	Retroperitoneal Diseases	311
7.1	Retroperitoneal Liposarcoma	311
	Case 1	311
	Case 2	312
	Key Diagnostic Features	313
	Main Differential Diagnoses	313
7.2	Malignant Fibrous Histiocytoma of the Retroperitoneum	314
	Case 3	314
	Key Diagnostic Features	314
	Main Differential Diagnoses	314
7.3	Retroperitoneal Leiomyosarcoma	315
	Case 4	315
	Key Diagnostic Features	316
7.4	Lymphoma With Retroperitoneal Involvement	317
	Case 5	317
	Case 6	318
	Key Diagnostic Features	319
	Main Differential Diagnoses	319
7.5	Retroperitoneal Lymph Node Metastasis	320
	Case 7	320
	Case 8	320
	Key Diagnostic Features	320
7.6	Castleman's Disease	321
	Case 9	321
	Case 10	322
	Key Diagnostic Features	322
	Main Differential Diagnosis	322
7.7	Retroperitoneal Schwannoma	323
	Case 11	323
	Case 12	324
	Key Diagnostic Features	325
	Main Differential Diagnosis	325
7.8	Retroperitoneal Neurofibroma	326
	Case 13	326
	Key Diagnostic Features	326
7.9	Retroperitoneal Paraganglioma	327
	Case 14	327
	Case 15	328
	Key Diagnostic Features	328
7.10	Retroperitoneal Ganglioneuroma	329
	Case 16	329
	Key Diagnostic Features	330
	Main Differential Diagnosis	330

7.11	Retroperitoneal Mature Teratoma	330
	Case 17	330
	Key Diagnostic Features	331
7.12	Retroperitoneal Lymphangioma	331
	Case 18	331
	Case 19	332
	Key Diagnostic Features	332
7.13	Angiomyolipoma in the Retroperitoneal Space	333
	Case 20	333
	Case 21	334
	Case 22	335
	Key Diagnostic Features	336
	Main Differential Diagnoses	336
7.14	Retroperitoneal Fibrosis	337
	Case 23	337
	Case 24	338
	Key Diagnostic Features	339
7.15	Retroperitoneal Abscess	339
	Case 25	339
	Case 26	341
	Key Diagnostic Features	341
7.16	Retroperitoneal Hematoma	342
	Case 27	342
	Case 28	343
	Case 29	343
	Key Diagnostic Features	343
7.17	Retroperitoneal Urinoma and Urine Extravasation	344
	Case 30	344
	Case 31	345
	Key Diagnostic Features	346
7.18	Psoas Pyogenic Abscess	346
	Case 32	346
	Case 33	347
	Key Diagnostic Features	347
7.19	Psoas Cold Abscess by Tuberculosis	348
	Case 34	348
	Case 35	350
	Key Diagnostic Features	351
7.20	Iliacus and Psoas Metastasis	351
	Case 36	351
	Case 37	352
	Case 38	352
	Key Diagnostic Features	353
	References	353
8	Adrenal Gland	355
8.1	Adrenal Pseudotumor	355
	Case 1	355
	Case 2	356
	Case 3	356
	Key Diagnostic Features	357
8.2	Adrenal Tuberculosis	357
	Case 4	357
	Key Diagnostic Features	358

8.3	Adrenal Extramedullary Hematopoiesis	358
	Case 5	358
	Key Diagnostic Features	360
8.4	Adrenal Hemorrhage	360
	Case 6	360
	Key Diagnostic Features	361
8.5	Adrenal Cyst	362
	Case 7	362
	Case 8	363
	Case 9	364
	Case 10	365
	Case 11	365
	Key Diagnostic Features	366
	Main Differential Diagnoses	366
8.6	Adrenal Hyperplasia	366
	Case 12	366
	Case 13	367
	Case 14	368
	Key Diagnostic Features	368
	Main Differential Diagnoses	368
8.7	Adrenal Adenoma	369
	Case 15	369
	Case 16	370
	Case 17	371
	Key Diagnostic Features	371
	Main Differential Diagnoses	372
8.8	Adrenal Aldosteronoma (Aldosterone-Producing Adenoma)	372
	Case 19	372
	Case 20	373
	Key Diagnostic Features	374
8.9	Adrenal Myelolipoma	374
	Case 21	374
	Case 22	375
	Key Diagnostic Features	375
8.10	Adrenal Ganglioneuroma	376
	Case 23	376
	Case 24	376
	Key Diagnostic Features	377
8.11	Adrenal Hemangioma	377
	Case 25	377
	Key Diagnostic Features	378
8.12	Adrenal Pheochromocytoma	379
	Case 26	379
	Case 27	380
	Case 28	380
	Key Diagnostic Features	381
	Main Differential Diagnoses	381
8.13	Adrenocortical Carcinoma	382
	Case 29	382
	Case 30	383
	Case 31	383
	Key Diagnostic Features	384
	Main Differential Diagnoses	384

