

INDEX

- abdominal aortic aneurysm 503, 667
 - endoleaks 668
- abdominal calcification 790
- abdominal/pelvic angiography 703–721
 - anastomotic pathways 708–709
 - anatomy 703–707
- abscess
 - amebic 473
 - Bezold 284
 - brain 211, 277
 - breast 596, 632
 - Brodie 385
 - kidney/renal 171, 174, 489
 - liver 89
 - lung 22
 - orbital 315
 - paraspinal 74
 - peritonsillar 284
 - pyogenic
 - brain 277
 - liver 472
 - spleen 119
 - retropharyngeal 284
 - pediatric 744
 - spleen 119
 - submandibular/masticator 287
 - subperiosteal 315
- acalculous cholecystitis 466
- acardiac twins 529
- accordion ribs 810
- ACE inhibitor renogram 583
- acetabular fracture 427
- achalasia 128
- Achilles tendon injury 410
- achondroplasia 809
- acinar cell carcinoma 109
- acromegaly 358, 391
- acromioclavicular joint 438
- acute disseminated
 - encephalomyelitis 276
- adamantinoma 382
- adenocarcinoma
 - bladder 183
 - lung 35
 - pancreas 108, 484
- adenoid cystic carcinoma
 - anterior skull base 301
 - salivary gland 297
 - trachea 81
- adenoma
 - adrenal gland 161
 - esophagus 126
 - hepatic 98, 474
 - lactational 627
 - parathyroid 506, 569
- adenomatous polyp 131
- adenomyomatosis 467
- adenomyosis 192, 512
- adenosine stress test 562
- adhesive capsulitis 446
- adnexae
 - cystic lesions 516–517
 - torsion 517
 - vascular disease 517
- adrenal biopsy 162
- adrenal calcification 165
- adrenal cyst 163
- adrenal glands 160–165
 - anatomy 160
 - cortex 160
 - carcinoma 160, 165, 800
 - hemorrhage 165
 - hyperplasia 165
 - lesions of 160–161
 - medulla 160
 - tumors
 - imaging 161–163
 - malignant 164–165
 - pediatric 799–800
- adrenal hemorrhage 800
- Adson’s maneuver 734
- aggar nasi cell 292
- AIDS *see* HIV/AIDS
- air crescent sign 30
- air embolism 697
- air kerma 844
- airway-invasive aspergillosis 30
- airways 75–82
 - emphysema 19, 79–80
 - large airway disease 77–78
- pediatric 742
 - anatomy 742
 - congenital pulmonary airway malformation 542, 755
 - small airways disease 756–758
 - stridor 744–745
 - upper airway obstruction 743
 - vascular rings/slings 746–749
- tracheal stenosis/thickening
 - focal 77
 - multifocal/diffuse 75–77
 - tumors 80–82
- ALCAPA 677
- alkaptonuria 359
- allergic bronchopulmonary
 - aspergillosis 29
- alveolar edema 31
- amebic abscess 473
- amniotic fluid 537
 - index 532
- Amplatz wire 699
- amyloid 91
- amyloid arthropathy 359
- amyloidosis, trachea 76
- anaplastic astrocytoma 218
- Andersson lesion 354
- anencephaly 538
- aneurysm
 - aortic
 - abdominal 503, 667, 668
 - thoracic 73, 666
 - aortic arch 72
 - brain 231, 237, 263
 - false 683
 - hepatic artery 710
 - iliac artery 728
 - left ventricle 683
 - popliteal 732
 - splenic artery 710
 - vein of Galen 242
- aneurysmal bone cyst 334
- aneurysmal hemorrhage 269
- angiodysplasia 711

- angiography 694–740
 - abdominal/pelvic 703–721
 - catheters 698
 - CT *see* CT angiography
 - femoral access 696
 - injection rates 697
 - interpretation 695
 - lower extremity 726–732
 - thoracic 699–702
 - upper extremity 733–738
 - wires 699
- angioinvasive aspergillosis 30
- angiomyolipoma 797
 - renal 168, 487
 - renal artery 714–715
- angiosarcoma
 - bone 378
 - breast 634
 - spleen 120
- ankle *see* foot/ankle
- ankylosing spondylitis 354
- ankylosis 362–363
- anomalous left coronary artery from pulmonary artery *see* ALCAPA
- anorectal malformations 783
- anterior cerebral artery 250
- anterior cruciate ligament 417–419
- anterior labro-ligamentous periosteal sleeve avulsion 450
- anterior skull base 299–301
 - anatomy 299–300
 - benign neoplasms 300
 - malignant neoplasms 301
- antrochoanal polyp 293
- anus, imperforate 783
- aorta 659–672
 - acute aortic syndrome 661–664
 - anatomy 659–660
 - aneurysms
 - abdominal aorta 503, 667
 - aortic arch 72
 - thoracic aorta 73, 666
 - ascending 72
 - atherosclerotic distal occlusive disease 727
 - disease 503–504
 - dissection 504, 661–662
 - intramural hematoma 663
 - penetrating atherosclerotic ulcer 664
 - trauma 665
- aortic arch
 - aneurysm 72
 - double 747
 - left-sided, with aberrant right subclavian artery 748
 - right-sided 746
 - with aberrant left subclavian artery 747
- aortic coarctation 672, 762, 769
- aortic valve
 - stenosis 685
 - regurgitation 685
- aortitis 670
- AP window 67
- apical petrositis 309
- appendicitis 771, 782
- arachnoid cyst 231
- arachnoiditis 332
- arc of Barkow 708
- arc of Buhler 708
- arc of Riolan 709
- arcuate uterus 509
- arrhythmogenic cardiomyopathy 686
- arterial compression syndromes 716–717
- arterial occlusive disease 731
- arteriovenous fistula
 - dialysis access 736
 - femoral 696
 - renal 715
- arteriovenous malformation
 - brain 257
 - intraparenchymal hemorrhage 269
 - pulmonary 701
 - renal 169, 715
- arteritis
 - giant cell 699
 - Takayasu 671
- arthritis 347–362
 - juvenile idiopathic 360, 820
 - osteoarthritis 347
 - psoriatic 355
 - rheumatoid 350–352
 - septic 389
 - hip 812
- arthritis mutilans 355
- asbestosis 56
- ascites, fetus 536
- aspergillosis
 - airway-invasive 30
 - allergic bronchopulmonary 29
 - angioinvasive 30
 - saprophytic 29
 - semi-invasive (chronic necrotizing) 30
- Aspergillus* 28–30
 - sinusitis 293
- asphyxiating thoracic dystrophy 810
- astrocytes 216
- astrocytoma 237
 - fibrillary 217–218
 - grade I 217
 - intramedullary 329
 - see also specific types*
- atalectasis 3–7
 - lobar 3–7
 - round 7
- atherosclerosis 664
 - distal aortic 727
 - iliac 727
- atlantoaxial subluxation 352
- atoll sign 757
- atria
 - left, enlargement 682
 - septal defect 763
- atypical teratoid/rhabdoid tumor 220
- autoimmune pancreatitis 115–116
- autosomal dominant polycystic disease
 - kidney 173, 490, 795
 - liver 99
- autosomal recessive polycystic disease, kidney 491, 795
- avascular necrosis 431
 - nuclear imaging 580
- axillary masses 633
- azygoesophageal recess 67, 68
- bacterial infection
 - brain 277–278
 - see also* infection
- Baker’s cyst 425
- ball on tee sign 176
- Balthazar grading system 114
- bamboo spine 354
- banana sign 539
- Bankart lesion 439, 450
- Barrett esophagus 124
 - stricture 125
- basal cisterns 205
- bear paw sign 175
- Beckwith–Wiedeman syndrome 549
- Behçet syndrome, tracheal stenosis 77
- bell-clapper deformity 497
- Bennett fracture 461
- Bennett lesion 452
- Bentson wire 699
- Bezold abscess 284
- biceps tendon 447–448
 - dislocation 448
 - subluxation 447
 - tear 447
- bicornuate uterus 196, 509
- bile ducts
 - anatomical variants 102

- aberrant right posterior duct 102
- low insertion of cystic duct 102
- dilation 471
- infection/inflammation 104–105
- injury 723
- malignant obstruction 723
- ultrasound 470–471
- biliary atresia 784
- biliary cystadenoma 474
- biliary hamartoma 99
- biliary imaging 100–106
- biliary leak 574
- biliary tumors 105–106
- biopsy
 - adrenal 162
 - breast 652, 653–654, 654
- biparietal diameter 531
- Birt–Hogg–Dube syndrome 170
- bladder 183–185
 - adenocarcinoma 183
 - cancer, PET-CT 559
 - stones 183
 - transitional cell carcinoma 183
 - trauma 184–185
- Blalock–Taussig shunt 762
- Bland–White–Garland syndrome 677
- Blastomyces dermatitidis* 26
- bleb 19
- blood–brain barrier 209
- Blount disease 822
- bone 347
 - formation 362–363
- bone cyst 382
 - aneurysmal 382
- bone disease
 - differential diagnosis 398
 - diffuse 390–397
 - endocrine 391–393
 - hematologic 396–397
 - idiopathic 394–395
 - infection 385–390
 - lytic bone lesions 816–819
 - metabolic 819
 - multifactorial 390
 - vitamin deficiency 391
 - see also specific lesions*
- bone mineral density 362
- bone tumors 365–366
 - benign mimics 383–384
 - Lodwick classification 366
 - metastatic 383
 - morphology 365–366
 - pediatric 815
- bone-forming lesions 367–370
- Borrelia burgdorferi* 278
- boutonniere deformity 460
- boxer’s fracture 461
- brachiocephalic artery 659
- brain
 - abscess 211, 277
 - aneurysm 231, 237, 263
 - cortical anatomy 246
 - fetus 538–541
 - gray matter heterotopia 827
 - hemorrhage 214
 - intraparenchymal 266–271, 269
 - intraventricular 243
 - subarachnoid 243, 260–263
 - infection 277–281
 - bacterial 277–278
 - fungal 278
 - parasitic 278–279
 - prion 281
 - viral 280
 - toxic/metabolic disease 282
 - trauma 243–245
 - tumors 214–242
 - evaluation 214–216
 - metastatic 82, 227, 238, 242
 - recurrence vs. radiation necrosis 589
 - see also individual types/regions*
 - vascular anatomy 247–251
 - arterial territories 251
 - venous disease 264–265
 - white matter disease 272–276
- brain death 588
- branchial cleft cyst 286
- breast
 - abscess 596, 632
 - accessory tissue 638
 - architectural distortion 637
 - asymmetries 636, 637
 - biopsy
 - MR-guided 654
 - stereotactic-guided 653–654
 - ultrasound-guided 652
 - interventions 652–655
 - mammographic-guided wire localization 655
 - ultrasound-guided cyst aspiration 653
 - normal variants 638
 - breast cancer 593–595
 - angiosarcoma 634
 - histologic subtypes 594
 - imaging
 - mammography *see* mammography
 - PET-CT 558
 - ultrasound 626
 - inflammatory carcinoma 595
 - invasive ductal carcinoma 631
 - invasive lobular carcinoma 594, 631
 - lymphoma 634
 - men 651
 - metastasis 635
 - nodal 633
 - Paget disease of nipple 595
 - prognosis 595
 - risk factors 594
 - tubular carcinoma 631
- benign breast disease 596–597
 - fibrocystic change 596
 - fibrosis 633
 - sclerosing adenosis 596
- calcifications 607–613
 - benign 607–609
 - calcium distribution 612–613
 - high probability of malignancy 611
 - intermediate concern 610
- cystic lesions 629–630
 - clustered microcysts 630
 - complex mass 630
 - complicated 629
 - simple 629
- infectious/inflammatory 596–597
- masses *see* breast masses
- men 651
- breast feeding
 - contrast media
 - gadolinium-based 843
 - iodinated 842
 - thyroid imaging 566
- breast imaging 592–657
 - mammography *see* mammography
 - MRI 639–647
 - breast masses 641–642
 - clinical role 639
 - enhancement kinetics 640
 - focus 642
 - indications 645–647
 - interpretation 644
 - non-masslike enhancement 643–644
 - technique 639
 - post-surgical 647–650
 - implants 647–649
 - reduction mammoplasty 650
 - ultrasound 617–621
 - architectural distortion 637
 - asymmetries 636, 637
 - BI-RADS 3 620–621
 - BI-RADS lexicon 619–620
 - breast masses 622–637

breast imaging (cont.) cystic lesions 629–630 spiculated masses 631–633 technique 618 zonal anatomy and pathology 617–618	Budd–Chiari syndrome 89, 99 Buerger disease 732 hand 738 Buford complex 449 bulla 19 bunch of grapes sign 801 burnt-out germ cell tumor 494 burst fracture 437 butterfly glioma 219	ischemic 678–679 restrictive 688
breast implants 647–649 saline implant rupture 648 silicone implant rupture extracapsular 649 intracapsular 648	CADASIL 275 Caesarean section, complications 513 calcaneal fracture 405 stress 405 calcifications 363 abdominal 790 adrenal 165 breast 607–613 pericardial 690	cardiovascular imaging 658–693 aorta 659–672 coronary CT angiography 673–678 MRI <i>see</i> cardiovascular MRI non-ischemic disease 686–689 pediatric 760–769 anatomy 761 congenital heart disease <i>see</i> heart disease, congenital plain film 760 tumors 769 pericardial disease 689–691 plain film 681–685, 760 <i>see also</i> nuclear cardiology
breast masses axillary 633 fat-containing 623–624 fatty 622 imaging mammography 603–606 MRI 641–642 ultrasound 622, 637 malignant <i>see</i> breast cancer management 644 multiple skin masses 628 multiple solid 628 post-lumpectomy/post-excisional biopsy 632 radial scar 632 solid 625–626 spiculated 631–633	calcium hydroxyapatite deposition disease (HADD) 356 calcium pyrophosphate dihydrate deposition disease (CPPD) 357 calyceal diverticulum 179 cancer breast <i>see</i> breast cancer lung 34–42 radiation-induced 855 <i>see also</i> tumors	cardiovascular MRI 678–680 contrast-enhanced 678 delayed contrast-enhanced 678 circumferential subendocardial 680 ischemic 678–679 mid-myocardial 679 non-ischemic 679–680 subendocardial 678 subepicardial 680 transmural 679
breast reduction 650 breast screening mammography 597–599 MRI 645	Candida albicans 473 Candida glabrata 473 candidiasis esophageal 124 liver 92, 473	Caroli disease 102, 786 carotid artery 500–501 carotid body tumor 313 carotid space 324 carotid-basilar connections, persistent 250
BReTh Lung mnemonic 82 Brodie abscess 385 bronchial artery, angiography 702 bronchial atresia 754 bronchiectasis 77 diffuse cystic 19 pediatric 758 bronchioalveolar carcinoma 36 mucinous 37 nonmucinous 36 bronchiolitis 756 bronchiolitis obliterans organizing pneumonia (BOOP) 757 syndrome 757	Cannon–Böhm point 709 capillary telangiectasia 259 CAPTain Kangaroo has Mounier–Kuhn mnemonic 78 caput medusa 258–259 carbon monoxide poisoning 282 carcinoid tumor endobronchial 81 lung 37 mesenteric 151 metastatic 587 thymic 70	carotid-cavernous fistula 257 carpal coalition 823 cartilage spaces 363 cartilage-forming lesions 371–375 Castleman disease 72 catecholamine-induced cardiomyopathy 686
bronchogenic carcinoma 18 bronchogenic cyst 126 broncholithiasis 78 bronchopleural fistula 22 bronchopneumonia 21 bronchopulmonary dysplasia (BPD) 751 bronchopulmonary foregut malformation 542 brown tumor 384	cardiac hepatopathy 99 cardiac shunts, left-to-right 45 cardiomegaly 765 cardiomyopathy arrhythmogenic 686 catecholamine-induced (takotsubo) 686 dilated 679, 688–689 hypertrophic 679, 687	caterpillar sign 771 catheters 698 caustic stricture of esophagus 125 cavernous hemangioma 473–474 cavernous lymphangioma 287 cavernous malformation (cavernoma) 258–259 intraparenchymal hemorrhage 270 cavernous sinus 233 thrombosis 315 cavum septum pellucidum, absence of 540, 541 celiac artery 704 celiac axis 703 celiac disease 142

- cellulitis, orbital 315
- central nervous system
 - lymphoma 209, 226–227, 238
 - immunocompetent patient 226
 - immunocompromised patient 227
 - metastatic disease 211, 227, 238, 242
 - neuroimaging 201–345
 - vascular malformations 257–259
 - see also* brain; spine
- central sulcus 246
- centrilobular emphysema 79
- centrilobular nodules 14
- cephalocele 539
- cerebellar tonsillar herniation 205
- cerebellopontine angle mass 230–232
- cerebral amyloid angiopathy 268
- cerebral contusion 211
- cerebral edema 203–203
 - cytotoxic 203
 - interstitial 203
 - vasogenic 203
- cerebral perfusion 588
- cerebrospinal fluid 203
- cerebrovascular imaging 588–589
 - clinical applications 588–589
 - radiotracers 588
- cervical lymph nodes 326–327
- cervix 195, 507
 - carcinoma 195
 - late pregnancy 532
- Chagas disease, cardiac
 - involvement 679, 680
- Chance fracture 434
- Charcot joint 361
- CHARGE syndrome 743
- chemotherapy, white matter
 - disease 276
- Chiari I malformation 830
- Chiari II malformation 539, 831
- child abuse 808
- children *see* pediatric imaging
- choanal atresia 743
- cholangiocarcinoma 106, 471
- cholangiography 722–724
 - percutaneous transhepatic 722–723
- cholangitis
 - AIDS 105
 - ascending 104
 - primary sclerosing 104
 - recurrent pyogenic 105
 - sclerosing 723
- cholecystitis 465–467
 - acalculous 466
 - acute 103, 573, 724
 - acute calculous 466
 - chronic 573
 - emphysematous 103, 466
 - nuclear imaging 573
- cholecystoses, hyperplastic 467–468
- choledochal cysts 101–102
 - pediatric 786
- choledocholithiasis 470
- cholelithiasis 465
- cholestatic jaundice, neonatal 784
- cholesteatoma 303, 305–306
 - petrous 309
- cholesterol granuloma/cyst 304, 309
- chondroblastoma 374
 - vertebral body 334
- chondrodysplasia punctata 811
- chondroma, endobronchial 82
- chondromyxoid fibroma 374
- chondrosarcoma 489
 - clival 311
 - petrous apex 310
 - vertebral body 334
- Chopart fracture–dislocation 404
- chordoma 381
 - clival 311
 - petrous apex 310
 - vertebral body 334
- choroid plexus
 - cells 216
 - cyst 541
 - papilloma/carcinoma 224
- chronic allergic fungal sinusitis 293
- chronic thromboembolic pulmonary
 - hypertension 45
- Churg–Strauss vasculitis 57
- chylothorax 85
- circle of Willis 247–248
- cirrhosis
 - hepatic 93, 472, 710
 - primary biliary 104
- clay-shoveler’s fracture 437
- clear cell sarcoma 796
- cleidocranial dysostosis 810
- clivus 311
 - chondrosarcoma 311
 - metastatic disease 311
- cloaca 385
- cloverleaf skull 547
- CNS *see* central nervous system
- coal worker’s pneumoconiosis 56
- Coat disease 321
- Coccidioides immitis* 26
- cochlear dysplasia 307
- Cognard classification 257
- colic arteries
 - left 706
 - middle 706
 - right 706
- Colles fracture 456
- coloboma 322
- colon
 - atresia 779
 - cancer, PET-CT 557
 - functional immaturity 780
- colpocephaly 540
- common carotid arteries 659
- common channel syndrome 112
- community-acquired pneumonia 21
- complex regional pain syndrome 581
- Compton scatter 846
- computed tomography *see* CT
- concentric (Balo) sclerosis 274
- concha bullosa 292
- congenital anomalies
 - brain 825–829
 - heart *see* heart disease,
 - congenital
 - pancreas 111–112
 - spine 340–341
 - spleen 116
 - see also individual anomalies*
- congenital lobar emphysema 754
- congenital pulmonary airway
 - malformation 542, 755
- Conn syndrome 160
- connective tissue disorders, joint
 - involvement 356
- consolidation 9
 - differential diagnosis 11
 - peripheral 11
 - radiologic presentation 38
- contrast media
 - gadolinium-based 842–843
 - iodinated 840–842
 - treatment of reactions 839
- coracoacromial arch 441–442
- corduroy lesion 220
- corkscrew esophagus 128
- coronary arteries
 - anatomy 674–676
 - dominance 676
 - left anterior descending 675
 - left circumflex 675
 - left main 675
 - origination 674
 - right 675
 - structural anomalies 676–678
 - ALCAPA 677
 - benign 676
 - malignant 677
 - myocardial bridging 678