8.14	Adrenal Metastasis	384
	Case 32	384
	Case 33	385
	Case 34	385
	Key Diagnostic Features	385
8.15	Primary Adrenal Lymphoma	386
	Case 35	386
	Key Diagnostic Features	387
8.16	Adrenal Neuroblastoma	387
	Case 36	387
	Case 37	388
	Case 38	389
	Case 39	390
	Key Diagnostic Features	390
	References	390
9	Male Reproductive System: Prostate Gland, Seminal Vesicles, and Scrotum	391
9.1	Benign Prostate Hyperplasia	391
	Case 1	391
	Case 2	392
	Case 3	393
	Key Diagnostic Features	393
9.2	Prostate Tuberculosis	394
	Case 4	394
	Key Diagnostic Features	394
9.3	Tuberculosis of the Seminal Vesicles	395
	Case 5	395
	Key Diagnostic Features	395
9.4	TB Orchitis and Epididymitis	396
	Case 6	396
	Key Diagnostic Features	396
9.5	Prostate Cancer Confined in the Prostate Gland	397
	Case 7	397
	Case 8	397
	Case 9	398
	Key Diagnostic Features	398
	Main Differential Diagnoses	398
9.6	Prostate Cancer with Extracapsular Extension	399
	Case 10	399
	Case 11	399
	Case 12	400
	Case 13	401
	Key Diagnostic Features	402
9.7	Prostate Cancer with Seminal Vesicle Invasion	403
	Case 14	403
	Case 15	404
	Key Diagnostic Features	404
	Main Differential Diagnoses	405
9.8	Prostate Cancer with Bladder Invasion	406
	Case 16	406
	Case 17	407
	Key Diagnostic Features	407
	Main Differential Diagnoses	407

9.9	Prostate Cancer with Rectal Invasion	408
	Case 18	408
	Case 19	409
	Key Diagnostic Features	409
9.10	Prostate Cancer With Osteoblastic Metastasis	410
	Case 20	410
	Case 21	411
	Case 22	412
	Key Diagnostic Features	413
9.11	Prostate Sarcoma	414
	Case 23	414
	Case 24	415
	Key Diagnostic Features	416
9.12	Testicular Hematoma	416
	Case 25	416
	Key Diagnostic Features	417
9.13	Testicular Microlithiasis	418
	Case 26	418
	Key Diagnostic Features	418
9.14	Testicular Seminomas	418
	Case 27	418
	Case 28	419
	Case 29	420
	Key Diagnostic Features	420
9.15	Testicular Non-seminomatous Mixed Germ Cell Tumors	420
	Case 30	420
	Case 31	421
	Case 32	422
	Key Diagnostic Features	422
9.16	Testicular Teratocarcinomas	423
	Case 33	423
	Key Diagnostic Features	424
9.17	Testicular Embryonal Carcinomas	424
	Case 34	424
	Case 35	425
	Case 36	425
	Key Diagnostic Features	425
9.18	Testicular Choriocarcinoma	426
	Case 37	426
	Key Diagnostic Features	427
9.19	Testicular Lymphoma	427
	Case 38	427
	Case 39	428
	Key Diagnostic Features	429
9.20	Varicocele	429
	Case 40	429
	Case 41	430
	Key Diagnostic Features	430
9.21	Paratesticular Liposarcoma	431
	Case 42	431
	Case 43	433
	Key Diagnostic Features	444

9.22	Inguinal Hernia	435
	Case 44	435
	Case 45	436
	Case 46	437
	Key Diagnostic Features	438
9.23	Penile Carcinoma	439
	Case 47	439
	Case 48	439
	Key Diagnostic Features	440
9.24	Fournier's Gangrene	440
	Case 49	440
	Case 50	441
	Key Diagnostic Features	441
	References	442
10	Female Reproductive System	443
10.1	Uterine Prolapse	443
	Case 1	443
	Key Diagnostic Features	444
10.2	Uterine Myomas	444
	Case 2	444
	Case 3	445
	Case 4	445
	Case 5	446
	Case 6	446
	Key Diagnostic Features	447
10.3	Adenomyosis	447
	Case 7	447
	Key Diagnostic Features	448
10.4	Uterine Leiomyosarcomas	449
	Case 8	449
	Key Diagnostic Features	451
10.5	Endometrial Carcinoma	451
	Case 9	451
	Case 10	452
	Case 11	453
	Key Diagnostic Features	453
10.6	Uterine Lymphoma	454
	Case 12	454
	Key Diagnostic Features	454
10.7	Cervical Carcinoma	455
	Case 13	455
	Case 14	456
	Case 15	457
	Key Diagnostic Features	458
10.8	Ovarian Endometrioma	458
	Case 16	458
	Key Diagnostic Features	459
	Main Differential Diagnoses	459
10.9	Paraovarian Cyst	460
	Case 17	460
	Key Diagnostic Features	460