- corpus callosum, agenesis/hypogenesis 540, 827
- corpus luteal cyst 515
- cortical contusion 244
- cortical necrosis 178
- Couinaud classification 88–89
- Courvoisier gallbladder 467
- craniopharyngioma 235
- crazy paving 13, 13, 27
- Creutzfeldt–Jakob disease 281
- cribriform plate, dehiscent 291
- CRITOE mnemonic 804
- Crohn disease 131
 - enteritis 140–141
 - esophagitis 124
 - pediatric 782
 - small bowel obstruction 139
 - tracheal stenosis 77
- Cronkhite–Canada syndrome 132
- crossed cerebellar diaschisis 589
- croup 744
- crown–rump length 530
- Cryptococcus neoformans* 28, 278
- cryptogenic organizing pneumonia 51
 - pediatric 757
- crystal deposition arthropathies 356–358
- CT
 - adrenal gland 162
 - dosimetry 852
 - liver 89
 - parenchymal hemorrhage 266
 - physics 851
 - small bowel obstruction 136
 - stroke 252–256
- CT angiography 673–678
 - coronary arteries 674–676
 - ECG gating and radiation dose 673
 - freezing of cardiac motion 673
 - grading of stenosis 673
 - ischemic heart disease 673
 - spatial resolution 673
 - temporal resolution 673
- CT severity index 114
- CT urography 180
- currant jelly stool 774
- Cushing disease 160
- Cushing syndrome 160
- cystadenoma, biliary 105
- cystic adventitial disease 732
- cystic fibrosis
 - bronchiectasis 78
 - pancreatic manifestations 112
- cystic hygroma 287
- cystic lung disease 19
- cystic metastasis 286
- cystic renal cell carcinoma 171, 489
- cystography, radionuclide 584
- cysts
 - adrenal 163
 - arachnoid 231
 - Baker’s 425
 - bone 334, 382, 382
 - branchial cleft 286, 286
 - breast 629–630
 - oil cyst 622
 - bronchogenic 126
 - cholechoal 101–102, 786
 - cholesterol 304, 309
 - choroid plexus 541
 - corpus luteum 515
 - dermoid *see* dermoid cyst
 - echinococcal
 - liver 473
 - spleen 119
 - epidermoid *see* epidermoid cyst
 - epididymal 496
 - esophageal duplication 126
 - foregut duplication 73, 74
 - meniscal 415
 - mucous retention 292
 - Müllerian duct 801
 - neurenteric 126
 - ovarian 515
 - paralabral 453
 - paraovarian 516
 - pericardial 72
 - peritoneal occlusion 517
 - pineal 241
 - Rathke’s cleft 234, 236
 - renal 171–172, 488–489
 - cortical 488
 - hemorrhagic 171
 - pediatric 794
 - sinus 489
 - spleen 118
 - testis 496
 - theca-lutein 515
 - thymic 70
 - thyroglossal duct 285
 - tunical 496
- cytomegalovirus
 - encephalitis 280
 - esophagitis 124
- Damus–Kaye–Stansel procedure 762
- Dandy Walker malformation 539, 831
- Dawson fingers 273
- de Quervain thyroiditis 505
 - nuclear imaging 568
- death by radiation 854
- decibel 859
- deep venous thrombosis 502–503
- dementia 588–589
- demyelinating disease 211
 - spine 330
- dermatomyositis *see* polymyositis/
dermatomyositis
- dermoid cyst
 - adnexal 197
 - floor of mouth 285
 - intradural-extramedullary 331
 - ovary 518, 801
 - suprasellar 237
- descending thoracic aortic aneurysm 73
- desmoid tumor 151
- desquamative interstitial pneumonia 53
- developmental venous anomaly 259
- Devic disease 274
- diabetic mastopathy 597
- dialysis access 736–737
- diaphragmatic hernia, congenital 542, 753
- diastematomyelia 341
- didelphys uterus 509
- diethylstilbestrol uterus 509
- diffuse axonal injury 244
- diffuse idiopathic skeletal hyperostosis (DISH) 338, 350
- diffuse lung disease 48–64
 - antigen and exposure-related 56
 - eosinophilic 57
 - iatrogenic 59
 - idiopathic interstitial pneumonias 48–55
 - pulmonary vasculitis 57–58
 - systemic disease-related 60–62
- diffusion weighted imaging 207
- dilated cardiomyopathy 679, 688–689
- dipyridamole stress test 562
- discitis 333
 - pyogenic 339
- dislocations
 - biceps tendon 448
 - elbow/forearm 455
 - glenohumeral 438–440
 - hand 362
 - interfacetal 437
 - knee 411
 - lunate/perilunate 458
- diverticulum
 - bleeding 712
 - calyceal 179

- Killian–Jamieson 129
- of Kommerel 660
- Meckel 572
- urethral 188
- Zenker 129
- DNA, radiation-induced damage 854
- dobutamine stress test 562
- dosimetry 852
- double bubble sign 112, 773, 777
- double density sign 579
- double line sign 431
- Down syndrome 549
- Dressler syndrome 683
- duodenal atresia 543, 777
- duplex collecting system 792
- dural arterio-venous fistula 257, 340
 - intraparenchymal hemorrhage 269
- dural sinuses 264
- dural tail 212
- dural tumors 228
 - metastatic 82
- ear
 - external 303
 - congenital malformations 303
 - exostosis 303
 - malignancy 303
 - inner 307–308
 - middle 303–306
- Ebstein anomaly 765
- echinococcal cyst
 - liver 473
 - spleen 119
- echinococcal disease 92
- ectopic pregnancy 522–524
- edema
 - bone marrow 432
 - cerebral *see* cerebral edema
 - mesenteric 150
 - pulmonary *see* pulmonary edema
- eggshell calcification 71
- Eisenmenger syndrome 763
- elbow/forearm 455–456
 - dislocation 455
 - elbow effusion 805
 - little league elbow 822
 - rheumatoid arthritis 352
- embolization 698
 - non-target 698
 - post-embolization syndrome 698
 - uterine artery 730
- embryonal sarcoma,
 - undifferentiated 788
- embryonal tumors 220–221
- emphysema 19, 79–80
 - centrilobular 79
 - congenital lobar 754
 - panacinar (panlobular) 80
 - paraseptal 79
 - pulmonary interstitial 751
- emphysematous cholecystitis 103, 466
- emphysematous pyelonephritis 174, 489
- empty delta sign 265
- empty gallbladder sign 93
- empyema 22
- encephalitis 213
 - cytomegalovirus 280
 - herpes-related 280
 - HIV/AIDS 280
- enchondroma 372–373
- enchondromatosis 811
- endobronchial carcinoid 81
- endobronchial metastasis 82
- endocardial cushion defect 764
- endocarditis 683
- endometrial carcinoma 194
- endometrial fluid 513
- endometriosis 197, 512
- endometrium 509–511
 - cancer 511
 - cyclical thickness 510
 - ectopic 512
 - polyp 511
 - postmenopausal changes 511
 - tamoxifen effect 511
- endotracheal tubes 32
- enlarged vestibular aqueduct syndrome 307
- enostosis 367
- enteritis 140–143
- eosinophilic gastritis 131
- eosinophilic granuloma 379
- eosinophilic lung disease 57
- eosinophilic pneumonia 57
- ependymal cells 216
- ependymitis, infectious 209
- ependymoma 220
 - intramedullary 330
 - myxopapillary 332
- epicardial fat pad 72
- epidermoid cyst
 - cerebellopontine angle 232
 - floor of mouth 285
 - intradural–extramedullary 331
 - suprasellar 237
 - testis 494–495
- epididymal cyst 496
- epididymitis 498
- epididymo-orchitis 498
- epidural hematoma 243
- epidural lipomatosis 334
- epidural metastasis 333
- epiglottitis 744
- epithelioid hemangioendothelioma 95
- erosions 364
- esophagitis 124
- esophagus/esophageal 123–130
 - anatomy 123
 - atresia 543, 775
 - cancer 74, 127
 - PET-CT 559
 - candidiasis 124
 - diverticula 129
 - duplication cyst 126
 - feline 129
 - foreign body 126
 - hernia 130
 - masses
 - benign 126
 - evaluation 125
 - malignant 127
 - motility disorders 128
 - strictures 125
 - varices 126
 - web 123
- Essex–Lopresti fracture–dislocation 455
- esthesioneuroblastoma 301
- Ewing sarcoma 379, 815
 - nuclear imaging 579
- extra-axial lesions 205
 - hemorrhage 243
- extracalyceal contrast medium 179
- extracardiac shunt 762
- facet arthropathy 338
- facial fractures 245
- facial nerve, schwannoma 304
- Fairbank disease 811
- fallen-fragment sign 366
- fallopian tube, dilated 517
- fat pad sign 455, 805
- fatty filum 341
- fatty lesions of bone 381
- fatty liver 90
- FDG 554
 - normal distribution 555
 - nuclear imaging 562
- feline esophagus 129
- femoral artery 707
 - angiographic access 696
- femoral head fracture–dislocation 428
- femoral neck fracture 428–429

femoroacetabular impingement 433–434 cam-type 433 mixed type 434 pincer-type 434	tendons 407–410	galaxy sign 15
femoropopliteal disease 731	forefoot 401–404	Galeazzi fracture–dislocation 456
fetus/fetal	midfoot/hindfoot trauma 404–406	gallbladder 724
abdomen 543–544	osteoarthritis 348	cancer 468
abdominal diameter 531	rheumatoid arthritis 351	carcinoma 106
ascites 536	football sign 770	Courvoisier 467
biparietal diameter 531	foramen rotundum 299	hydrops 786
bowel obstruction 543	foramen of Winslow hernia 138	imaging patterns 469
brain and spine 538–541	foregut duplication cyst 73, 74	infection/inflammation 103
femur length 531	foreign body	metastases 106
genitourinary tract 545–546	aspirated 744	perforation 103
heart rate 519–520	esophagus 126	polyps 468
heartbeat 519–520	Fournier gangrene 498	porcelain 103, 467
hydronephrosis 545	fracture-dislocations	strawberry 467
hydrops 536	Chopart 404	ultrasound 465–471
musculoskeletal imaging 547	Essex–Lopresti 455	gallium-67 585
occipital frontal diameter 531	femoral head 428	gallium–thallium imaging 586
pleural effusion 536	Galeazzi 456	gallstones 465–467
radiation effects/dose 855	Lisfranc 402–404	small bowel obstruction 139
thorax 542–543	Monteggia 456	gamekeeper’s thumb 460
fibrillary astrocytoma 217–218	fractures 399–400	Gamna–Gandy bodies 93, 121
fibroadenolipoma of breast 623	elbow/forearm 455–456	ganglioglioma 223
fibroadenoma of breast 625	facial 245	ganglioneuroma 800
giant 627	foot/ankle	gangrene, pulmonary 22
fibroepithelial polyp 181	ankle 409	gangrenous cholecystitis 103
fibroid 193, 512	forefoot 401–404	gastric atresia 775
fibrolamellar carcinoma 476	midfoot/hindfoot 404–406	gastric bypass surgery 134–135
fibroma	hand/wrist 451	complications 135
cardiac 769	hip 427–429	gastric cancer 133
chondromyxoid 374	insufficiency 580	gastric carcinoma 133
nonossifying 375	nuclear imaging 579	gastrinoma 110
fibromuscular dysplasia 502	pediatric 802–807	gastrogastric fistula 135
fibrosing mediastinitis 46	Salter Harris classification 802–803	gastrointestinal bleeding 571, 711–712
fibrous bone lesions 375–377	stress 579	acute 571
fibrous dysplasia 376–377	<i>see also specific fractures</i>	angiodysplasia 711
Ficat staging system 431	Freiberg’s infraction 401, 822	diverticular 712
finger-in-glove sign 29	fundic gland polyposis syndrome 131	gastrointestinal imaging 87–156
Fisher grade 261	fungal infection	biliary tract 100–106
flat waist sign 6	brain 278	hepatobiliary 572–574
Fleischner sign 47	liver 92	large bowel 144–148
fluid attenuation inversion recovery (FLAIR) 206	lung 26	liver 88–100
fluorine-18-fluorodeoxyglucose <i>see</i> FDG	sinusitis	Meckel diverticulum 572
fluoroscopy 851	acute invasive 293	mesentery and peritoneum 149–153
focal nodular hyperplasia 96, 474	chronic allergic 293	nuclear imaging 570–574
nuclear imaging 570	spleen 119	pancreas 107–116
follicular cyst 515	<i>see also aspergillosis</i>	pediatric 770–790
Fontan procedure 762	fusiform aneurysm 263	anorectal malformations 783
foot/ankle 401–410	gadolinium-based contrast media 842–	bowel obstruction 776–782
ankle	843	congenital gastroesophageal
fractures 409	breast feeding 843	disorders 775
	extravasation 842	emergencies 770–774
	nephrogenic systemic fibrosis 843	hepatobiliary tumors 785
	pregnancy 843	liver masses 786–542
	galactoceles 623–624	neonatal cholestatic jaundice 784
		small bowel 136–143

spleen 116–122	glomus	health care-associated pneumonia 21
stomach 131–135	caroticum 313	heart disease, congenital
gastrointestinal stromal tumor <i>see</i> GIST	jugulare 312	acyanotic 761
gastroschisis 544	jugulotympanicum 313	pulmonary edema 762
Gaucher disease 121, 395	tympanicum 304, 312	shunt vascularity 763–764
genitourinary imaging 157–200	vagale 313	cyanotic 761
adrenal glands 160–165	glucagonoma 110	decreased pulmonary vascularity
bladder 183–185	gluten-sensitive enteropathy 142	with cardiomegaly 765
fetus 545–546	Golden’s S sign 5	decreased pulmonary vascularity
kidney 166–179	gout 358	without cardiomegaly 766
pediatric 791–801	gradient recall echo 208	increased pulmonary
adrenal masses 799–800	graft versus host disease,	vascularity 766–768
benign masses 797	enteritis 143	valvular <i>see</i> valvular heart disease
cystic pelvic masses 801	granulomatous disease 212	heel effect 845
cystic renal lesions 794–795	granulomatous hypophysitis 234	<i>Helicobacter pylori</i> gastritis 131
hydronephrosis and	granulomatous mastitis 596	hemangioblastoma 222
hydroureter 791–793	Graves disease 504	intramedullary 330
renal tumors 795–796, 798	nuclear imaging 567	hemangioma
solic pelvic masses 801	treatment 568–569	bone 378
retroperitoneum 158–159	gray matter heterotopia 827	cardiac 769
ureter 180–182	Grisel syndrome 437	hepatic 97
urethra 186–191	groove pancreatitis 116	infantile 787
germ cell tumors 70–72	ground glass matrix 366	orbit 316
burnt-out 494	ground glass opacification 9, 10	spleen 117
malignant 493	differential diagnosis 11	subglottic 745
nonseminomatous 494	peripheral 11	vertebral body 333
pineal 240	gynecomastia 651	hematocele 495
germinal matrix hemorrhage 549	gyriform enhancement 210	hematologic arthropathies 358–362
germinoma 237, 241	Haller cell 292	hematologic bone disease 396–397
gestational sac 519	halo sign 30	hematoma
gestational trophoblastic disease 525	hamartoma	aortic intramural 663
ghost meniscus sign 415	biliary 99	epidural 243
giant cell arteritis 699	breast 623	femoral arterial 696
giant cell tumor of bone 379	hypothalamic 238	intraparenchymal 244, 267
GIST	mesenchymal 785	scrotal 497
benign 132	spleen 117	subdural 243
malignant 127, 133	hamartomatous polyp 51	hematopoiesis, extramedullary 74
Glenn shunt 762	Hampton’s hump 47	hematopoietic bone lesions
glenohumeral dislocation 438–440	hand/wrist 451–461, 737–738	379–381
anterior 438	arthritis 362–364	hematosalpinx 517
inferior (luxatio erecta) 439–440	Buerger disease 738	hemochromatosis 91, 358
posterior 439	fractures 451	hemophilic arthropathy 359–360
glenohumeral ligament, inferior,	hypothenar hammer 737–738	hemoptysis, bronchial artery
humeral evulsion 450	osteoarthritis 348	embolization 702
bony 450–451	erosive 350	hemorrhage
glenoid labral articular disruption 453	Raynaud disease 738	adrenal 165
glial cells 216	rheumatoid arthritis 351	aneurysmal 269
glial tumor 209	thromboembolic disease 738	brain 214
Glidewire 699	trauma 460–461	intraparenchymal 266–271
glioblastoma multiforme 218	wrist 458–459	intraventricular 243
glioma 211, 219, 242	hangman’s fracture 436	subarachnoid 243, 260–263
optic nerve 319	Hashimoto thyroiditis 504	gastrointestinal 571, 711–712
optic pathway 237	nuclear imaging 567	hemorrhagic cyst 515–516
gliomatosis cerebri 219	head and neck cancer, PET-CT 557	hemorrhagic neoplasm 269
globe of eye 321–322		hemosiderosis 91

hepatic artery 705–706	fractures 427–429	hypothernar hammer 737–738
aneurysm 710	occult stress 430	hypothyroidism 393, 811
left	occult traumatic 430	hypoxemic lung disease 45
accessory 706	labral injury 432	hypoxic ischemic encephalopathy 282
replaced 706	MRI 430–432	
right	osteoarthritis 349	iatrogenic disease
accessory 705	rheumatoid arthritis 351	lung 59
replaced 705	septic arthritis 812	radiation exposure 855, 856
hepatic steatosis 90, 471	Hirschsprung disease 781	idiopathic interstitial pneumonias
hepatic veins 482–483	<i>Histoplasma capsulatum</i> 26	48–55
hepatitis	HIV/AIDS	idiopathic pulmonary fibrosis 20
neonatal 752	cholangitis 105	ileal atresia 779
viral 92, 472	encephalitis 280	ileocolic artery 706
hepatobiliary imaging 572–574	esophagitis 124	iliac arteries
biliary leak 574	nephropathy 490	anastomoses 709
hepatic dysfunction 574	salivary gland involvement 298	aneurysm 728
HIDA protocol 572	hockey stick sign 281	atherosclerosis 727
radiotracers 572	holoprosencephaly 540, 829	deep circumflex iliac 707
tumors 756–785	hospital-acquired pneumonia 21	external 707
hepatoblastoma 788	hot-nose sign 588	internal 707
hepatocellular carcinoma 94, 476	hot-potato voice 284	iliotibial band syndrome 420
fibrolamellar 94	“hot-tub” lung 26	immune hydrops 536
pediatric 788	Hounsfield units 851	immunocompromised patients
PET-CT 559	Hunt and Hess score 261	pneumonia 21
whole-body imaging 586	Hunter’s angle 208	pulmonary infection 27–30
hernia	Hurler’s syndrome 811	impingement syndrome 441–442
diaphragmatic 542, 753	Hutchinson (chauffeur’s) fracture 456	indium-111 oxine leukocytes 586
foramen of Winslow 138	hyaline membrane disease 751	indium-111 pentetate 584–585
hiatal 73, 130	hydatid disease 119, 473	infantile hemangioma 787
inguinal 138, 782	hydatidiform mole 525	infarction
Morgagni 72	hydranencephaly 541	cerebral <i>see</i> stroke, infarction
obturator 138	hydrocele 495	spinal 340
paraduodenal 138	hydrocephalus 205, 214	
paraesophageal 130	hydronephrosis 486–487, 791–793, 794	infection
post-gastric bypass 135	fetal 545	brain 277–281
transmesenteric 138	hydrosalpinx 517	breast 596–597
ventral 138	hydroureter 791–793	gallbladder 103
herniation, cerebral 204–205, 216	hyperdense artery sign 253	kidney 173–176
cerebellar tonsillar 205	hyperechoic small bowel 544	liver 92, 472–473
subfalcine 204	hyperparathyroidism 392	lung 21–26
transtentorial (uncal) 204	hyperphosphatasia, hereditary 395	musculoskeletal 385–390
herpes encephalitis 210, 280	hypersensitivity pneumonitis 14, 56	neck 283–284
herpes esophagitis 124	hypertension, portal 477–480	orbit 315
heterotopic pregnancy 523	hypertensive hemorrhage 268	scrotum 498
Heubner’s recurrent artery 248	hyperthyroidism 393	spleen 119
hiatal hernia 73, 130	hypertrophic cardiomyopathy 679, 687	ureter 181
hilar mass 38	hypertrophic pulmonary	uterus 513
Hill–Sachs lesion 439, 450	osteopathopathy 580	<i>see also specific infections</i>
hilum overlay sign 68	hyperplastic polyp 131	infectious enteritis 143
hindfoot (tarsal) coalition 406	hypoglycemia, cerebral	inferior epigastric artery 707
hip 425–434	involvement 282	inferior mesenteric artery 706
anatomy 425–426	hypoparathyroidism 393	inferior orbital fissure 299
developmental dysplasia 821	hypopharynx 123	inferior pancreaticoduodenal
femoroacetabular	hypoplastic left heart 762	artery 706, 708
impingement 433–434	hypothalamic hamartoma 238	inferior vena cava, filter
		placement 720–721

- 875

lacrimonal gland lesion 317	little league elbow 822	unilateral hyperlucent 758
lactational adenoma 627	liver	<i>see also entries under pulmonary</i>
Ladd procedure 773	Doppler ultrasound 477–483	lung cancer 34–42
Lady Windermere syndrome 26	hepatic veins 482–483	clinical overview 34
lamina papyracea, dehiscent 291	portal veins 477–481	histologic subtypes 35
Langerhans’ cell histiocytosis 379	imaging patterns 476	PET-CT 556
osseous 816	nuclear imaging 570	radiologic presentation 38–40
petrous apex 309	ultrasound 471–476	solitary pulmonary nodule 34
pulmonary 16, 19, 62	<i>see also entries under hepatic</i>	staging 40–42
large airway disease 77–78	liver disease 88–100	lung disease 8–20
large bowel 144–148	abscess 89	abscess 22
obstruction <i>see</i> intestinal obstruction	anatomy 88–89	cavitary 18–19
large cell lung carcinoma 37	cerebral involvement 282	cystic 19
laryngocele 289	cirrhosis 93, 472, 710	diffuse <i>see</i> diffuse lung disease
laryngotracheobronchitis 744	congenital cystic disease 99,	iatrogenic 59
larynx/laryngeal 288–289	785–756	infection <i>see</i> pulmonary infection
anatomy 288	diffuse metabolic parenchymal	nuclear imaging 575–577
atresia 543	471–472	radiotracers 575
cancer 289	fatty 90	VQ scanning 575–576
lesions of 289	imaging	<i>see also specific diseases</i>
papillomatosis 745	CT 89	Lyme disease 278
trauma 289	MRI 89	lymph nodes
lasix renogram 584	infections 92, 472–473	cervical 326–327
Le Fort fractures 245	iron overload 91	intramammary 624
left superior intercostal vein 67	metabolic disorders 90–91	lymphadenopathy, mediastinal 72
Legg–Calvé–Perthes disease 814, 822	nuclear imaging 574	lymphangioma
leiomyoma 193, 512	trauma 100	orbit 317
leiomyosarcoma 512	tumors	spleen 118
Lemierre syndrome 284	benign 96–98, 473–474	lymphangitic carcinomatosis 12
lemon sign 539	malignant 93–95, 475–476	radiologic presentation 39
leptomeningeal carcinomatosis 213	metastatic 95, 475, 788	lymphatic malformations of neck 287
leptomeningeal (pia-arachnoid)	pediatric 786–542	lymphocytic hypophysitis 234
enhancement 213	vascular 99	lymphoid interstitial pneumonia 19, 54
Leriche syndrome 727	<i>see also individual conditions</i>	lymphoma 71
leukemia, osseous changes 819	lobal emphysema, congenital 754	adrenal 165
leukoplakia, ureter 181	lobal pneumonia 21	bone 381
Lhermitte–Duclos gangliocytoma 220	lobar atelectasis 3–7	breast 634
ligamentum flavum, infolding/	radiologic presentation 38	CNS 209, 226–227
hypertrophy 337	lobster claw sign 176	parasellar 238
lightbulb sign 439	lobular pneumonia 21	esophageal 127
limp in children 812–814	Löffler syndrome 57	gastric 133
linear attenuation coefficient 847	low-grade astrocytoma 217	liver 95, 476
lingual thyroid 287	lower extremity angiography 726–732	mesenteric 152
lipoma	anatomy 726–727	orbital 316
arborescens 425	distal aorta, iliac, pelvic and leg	pancreas 484
bone 381	arteries 727–730	PET-CT 558
breast 622	non-atherosclerotic arterial	renal 169, 488
gastric 132	disease 732	splenic 120
hepatic 474	thrombotic and atherosclerotic	trachea 82
quadrigeminal plate 242	disease 731–732	
liposarcoma	Ludwig angina 283	
bone 381	<i>luftsichel</i> (air-sickle) sign 5	McCune–Albright syndrome 338
retroperitoneal 159	lunate/perilunate dislocation 458	macroadenoma, pituitary 234
Lisfranc fracture–dislocation 402–404	lung	Madelung deformity 822
lissencephaly 826	anatomy 8	Maffucci syndrome 373, 811