10.10	Tubo-ovarian Abscess and Pyosalpinx	461
	Case 18	461
	Key Diagnostic Features	461
	Main Differential Diagnosis	461
10.11	Ovarian Serous and Mucinous Cystadenomas	462
	Case 19	462
	Case 20	463
	Key Diagnostic Features	463
10.12	Ovarian Mature Cystic Teratoma	464
	Case 21	464
	Case 22	465
	Key Diagnostic Features	465
10.13	Ovarian Carcinoma	466
	Case 23	466
	Case 24	466
	Key Diagnostic Features	467
10.14	Krukenberg Tumor	468
	Case 25	468
	Key Diagnostic Features	468
10.15	Bartholin Cyst	469
	Case 26	469
	Key Diagnostic Features	469
10.16	Vaginal Melanoma	470
	Case 27	470
	Key Diagnostic Features	470
10.17	Vulval Carcinoma	471
	Key Diagnostic Features	471
	References	472
11	Injury, Post-interventional Disease, and Blunt Trauma	473
11.1	Ketamine Cystitis	473
	Case 1	473
	Key Diagnostic Features	474
11.2	Flank Herniation After Nephrectomy	475
	Case 2	475
	Key Diagnostic Features	475
11.3	Colocutaneous Fistula After Nephrectomy	476
	Case 3	476
	Key Diagnostic Features	476
11.4	Urothelial Carcinomas of the Ureteral Stump	477
	Case 4	477
	Case 5	478
	Key Diagnostic Features	478
11.5	Renal Subcapsular Hematoma After Extracorporeal Shock Wave Lithotripsy (ESWL)	479
	Case 6	479
	Case 7	479
	Case 8	480
	Key Diagnostic Features	480
11.6	Renal Vascular Injury After Surgery or Intervention	480
	Case 9	480
	Case 10	481
	Case 11	482
	Key Diagnostic Features	482

11.7	Urine Leakage from Renal Collecting System After Renal Surgery	483
	Case 12	483
	Case 13	484
	Key Diagnostic Features	484
11.8	Iatrogenic Ureteral Trauma	485
	Case 14	485
	Case 15	486
	Key Diagnostic Features	486
11.9	Stone of Allograft Ureter	487
	Case 16	487
	Key Diagnostic Features	487
11.10	Bladder Rupture After Transurethral Resection of the Bladder Tumor (TURBT)	488
	Case 17	488
	Case 18	488
	Key Diagnostic Features	488
11.11	Irradiation Cystitis	489
	Case 19	489
	Key Diagnostic Features	489
11.12	Urinary Stones in Ileal Conduit	490
	Case 20	490
	Key Diagnostic Features	491
11.13	Vesicourethral Leak After Prostatectomy	492
	Case 21	492
	Key Diagnostic Features	492
11.14	Vesicovaginal Fistula	493
	Case 22	493
	Case 23	494
	Key Diagnostic Features	495
11.15	Recurrent Cervical Cancer After Hysterectomy	496
	Case 24	496
	Case 25	497
	Key Diagnostic Features	497
11.16	Intrauterine Device (IUD) Migration	498
	Case 26	498
	Key Diagnostic Features	498
11.17	Transurethral Resection of the Prostate (TURP)	499
	Case 27	499
	Case 28	499
	Key Diagnostic Features	499
11.18	Local Recurrence of Prostate Cancer After Radical Prostatectomy	500
	Case 29	500
	Case 30	501
	Key Diagnostic Features	501
11.19	Blunt Renal Injury	502
	Case 31	502
	Case 32	502
	Case 33	503
	Case 34	503
	Case 35	504
	Case 36	504
	Key Diagnostic Features	505

- [read online How to Draw Anime & Game Characters, Volume 1: Basics for Beginners and Beyond](#)
- [click The Lazarus Machine \(Tweed & Nightingale Adventure, Book 1\) for free](#)
- [download online Feet on the Street: Rambles Around New Orleans \(Crown Journeys\)](#)
- [Cows for Kids, Cow Fun and Facts book](#)
- [Personality Politics?: The Role of Leader Evaluations in Democratic Elections online](#)

- <http://yachtwebsitedemo.com/books/How-to-Draw-Anime---Game-Characters--Volume-1--Basics-for-Beginners-and-Beyond.pdf>
- <http://www.satilik-kopek.com/library/Political-Communication-in-Britain--The-Leader-s-Debates--the-Campaign-and-the-Media-in-the-2010-General-Electi>
- <http://www.shreesaiexport.com/library/Bad-Bites--Donut-Shop-Mystery--Book-16-.pdf>
- <http://www.freightunlocked.co.uk/lib/Cows-for-Kids--Cow-Fun-and-Facts.pdf>
- <http://yachtwebsitedemo.com/books/Mao--A-Very-Short-Introduction--Very-Short-Introductions-.pdf>