MAGIC DR mnemonic 211	medial collateral ligament 420	liver 95
magic-angle phenomenon 444	median arcuate ligament syndrome 716	mesenteric 152
magnetic resonance	mediastinal mass	pleura 83
cholangiopancreatography (MRCP) 100	anterior	renal 796
magnetic resonance imaging <i>see</i> MRI	precardiac 72	spleen 120
main-en-lorgnette deformity 355	prevascular 69–72	metatarsal fractures
Maisonneuve fracture 409	middle 72–73	fifth 401
malacoplakia of ureter 181	pediatric 759	stress 402
malignant fibrous histiocytoma 375	posterior 73–74	metformin, and iodinated contrast
mallet finger 460	radiographic localization 68	media 841
malrotation 772–773, 781	mediastinum 65–74	methanol poisoning 282
mammography 597–616	anatomy 65–67	Michel aplasia 307
BI-RADS 3 616	medication esophagitis 124	microadenoma, pituitary 234
BI-RADS assessment categories 601	medullablastoma 221	microangiopathy 275
breast compression 849	medullary sponge kidney 179	microcolon 778–781
breast masses 603–606	megacystis microcolon intestinal hypoperistalsis syndrome 781	microscopic polyangiitis 58
calcifications 607–613	melorheostosis 367	midbrain malformations 835
diagnostic 599	Menetrier disease 131	middle cerebral artery 249
digital 850	meningeal neoplasm 212	miliary nodules 16
fibroglandular density 602	meningioma 228, 231, 236, 242	miliary tuberculosis 25
interpretation 599–600	intradural-extramedullary 331	Milwaukee shoulder 356
magnification 850	intraventricular 224	Mirizzi syndrome 470
physics 849–850	olfactory groove 300	“misty” mesentery 150
average glandular dose 850	optic nerve 320	mitral valve
X-ray generator and filters 849	meningitis 210, 213	annular calcification 685
quality control 850	meningocele, lateral 74	regurgitation 685
report 600	mesenchymal hamartoma 785	stenosis 685
screening 597–599	mesenchymal tumor of esophagus 126	mixed epithelial and stromal tumor 171
skin thickening 602–603	mesentery/mesenteric 149–153	molar tooth sign 184–185, 835
workup and problem solving 614–616	anatomy 149	Mondini deformity 307
mandible, cystic lesions 286–287	edema 150	Mondor disease 597
Marchiafava–Bignami disease 274	inflammation 150	Monod sign 29
marching cleft sign 415	ischemia 710–711	Monteggia fracture–dislocation 456
marginal artery of Drummond 706, 709	acute 710	Morgagni hernia 72
Marmor–Lynn fracture 409	chronic 710–711	Morquio syndrome 811
masticator space 323	“misty” 150	moyamoya disease 270
mastitis 596	neoplastic infiltration 150	MR spectroscopy, neuroimaging 208
granulomatous 596	tumors 151–152	MRI
periductal 596	vasculopathy 709–710	adrenal gland 161
mastocytosis 397	mesoblastic nephroma 797	breast 639–647
mature cystic teratoma 197	mesothelioma 83	cardiovascular 678–680
May–Thürner syndrome 717	metabolic arthropathies 358–362	cervix 195
Mazabraud syndrome 338	metabolic bone disease 819	focal heating and thermal injuries 857
Meckel diverticulum 572	metanephric blastema 798	hip 430–432
pediatric 789	metastases	liver 89
Meckel–Gruber syndrome 549	adrenal 165	neuroimaging 206–209
meconium 544	bone 383	apparent diffusion coefficient 207
aspiration 752, 790	brain 211, 227, 238	diffusion weighted imaging 207
peritonitis 790	CNS 211, 227, 238, 242	FLAIR 206
meconium ileus 779, 790	endobronchial 82	gradient recall echo 208
meconium ileus-equivalent syndrome 790	esophagus 127	spin-echo protein density 207
meconium plug syndrome 780, 790	gallbladder 106	spin-echo T1 206
	gastric 133	spin-echo T2 206

MRI (cont.)	arthritis 820	cortical 178, 492
parenchymal hemorrhage 266	bone tumors 815	medullary 177, 492
physics 856–858	child abuse 808	nephrogenic systemic fibrosis 843
fringe field 856	fractures 802–807	nephrogram, delayed (prolonged) 177
noise 856	limp 812–814	nephrolithiasis 176
quenching 856	lytic bone lesions 816–819	nephropathy
signal to noise ratio 857	metabolic bone disease 819	contrast-induced 841
specific absorption ratio 856	mucopolysaccharidoses 811	HIV/AIDS 490
T1 and T2 857–858	osteochondroses 822	nerve-sheath tumors <i>see</i> neurofibroma;
pregnancy 856	periosteal reaction 824	schwannoma
prostate 189–191	physiology 802	neurenteric cyst 126
stroke 253	skeletal dysplasias 809–811	neuroblastoma 799–800
tendons 400	TORCH infections 820	neurocysticercosis 278
uterus and adnexa 192–198,	musculoskeletal infection 385–390	neurocytoma, central 223
197–198	mycobacteria, atypical 26	neuroendocrine tumor 587
mucinous cystic neoplasm 109	mycotic (infectious) aneurysm 263	neurofibroma
mucocoele 294	myelofibrosis 397	intradural-extramedullary 331
mucoepidermoid carcinoma	myelolipoma, adrenal 163	orbit 317
salivary gland 297	myelomeningocele 539	neurofibromatosis 628
tracheobronchial 82	myocardial bridging 678	renal artery stenosis 713
mucopolysaccharidoses 811	myocardial infarction 683	type 1 832–833
mucous retention cyst 292	myocardial noncompaction 687	type 2 833
Mueller–Weiss disease 404	myocarditis 680	neurogenic thoracic outlet
Müllerian duct cyst 801	myometrium 512	syndrome 734
multicentric reticulohistiocytosis 359	myositis ossificans 383	neurogenic tumor 73
multicystic dysplastic kidney 546, 794	myxoid degeneration 400	neuromyelitis optica 274
multilocular cystic nephroma 171,	knee 413	neuropathic arthropathy 361
794, 798	myxopapillary ependymoma 332	nipple, accessory 638
multiple epiphyseal dysplasia 811	nasal rhabdomyosarcoma 743	nitrogen-13 ammonia 562
multiple hereditary exostoses 371, 811	nasopharynx 123	nodular subcortical enhancement 210
multiple myeloma	navicular osteonecrosis 404	non-lymphomatous adenopathy 71
bone 380	neck	non-target embolization 698
pleural involvement 83	anatomy 283	non-ossifying fibroma 375
multiple sclerosis 209, 272–273	cystic lesions 285–287	non-seminomatous germ cell
Marburg variant 274	floor of mouth 285	tumor 494
Murphy’s sign 466	mandible 286–287	non-specific interstitial pneumonitis 50
musculoskeletal imaging 346–463	solitary parotid region 286	notochordal lesions 381
clinical applications 577–581	fascial spaces 323–325	nuchal translucency 530
avascular necrosis 580	infection 283–284	nuclear cardiology 560–565
bone tumors 579	inflammatory 283–284	clinical overview 560–561
complex regional pain	lymph nodes 326–327	image interpretation 563–564
syndrome 581	necrotizing enterocolitis 770	imaging protocols 563
fracture 579	necrotizing fasciitis 390	radionuclides 561–562
hypertrophic pulmonary	neonate	sample cases 565
osteoarthropathy 580	adrenal hemorrhage 800	stress testing 562
insufficiency fracture 580	bilious emesis 772	nuclear imaging 553–591
osteomyelitis and infection 580	bowel obstruction 776–782	cerebrovascular 588–589
Paget disease 581	brain imaging 549	gastrointestinal tract 570–574
prosthesis evaluation 580	cholestatic jaundice 784	kidney 582–584
shin splints 579–580	hepatitis 784	musculoskeletal 577–581
stress fracture 579	respiratory distress 750–752	PET-CT 554–559
superscan 578	<i>see also</i> pediatric imaging	physics 861–863
nuclear imaging 577–581	nephroblastomatosis 797	activity 863
radiotracers 577	nephrocalcinosis	alpha decay 862
pediatric 802–824		beta minus decay 862

- beta plus decay 862
- cumulative activity 863
- decay and stability 861
- definitions 861
- effective half life 863
- electron capture 862
- quality control 863
- system resolution 863
- pulmonary 575–577
- thyroid 566–569
- whole-body 584–587
- nutcracker esophagus 128
- nutcracker syndrome 717
- obesity, pancreatic manifestations 112
- obturator hernia 138
- occipital frontal diameter 531
- occupational exposure to
 radiation 855, 856
- ochronosis 359
- Octreoscan 584–585, 585
- odontoid fracture 436
- oil cyst of breast 622
- olfactory groove meningioma 300
- oligodendrocytes 216
- oligodendroglioma 219
- oligohydramnios 532, 537
- Ollier syndrome 373, 811
- omental caking 152
- omphalocele 544
- oncocytoma 714
 renal 169, 487
- oncotic aneurysm 263
- Onodi cell 292
- optic nerve
 glioma 319
- meningioma 320
- optic neuritis 320
- optic pathway glioma 237
- orbit 314–322
 abscess 315
- anatomy 314
- cellulitis/phlegmon 315
- conal pathology 318
- congenital anomalies 322
- extraconal masses 316–317
- globe 321–322
- infection 315
- intraconal masses 319
- metastatic disease 317
- pseudotumor 318
- sinusitis complications 292
- oreo cookie sign 690
- oriental cholangiohepatitis 105
- oropharynx 123
- os acromiale 442
- Osgood–Schlatter disease 422, 822
- osmotic demyelination 274
- osteitis 385
- osteoarthritis 347
 erosive 350
- foot 348
- hand 348
- hip 349
- knee 348
- sacroiliac joint 350
- shoulder 348
- osteoblastoma 369
- osteochondroma 373
- osteochondromatosis 371, 811
- osteochondrosis dissecans 423
- osteoclastoma 379
- osteogenesis imperfecta 547, 810
- osteoma 367
 osteoid 334, 368
- nuclear imaging 579
- osteomalacia 391
- osteomyelitis 384, 385–389
 chronic 387–389
- chronic recurrent multifocal 818
- contiguous focus 386–387
- hematogenous 385–386
- nuclear imaging 580
- pediatric 817
- sickle cell 396
- spine 333, 818
- subacute 387
- tuberculous 339
- vertebral disc 339
- whole-body imaging 586
- osteopetrosis 395
- osteophytosis 362–363
- osteoporosis 390
- osteosarcoma 334, 369–370, 815
 nuclear imaging 579
- otitis externa 303
 necrotizing/malignant 303
- otospongiosis (otosclerosis) 307–308
- ovary/ovarian 514–518
 anatomy/physiology 514
- cysts 515
- dermoid 518, 801
- hyperstimulation syndrome 516
- tumors 198, 518, 518
- pachymeningeal (dural)
 enhancement 212
- Page kidney 179
- Paget disease
 of bone 394–395
- juvenile 395
- nuclear imaging 581
- of nipple 595
- Paget–Schroetter syndrome 735
- panacinar (panlobular) emphysema 80
- Pancoast tumor 39
- pancreas 107–116, 483–484
 annular 112
- congenital anomalies 111–112
- systemic disease affecting 112
- tumors 107–110, 484
 cystic epithelial 109–110
- endocrine 110
- solid epithelial 108
- pancreas divisum 111
- pancreatic rest, ectopic 132
- pancreaticobiliary maljunction 112
- pancreatitis 113–116, 483
 acute 114
- autoimmune 115–116
- chronic 115
- groove 116
- panda sign 585
- Panner disease 822
- papillary necrosis 176, 179
- papilloma, endobronchial 82
- paraduodenal hernia 138
- paraesophageal hernia 130
- paragangliomas 312–313
- paralabral cyst 453
- paranasal sinuses 290–294
 air cells 292
- anatomy 290–291
- sinonasal disease 292–294
- paraovarian cyst 516
- parapharyngeal space 325
- paraseptal emphysema 79
- parasitic infection, brain 278–279
- paraspinal abscess 74
- paraspinal lines 67
- parathyroid disease 506
 adenoma 506, 569
- hyperplasia 506
- nuclear imaging 569
- paratracheal stripes 66, 68
- Parinaud syndrome 257
- parotid glands 295
 benign neoplasm 296
- malignant neoplasm 297
- Parsonage–Turner syndrome 454
- patella/patellar
 dislocation 422
- fracture 411
- tendon injury 421
- see also knee

patent ductus arteriosus 764	midbrain malformations 835	photoelectric effect 846
peak systolic velocity 499	normal development 825	phyllodes tumor 627
pediatric imaging 741–837	phakomatoses 832–835	physics of imaging 838–864
airways 742	posterior fossa	contrast media
anatomy 742	malformations 830–831	gadolinium-based 842–843
stridor 744–745	pelvic anatomy 507	iodinated 840–842
upper airway obstruction 743	pelvic apophyseal avulsion injuries 807	treatment of reactions 839
vascular rings/slings 746–749	pencil-in-cup erosion 355	CT 851
cardiac 760–769	pentalogy of Cantrell 544	fluoroscopy 851
anatomy 761	peptic stricture 125	image quality 853
congenital heart disease <i>see</i> heart	Percheron’s artery 248	mammography 849–850
disease, congenital	percutaneous gastrostomy 725	MRI 856–858
plain film 760	percutaneous nephrostomy (PCN) 725	nuclear medicine 861–863
tumors 769	percutaneous transhepatic	radiation exposure 844
chest 750–759	cholangiography (PTC) 722–723	radiography 845–848
congenital structural thoracic	percutaneous transluminal angioplasty	statistics 853
disease 753–756	(PTA) 697	ultrasound 859–860
mediastinal mass 759	pericardium	physis 802
neonatal respiratory distress	calcification 690	pigmented villonodular synovitis 424
750–752	congenital absence 691	Pilon fracture 410
small airways disease 756–758	cyst 72	pineal cyst 241
unilateral hyperlucent lung 758	disease 689–691	pineal mass 240–242
gastrointestinal 770–790	effusion 689–690	pineoblastoma 241
anorectal malformations 783	periductal mastitis 596	pineocytoma 241
bowel obstruction 776–782	perilymphatic nodules 15	pistol-grip deformity 433
congenital gastroesophageal	perimesencephalic subarachnoid	pituitary mass 234–234
disorders 775	hemorrhage 262	placenta 533–535
emergencies 770–774	periosteal bone formation 362–363	abnormalities of thickness 533
hepatobiliary tumors 785	periostitis 385	abruption 534
liver masses 786–542	peritoneum/peritoneal 149–153	accreta 535
genitourinary tract 791–801	anatomy 149	increta 535
adrenal masses 799–800	carcinomatosis 152	percreta 535
benign masses 797	diffuse disease 152–153	previa 534
cystic pelvic masses 801	occlusion cyst 517	single umbilical artery 533
cystic renal lesions 794–795	peritonitis, meconium 790	vasa previa 533
hydronephrosis and	peritonsillar abscess 284	plasmacytoma
hydroureter 791–793	periventricular enhancement 209	bone 380
renal tumors 795–796, 798	perivertebral space 325	pleural involvement 83
solic pelvic masses 801	persistent hyperplastic primary	vertebral body 334
musculoskeletal 802–824	vitreous 322	pleomorphic adenoma
arthritis 820	Perthes lesion 450	parotid gland 296
bone tumors 815	PET rest-stress myocardial	carcinoma 297
child abuse 808	perfusion 563	pleomorphic xanthoastrocytoma 222
fractures 802–807	PET-CT 554–559	pleura 83–85
limp 812–814	CT correlation 555	fibrous tumor 84
lytic bone lesions 816–819	oncologic indications 556–559	malignancy 83–84
metabolic bone disease 819	patient preparation 555	metastases 83
mucopolysaccharidoses 811	technical considerations 554	pleural effusion 84–85
osteochondroses 822	petrous apex 309–310	exudate 84
periosteal reaction 824	petrous apicitis 309	fetus 536
physiology 802	Peutz–Jeghers syndrome 132	radiologic presentation 40
skeletal dysplasias 809–811	phakomatoses 832–835	transudate 84
TORCH infections 820	pheochromocytoma 160, 164	pneumatocele 19, 22
neuroimaging 825–835	extra-adrenal 587	pneumobilia 470
congenital malformations 825–829	iodinated contrast media 841	pneumoconioses 15, 56

<i>Pneumocystis jiroveci</i> hepatic 473 pneumonia 19, 27 pneumomediastinum 759 pneumonia 21–23 clinical classification 21–23 complications 22 cryptogenic organizing 51, 757 idiopathic interstitial 48–55 immunocompromised patients 21 neonatal 752 radiography 21 <i>see also specific types</i> pneumonitis hypersensitivity 14, 56 nonspecific interstitial 50 pneumothorax 40 poisoning carbon monoxide 282 methanol 282 Poland syndrome 638, 758 polyangiitis, microscopic 58 polyarteritis nodosa 709 polycystic kidney disease autosomal dominant 173, 490, 795 autosomal recessive 546, 795 polycystic liver disease, autosomal dominant 99 polycystic ovarian syndrome 516 polyhydramnios 532, 537 polymicrogyria 825 polymyositis/dermatomyositis, joint involvement 356 polyps antrochoanal 293 endometrium 511 esophagus fibrovascular 126 inflammatory 126 fibroepithelial 181 gallbladder 468 gastric 131–132 <i>see also specific types</i> polysplenia syndrome 116 polytetrafluoroethylene (PTFE) graft 736 popcorn appearance 366, 372–373 popcorn calcifications 608 popliteal aneurysm 732 popliteal entrapment syndrome 732 porcelain gallbladder 103, 467 portal hypertension 477–480, 718–719 portal veins 477–481 thrombosis 480–481 portal venous gas 481 portosystemic gradient 718	post-embolization syndrome 698 post-transplant lymphoproliferative disorder 476, 491 posterior cruciate ligament 419 posterior fossa malformations 830–831 masses 229 posterior longitudinal ligament, ossification 338 posterior reversible encephalopathy syndrome 210, 274 posterior urethral valves 546 pregnancy contrast media gadolinium-based 843 iodinated 842 dating 520 early prognosis 521 ectopic 522–524 first trimester 519–530 evaluation of embryo 530 imaging 519–520 heterotopic 523 MRI 856 multiple gestation <i>see</i> twin pregnancy placentation 526–528 pulmonary embolism 575–576 retained products of conception 525 second/third trimesters 531–549 cervix evaluation 532 measurements 531 thyroid imaging 566 prematurity, chronic lung disease of 751 preseptal infection 315 primary biliary cirrhosis 104 primary sclerosing cholangitis 104 prion disease 281 Probst bundles 540, 827 progressive multifocal leukoencephalopathy 275 prosencephalon 530 prostate 189–191 cancer 189–191 PET-CT 559 prostatic utricle 801 prosthesis, evaluation of 580 prosthetic heart valves 684 protrusio deformity 351 prune belly syndrome 793 pseudo-pseudohypoparathyroidism 393 pseudoachalasia 128 pseudoaneurysm 683 femoral arterial 696	pseudoangiomatous stromal hyperplasia 626 pseudocirrhosis 95 pseudocyst spleen intrasplenic 118 post-traumatic 118 pseudodiverticulosis 129 pseudohypoparathyroidism 393 pseudokidney sign 774 pseudomyxoma peritonei 153 pseudotumor of hemophilia 360 orbital 318 renal 170 splenic inflammatory 119 psoriatic arthritis 355 pterygomaxillary fissure 299 pterygopalatine canal 299 pterygopalatine fossa 299–301 anatomy 299–300 puff of smoke sign 270 pulmonary alveolar proteinosis 63 pulmonary angiography, pulmonary artery 701 pulmonary arteries angiography 701 enlarged 73 left, anomalous origin 748 pulmonary arteriovenous malformation 701 pulmonary artery catheters 33 pulmonary atresia, with intact ventricular septum 765 pulmonary edema 31–32 alveolar 31 congenital 762 interstitial 31 pulmonary embolism 46–47 PIOPED II imaging 576–577 pregnancy 575–576 pulmonary fibrosis 20 idiopathic 49 pulmonary gangrene 22 pulmonary hypertension 43–46 chronic thromboembolic 45 classification 43 hypoxemic lung disease 45 left-to-right shunt 45 primary 45 pulmonary hypoplasia 542 pulmonary infection 21–26 <i>Aspergillus</i> 28–30 atypical mycobacteria 26 fungal 26
--	---	---

- pulmonary infection (cont.)
 - immunocompromised patients 27–30
 - pneumonia 21–23
 - tuberculosis 23–25
- pulmonary interstitial emphysema (PIE) 751
- pulmonary nodules 14–17
 - centrilobular 14
 - miliary 16
 - perilymphatic 15
 - random 16
 - solitary 34, 38
 - tree-in-bud 17
- pulmonary sling 748
- pulmonary vascular disease 43–47
- pulmonary vasculitis 57–58
- pulmonary veno-occlusive disease 45
- pulmonary venous hypertension 45
- pulvinar sign 281
- pump bumps 410
- pyelonephritis 173
 - acute diffuse 489
 - emphysematous 174, 489
 - focal 489
 - tuberculous 489
 - xanthogranulomatous 175, 490
- pyloric stenosis, hypertrophic 771
- pylorospasm 771
- pyogenic abscess
 - brain 277
 - liver 472
 - spleen 119
- pyonephrosis 174, 490
- pyosalpinx 517

- quadriceps tendon tear 421
- quadrigeminal plate lipoma 242
- quadrilateral space syndrome 453

- rachitic rosary 819
- radial buckle fracture 806
- radial head fracture 455
- radiation
 - biology 854–856
 - background radiation 856
 - cancer 855
 - death by radiation 854
 - deterministic effects 854
 - DNA damage 854
 - dose limits 856
 - dose to general public 856
 - fetal effects and dose 855
 - hereditary effects 854
 - occupational/iatrogenic exposure 855, 856
 - radiosensitivities 855
 - stochastic effects 855
 - syndromes 854
 - dosimetry 852
 - doubling dose 854
 - effective dose 844
 - equivalent dose 844
 - exposure 844
 - units 844
- radiation enteritis 143
- radiation injury
 - lung 59
 - white matter 276
- radiation necrosis 211
- radiation stricture of esophagus 125
- radiography 845–848
 - beam quality and half-value layer 847
 - cardiovascular 681–685, 760
 - digital detectors 848
 - film optical density 848
 - heel effect 845
 - linear attenuation coefficient 847
 - scatter and grids 847
 - X-ray generator 845
 - X-ray interactions with matter 846
- radionuclide cystography 584, 791
- radiotracers
 - cerebrovascular imaging 588
 - gastrointestinal bleeding 571
 - hepatobiliary imaging 572
 - liver-spleen imaging 570
 - musculoskeletal imaging 577
 - nuclear cardiology 561–562
 - parathyroid disease 569
 - PET-CT 554
 - pulmonary disease 575
 - renal imaging 582
 - thyroid imaging 566
 - uptake quantification 554
 - see also specific radiotracers*
- random pulmonary nodules 16
- ranula 285
- Rathke’s cleft cyst 234, 236
- Raynaud disease 738
- reactive arthropathy 355
- Recklinghausen disease of bone 392
- rectal duplication cyst 801
- reflex sympathetic dystrophy 581
- reflux (peptic) esophagitis 124
- regadenoson stress test 562
- Reiter disease 355
- relapsing polychondritis 75
- renal abscess 171, 174
- renal arteries 713–715
 - fibromuscular dysplasia 713
 - stenosis 501–502
 - atherosclerotic 501, 713
 - neurofibromatosis 713
- renal arteriovenous fistula 715
- renal arteriovenous malformation 169, 715
- renal cell carcinoma 167, 488, 714
 - pediatric 796
 - PET-CT 559
- renal cortical imaging 584
- renal cysts 171–172
 - Bosniak classification 172
 - hemorrhagic 171
 - pediatric 794
- renal osteodystrophy 393
- renal resistive index 486
- renogram 582
 - ACE inhibitor 583
 - lasix 584
- respiratory bronchiolitis-interstitial lung disease 14, 52
- respiratory distress syndrome 751
- restrictive cardiomyopathy 688
- retained products of conception 525
- rete testis, tubular ectasia 496
- retinoblastoma 321
- retinopathy of prematurity 321
- retroperitoneal fibrosis 159
- retroperitoneum 158–159
 - anatomy 158
 - disease 159
- retropharyngeal abscess 284
 - pediatric 744
- retropharyngeal space 283
- retrosternal clear space 67
- reverse halo sign 757
- reversible cerebral vasoconstriction syndrome 263
- rhabdoid tumor 796
- rhabdomyoma 769
- rhabdomyosarcoma
 - anterior skull base 301
 - nasal 743
 - pelvic 801
- rheumatoid arthritis 350–352
 - elbow 352
 - foot 351
 - hand/wrist 351
 - hip 351
 - knee 352
 - shoulder 352
 - spine 352
- rhombencephalon 530

- rickets 819
 - oncogenic 819
 - right atrial enlargement 681
 - right ventricular enlargement 681
 - ring and arc appearance 366, 372–373
 - ring enhancement 211
 - ring of fire sign 524
 - Roadrunner wire 699
 - ROC curve 853
 - Rokitansky nodule 197, 518
 - Rolando fracture 461
 - Romanus lesion 354
 - Rosen wire 699
 - Rosenthal’s basal vein 264
 - rotator cuff 442–446
 - atrophy 445
 - tear
 - full-thickness 445
 - partial-thickness 444
 - round atelectasis 7
 - round pneumonia 21
 - Roux-en-Y surgery *see* gastric bypass surgery
 - rubidium-82, nuclear cardiology 561
 - rugger jersey spine 394–395
 - saccular aneurysm 263
 - sacroccygeal teratoma 547, 801
 - sacroiliac joint, osteoarthritis 350
 - sacroiliitis 353
 - sail sign 455, 759
 - salivary glands 295–298
 - anatomy 295
 - benign parotid neoplasm 296
 - inflammatory disease 297–298
 - malignant parotid neoplasm 297
 - saprophytic aspergillosis 29
 - sarcoidosis 60–61, 362
 - airway involvement 77
 - cardiac involvement 679, 680
 - perilymphatic nodules 15
 - pulmonary fibrosis 20
 - salivary gland involvement 297
 - splenic involvement 119
 - testicular involvement 495
 - sarcoma
 - clear cell 796
 - embryonal, undifferentiated 788
 - Ewing 379, 579, 815
 - see also specific types*
 - SATCHMO mnemonic 235–239
 - sausage digit 355
 - scaphoid fracture 459
 - scapholunate ligament injury 459
 - Scheuermann kyphosis 822
 - schizencephaly 828
 - Schmorl’s node 337
 - Schatzki ring 123
 - Schwachman-Diamond syndrome 112
 - schwannoma 230
 - facial nerve 304
 - intradural-extramedullary 331
 - orbit 317
 - petrous apex 309
 - sciatic artery, persistent 728
 - scimitar syndrome 756
 - scleroderma 130
 - joint involvement 356
 - small bowel involvement 142
 - sclerosing cholangitis 723
 - sclerosing mesenteritis 152
 - scrotum
 - anatomy 493
 - infection 498
 - trauma 497
 - ultrasound 493–498
 - scurvy 391
 - seizures 588
 - sella 233
 - seminoma 70
 - testis 493
 - septate uterus 196, 509
 - septic arthritis 389
 - hip 812
 - septo-optic dysplasia 322
 - sequestration 542
 - pediatric 755
 - sequestrum 385
 - seronegative spondyloarthropathies 353
 - serous cystadenoma, pancreas 109
 - sesamoid fracture 402
 - Sever disease 822
 - sex-cord stromal tumors 494–495
 - shepherd’s crook deformity 338
 - shin splints 579–580
 - shiny corner lesion 354
 - shish kebab esophagus 128
 - shoulder 438–454
 - acromioclavicular joint 438
 - anatomy 438
 - bursae 441
 - coracoacromial arch and impingement syndrome 441–442
 - entrapment neuropathies 453
 - glenohumeral dislocation 438–440
 - instability 448–449
 - associated lesions 450–452
 - posterior 452
 - ligaments and rotator interval 446
 - Milwaukee 356
 - osteoarthritis 348
 - rheumatoid arthritis 352
 - rotator cuff 442–446
- sialadenitis, obstructive 297
 - sialolithiasis 297
 - sickle cell disease 396
 - sigmoid arteries 706
 - signet ring sign 78, 176, 758
 - silicosis 56
 - simple pulmonary eosinophilia 57
 - sinonasal disease 292–294
 - sinus tract 385
 - sinusitis
 - acute 292
 - bony complications 292
 - chronic 292
 - fungal
 - acute invasive 293
 - chronic allergic 293
 - intracranial complications 292
 - orbital complications 292
 - Sjögren syndrome 298
 - skeletal dysplasias 809–811
 - skier’s thumb 460
 - slipped capital femoral epiphysis 813
 - small bowel 136–143
 - anatomy 136
 - obstruction 136–139
 - small cell carcinoma, lung 37
 - soap-bubble lucencies 779
 - soft tissue
 - infections 389–390
 - rim sign 176
 - swelling 364
 - solid and papillary epithelial neoplasm 109
 - solitary pulmonary nodule 34
 - PET-CT 556
 - radiologic presentation 38
 - somatostatinoma 110
 - space of Retzius 507
 - speed kidney 709
 - spermatocele 496
 - Spetzler–Martin scale 257
 - sphenoid wing dysplasia 322
 - sphenopalatine foramen 299
 - spin-echo proton density 207
 - spine
 - cervical 435–437
 - congenital anomalies 340–341
 - degenerative disease 333, 334, 335–338, 349
 - general changes 337

spine (cont.) - high intensity zone 338 - Modic changes 337	malignant 133	superior mesenteric artery 706
fetus 538–541	ulcers 133	superior mesenteric artery syndrome 717
infection 339	<i>see also entries under gastric</i>	superior rectal (hemorrhoidal) artery 706
lesion localization 328	strawberry gallbladder 467	superior sulcus tumor 39
lumbar/thoracic 434	strawberry sign 548	superior vena cava 700
postoperative 338	stress fracture 579	obstruction 700
rheumatoid arthritis 352	stress testing 562	support devices 32–33
tumors 328–334	stridor 744–745	suprasellar mass 235–239
extradural 333–334	string of pearls/beads sign 713	supracondylar fracture 455
intradural-extramedullary 330–332	string sign 141	suprascapular nerve entrapment at spinoglenoid notch 454
intramedullary 328–330	stroke 252–256	at suprascapular notch 453
vascular disease 340	acute	surfer's ear 303
spinnaker sign 759	CT imaging 253	Swyer–James–MacLeod syndrome 757
spleen 116–122	MRI imaging 254	synovial chondromatosis 371
accessory 116	infarction 255	syphilis 820
congenital anomalies 116	acute 256	systemic disease, pulmonary involvement 60–62
infarct 121	chronic 256	systemic lupus erythematosus, joint involvement 356
infection 119	early subacute 256	
intrapancreatic accessory 113	hemorrhagic transformation 270	
nuclear imaging 571	hyperacute 255	
lesions	late subacute 256	
benign cystic 118	Sturge Weber syndrome 834	
benign non-cystic 117	subacute sclerosing	
inflammatory 119	panencephalitis 276	
malignant 120	subarachnoid hemorrhage 243, 260–263	
nuclear imaging 570	complications 261–263	
trauma 122	distribution 261	
ultrasound 485	grading 261	
wandering 116	perimesencephalic 262	
splenic artery aneurysm 710	subclavian arteries 660	
splenule 116	left, aberrant with right-sided aortic arch 747	
spokewheel appearance 714	right	
spondylolysis 434	aberrant 130	
sprue 142	aberrant with left-sided aortic arch 748	
squamous cell carcinoma	subclavian steal syndrome 736	
airways 80	subclavian thoracic outlet syndrome 734	
anterior skull base 301	subdural hematoma 243	
esophagus 127	subependymal giant cell astrocytoma 225	
lung 36	subependymoma 225	
salivary gland 297	subfalcine herniation 204	
staging, lung cancer 40–42	subglottic hemangioma 745	
steatocystoma multiplex 628	sublabral foramen 449	
steeple sign 744	sublingual glands 295	
stents 697	subluxation 362	
sternalis muscle 638	submandibular glands 295	
Still disease 360	submandibular/masticator abscess 287	
stippled epiphyses 811	subperiosteal abscess 315	
stomach 131–135	subtrochanteric fracture 429	
polyps 131–132	superficial siderosis 262	
thickened gastric folds 131	superior labrum anterior posterior (SLAP) tear 452	
tumors		
benign 132		

- telescoping digits 355
- temporal bone 302–313
 - fractures 308
 - petrous apex 309–310
 - see also* ear
- tendinosis 400
 - shoulder 444
- tendons 400
- tennis leg 425
- tenosynovitis 400
- teratoma 70, 241, 518
 - cardiac 769
 - sacroccygeal 547, 801
- Terry Thomas sign 459
- testis/testicular
 - contusion 497
 - cyst 496
 - cystic lesions 495–496
 - extra-testicular masses 495
 - metastatic disease 494
 - microlithiasis 494
 - rupture 497
 - torsion 497
 - tumors 493–495
 - benign 494–495
 - mimics 495
 - ultrasound 493–498
 - vascular disease 497
- tethered cord syndrome 340
- tetralogy of Fallot 766
- thalassemia 397
- thallium-201 561
 - exercise testing 563
 - whole-body imaging 585
- thanatophoric dysplasia 547, 809
- theca-lutein cyst 515
- thoracic angiography 699–702
 - bronchial artery 702
 - pulmonary artery 701
 - superior vena cava 700
- thoracic aortic aneurysm 666
- thoracic imaging 1–86
 - airways 75–82
 - anatomy 2
 - atalectasis 3–7
 - diffuse lung disease 48–64
 - lung disease *see* lung disease
 - mediastinum 65–74
 - pleura 83–85
 - pulmonary edema 31–32
 - pulmonary fibrosis 20
 - pulmonary infection 21–26
 - pulmonary nodules 14–17
 - pulmonary vascular disease 43–47
- thoracic outlet syndromes 734–735
- neurogenic 734
- subclavian 734
- Thornwaldt cyst 287
- thromboembolic disease 731–732
 - hand 738
- thrombosis, cavernous sinus 315
- thrower’s exostosis 452
- thumbprint sign 744
- thymolipoma 70
- thymoma 69
- thymus/thymic
 - carcinoid 70
 - carcinoma 70
 - cyst 70
- thyroglossal duct cyst 285
- thyroid
 - ectopic 566
 - iodinated contrast media, uptake 841
 - lingual 287
 - nodule 567
 - nuclear imaging 566–569
 - diagnostic indications 566–568
 - patient preparation 566
 - radiotracers 566
 - therapeutic indications 568–569
- thyroid cancer
 - PET-CT 558
 - post-radioiodine therapy
 - imaging 568
 - post-thyroidectomy imaging 568
 - ultrasound 505–506
- thyroid disease 504–506
 - diffuse 504–505
 - malignant adenopathy 506
 - multinodular gland 505
 - treatment 569
- thyroid ophthalmopathy 318
- thyroiditis
 - Hashimoto 504, 567
 - subacute/De Quervain 505, 568
- tibial plateau fracture 411
- tiger-striped lesion 220
- Tillaux fracture 409
- TNM staging system 40–42
- toddler’s fracture 806
- Tolosa-Hunt syndrome 318
- tombstone iliac wings 809
- TORCH infections 820
- torcular Herophili 264
- torticollis 823
- total anomalous pulmonary venous return 767
- toxoplasmosis 279
- trachea/tracheal
 - adenoid cystic carcinoma 81
 - amyloidosis 76
 - atresia 543
 - lymphoma 82
 - stenosis/thickening
 - focal 77
 - multifocal/diffuse 75–77
 - pediatric 745
 - tuberculosis 76
- tracheitis, exudative (bacterial) 745
- tracheobronchomalacia 745
- tracheobronchopathia
 - osteochondroplastica 75
- tracheoesophageal fistula 775
- tracheostomy, tracheal stenosis 77
- tram-track sign 320
- transient bone marrow edema 432
- transient tachypnea of newborn (TTN) 750
- transitional cell carcinoma
 - bladder 183
 - ureter 180
- transjugular intrahepatic portosystemic shunt (TIPS) 1419(a), 718–719
- transmesenteric hernia 138
- transposition of great arteries 766–767
- transtentorial (uncal) herniation 204
- trauma
 - aorta 665
 - bile duct 723
 - bladder 184–185
 - brain 243–245
 - elbow/forearm 455–456
 - facial fractures 245
 - foot/ankle
 - ankle 409
 - forefoot 401–404
 - midfoot/hindfoot 404–406
 - hand/wrist 460–461
 - hip 427–429
 - kidney 179, 715
 - knee 411
 - larynx 289
 - liver 100
 - scrotum 497
 - spleen 122
 - urethra 187
 - see also specific traumatic lesions*
- traumatic axonal injury 244
- traumatic pseudoaneurysm 263
- tree-in-bud nodules 17
- tricuspid atresia 767
- trigeminal artery, persistent 250
- triplane fracture 409
- triple bubble sign 778

triquetral fracture 459	metastatic 95, 475, 788	near/far field 860
trisomies 548–549	pediatric 786–542	pulse repetition frequency 860
trisomy 13 548	mesentery 151–152	refraction 859
trisomy 18 548	neurogenic 73	safe energy 859
trisomy 21 549	ovaries 198, 518	sound waves 859
Trolard’s vein 264	Pancoast 39	thermal index 859
trough sign 439, 452	pancreas 107–110, 484	tissue attenuation 859
truncus arteriosus 767	cystic epithelial 109–110	wavelength and transducer design 859
tuberculoma 278	endocrine 110	scrotum and testis 493–498
tuberculosis 23–25	solid epithelial 108–109	spleen 485
centrilobular nodules 14	pleura 83–84	thyroid/parathyroid 504–506
healed 25	spine 328–334	uterus 507–513
miliary 25	spleen 120	vascular 499–504
primary 23	stomach	inguinal hernia 782
reactivation (post-primary) 24	benign 132	unicameral bone cyst 382
renal 175	malignant 133	upper extremity angiography 733–738
tracheal 76	superior sulcus 39	anatomy 733
ureteral 181	testis 493–495	hand 737–738
tuberculous adenopathy 24	ureter	surgical dialysis access 736–737
tuberculous osteomyelitis 339	benign 181	thoracic outlet syndromes 734–735
tuberculous pyelonephritis 489	malignant 180	urachal anomaly 801
tuberous sclerosis 170, 835	<i>see also</i> cancer; and specific tumors	ureter 180–182
tubular ectasia 179	tunical cyst 496	infection/inflammation 181
tumors	turf toe 402	structural lesions 182
adrenal glands	twin embolization syndrome 529	tumors
imaging 161–163	twin pregnancy 526–528	benign 181
malignant 164–165	complications 528–529	malignant 180
airways 80–82	conjoined twins 528	ureteral jets 487
biliary 105–106	di/di (dichorionic/diamniotic)	ureteritis cystica 181
bone 365–366	twins 528	ureterocele 182
benign mimics 383–384	dizygotic (fraternal) twins 526	obstruction 793
Lodwick classification 366	mono/di (monochorionic/diamniotic)	ureterolithiasis 176
metastatic 383	twins 528	ureteropelvic junction obstruction
morphology 365–366	mono/mono (monochorionic/	182, 793
pediatric 815	monoamniotic) twins 528	urethra 186–191
brain 214–242	monozygotic (identical) twins 527	diverticulum 188
carcinoid <i>see</i> carcinoid tumor	twin–twin transfusion syndrome 528	female 188
cardiac 769	ulcers	male 186–187
esophageal	aorta 664	imaging 187
benign 126	stomach 133	stricture 187
malignant 127	ultrasound 464–552	trauma 187
gallbladder 468	breast 617–621	urethral valves, posterior 793
germ cell 70–72	gallbladder and bile ducts 465–471	urothelial papilloma 181
hepatobiliary 785–756	kidney 486–492	uterine arteriovenous
kidney 487–488	liver 471–476	malformation 513
benign 800	Doppler 477–483	uterine artery embolization 730
cystic 171–172	pancreas 483–484	uterus 192–198
diagnosis 166	physics 859–860	anatomy 192
metastatic 796	acoustic output index 859	benign disease 192–193
pediatric 795–796	axial resolution 860	congenital anomalies 196
solid 167	cavitation 859	congenital malformations 509
syndromes with 170	elevational resolution 860	fluid/blood-filled 801
liver	lateral resolution 860	infection 513
benign 96–98, 473–474	mechanical index 859	malignant disease 194
malignant 93–95, 475–476		

scanning orientation 508	ventilator-associated pneumonia 21	Warthin tumor 296
ultrasound 507–513	ventral hernia 138	Waterhouse–Friderichsen syndrome 161
VACTERL association 775	ventricles, cerebral	Wegener’s granulomatosis 58
vagina, fluid/blood-filled 801	anatomy 202	airway involvement 77
valvular heart disease 683–685	intraventricular hemorrhage 244	cavitary lesions 18, 58
aortic valve	intraventricular tumors 228	Weigert–Meyer rule 792
regurgitation 685	ventricles, heart	Wernicke encephalopathy 274
stenosis 685	left	Westermarck sign 47
endocarditis 683	aneurysm 683	Whipple disease 143
mitral valve	enlargement 681	white cerebellum sign 282
annular calcification 685	septal defect 763	white matter disease 272–276
regurgitation 685	single (“tingle”) 768	iatrogenic 276
stenosis 685	ventriculomegaly 538	idiopathic/autoimmune/
prosthetic heart valves 684	vertebral arteries 660	inflammatory 272–274
right-sided 685	vertebral bodies, metastatic	infectious (viral) 275–276
varicocele 495–496, 721	disease 333	post-viral 276
vasa previa 533	vertebral disc	toxic-metabolic 274
vascular disease	bulges/herniations 335–337	vascular 274–275
adnexae 517	discitis 333	whole-body imaging 584–587
bone 378	pyogenic 339	clinical applications 586–587
liver 99	osteomyelitis 339	Wilms tumor 795–796
lung 43–47	vesicoureteral reflux 791	Wilson disease 91
spine 340	vidian canal 299	Wimberger ring sign 820
vascular malformations, central	VIPoma 110	Wimberger sign 820
nervous system 257–259	viral encephalitis 213	windsock deformity 777
vascular ultrasound 499–504	viral infections	wires 699
vasculitis	brain 280	wrist <i>see</i> hand/wrist
Churg–Strauss 57	<i>see also specific infections</i>	
CNS 270, 275	visceral abdomino-pelvic compression	X-rays <i>see</i> radiography
pulmonary 57–58	syndromes 716–717	xanthogranulomatous
vasospasm 261	vitamin deficiency 391	pyelonephritis 175, 490
vein of Galen 264	vocal cord paralysis 289	xenon-133 575
aneurysm 242	volar plate fracture 461	
malformation 257, 541	volvulus, midgut 772–773	yolk sac 519
veno-occlusive disease, liver 99	von Hippel–Lindau disease 170	
venous angioma 259	pancreatic manifestations 112	Zenker diverticulum 129
venous compression syndromes 716–717	von Meyenburg complexes 99	Zollinger Ellison syndrome 131
venous thrombosis	von Recklinghausen disease	Zuckerguss 221
brain 265	832–833	zygomaticomaxillary complex
intraparenchymal	Wagstaffe–LeFort fracture 409	fractures 245
hemorrhage 269	wandering spleen 116	Zygomycetes, sinusitis 293