

Index

A

- Abdominal fibromatosis (abdominal desmoids), 275–276
- Abrikossoff tumors. *See* Granular cell tumors (GCTs)
- Abscess
- diffusion MRI, 108
 - inflammatory and infectious lesions, 528–529
 - intramuscular, 529
- Accessory breast, 526
- Accessory palmaris longus muscle, 524
- Accessory soleus muscle, 524
- Acral fibromyxoma (AFM), 428, 433
- Acromioclavicular (AC) joint, 564, 566
- Adenocarcinoma, 138, 594
- Adipocytic tumors
- benign
 - angioliipoma, 211–212
 - chondroid lipoma, 213–215
 - fibrolipoma, 221
 - hibernoma, 217–220
 - lipoblastoma, 210–211
 - lipoma, 198–203
 - lipomatosis, 203–208
 - myoliipoma of soft tissue, 212–213
 - nerve, lipomatosis of, 208–210
 - ossifying lipoma, 221
 - osteoliipoma, 221
 - parosteal lipoma, 221–225
 - pleomorphic lipoma, 215–217
 - spindle cell lipoma, 215–217
 - tendon sheath and joint lipoma, 221
 - differential diagnosis, 237–238
 - intermediate (locally aggressive), 225–230
 - malignant, 230–232
 - dedifferentiated liposarcoma, 232
 - liposarcoma, not otherwise specified, 237
 - myxoid liposarcoma, 232–237
 - pleomorphic liposarcomas, 237
 - MRI role, 198
 - WHO classification, 188
- Adiposis dolorosa, 207–208
- Adult fibrosarcoma, 292–293
- Adventitial cystic disease, 562
- AJCC manual for staging cancer, 145–146, 587
- Alveolar rhabdomyosarcoma, 347–348, 351
- Alveolar soft part sarcoma
- definition, 454
 - imaging, 454–458
 - incidence and clinical behavior, 454
 - left thigh, 454–456
 - of thoracic spine, 456, 457
- American Joint Committee on Cancer (AJCC), 145, 188
- Amputation neuroma, 545, 546
- Amyloidosis, 12–14
- Angioleiomyoma
- clinical findings, 358
 - definition, 358
 - imaging, 358–359
 - vascular leiomyoma / angiomyoma, 21–24
- Angioliipoma, 211–212
- Angiomatoid fibrous histiocytoma (AFH)
- definition, 439
 - imaging, 439, 440
 - incidence and clinical behavior, 439
- Angiomyoliipoma (AML), 473
- Angiomyxoma, aggressive
- definition, 434
 - imaging, 434–435
 - incidence and clinical behavior, 434
 - paravaginal, 434–435
- Angiosarcoma, 370, 371
- Apparent diffusion coefficient (ADC), 409, 414, 434, 637, 638
- Armed Forces Institute of Pathology (AFIP), 324
- Arteriovenous malformations (AVMs)
- calf, 382
 - definition, 381
 - dynamic opacification, 384
 - histology of, 381
 - of knee, 382, 383
 - magnetic resonance imaging, 382
 - treatment for, 384
 - ultra sound, 381–382
- Arthrography, 513
- Arthrosynovial cyst, 496–497
- Articular and synovial sheath masses
- amyloidosis, 12–14
 - synovial osteochondromatosis/synovial chondromatosis, 11
 - tenosynovial giant cell tumor, 11–12

- Askin's tumor, 465, 466. *See also* Primitive neuroectodermal tumors (PNET)
- Atypical fibrous histiocytoma (AFH), 328
- Atypical fibroxanthoma (AFX)
 definition, 437–438
 imaging, 439
 incidence and clinical behavior, 437–438
- B**
- Baker's cyst, 497, 499
- B-cell lymphoma, 588
 subcutaneous, 587
- Benign adipocytic tumors
 angioliipoma, 211–212
 chondroid lipoma, 213–215
 fibrolipoma, 221
 hibernoma, 217–220
 lipoblastoma, 210–211
 lipoma, 198–203
 lipomatosis, 203–208
 myoliipoma of soft tissue, 212–213
 nerve, lipomatosis of, 208–210
 ossifying lipoma, 221
 osteoliipoma, 221
 parosteal lipoma, 221–225
 pleomorphic lipoma, 215–217
 spindle cell lipoma, 215–217
 tendon sheath and joint lipoma, 221
- Benign cystic lesions
 arthrosynovial cyst, 496–497
 Baker's cyst, 496
 bursa de novo (adventitious bursa), 507–510
 clinical manifestations, 509–510
 ganglion (cyst), 497–507
 imaging
 arthrography/direct cyst puncture, 513
 conventional radiography, 510–511
 CT scan, 513
 MRI, 513–516
 ultrasound, 511–513
- Benign fibroblastic/myofibroblastic tumors
 calcifying aponeurotic fibroma, 262
 desmoplastic fibroblastoma
 (collagenous fibroma), 262
 elastofibroma, 253–255
 fibroma of tendon sheath, 255–258
 ischemic fasciitis, 252–253
 myositis ossificans and fibroosseous pseudotumor of digits, 247–252
 nodular fasciitis, 245–247
 nuchal-type fibroma, 258–261
 proliferative myositis (and fasciitis), 247
- Benign fibrous histiocytoma (BFH)
 clinical behaviour and gross findings, 325–327
 differential diagnosis, 328
 genetics, 328
 imaging findings, 328–330
 pathology, 327–328
- Benign lesions
 acral fibromyxoma, 428
 deep (“aggressive”) angiomyxoma, 434–435
 ectopic hamartomatous thymoma, 436–437
 intramuscular myxoma (incl. cellular variant), 426–428
 juxta-articular myxoma, 428–430
 myxoma, of Jaws, 430–434
 pleomorphic hyalinizing angiectatic tumor, 435–436
- Benign triton tumors, 411
- Benign vascular tumors
 congenital hemangioma, 366–369
 epithelioid hemangioma, 368
 infantile hemangioma, 365–368
- Bilateral vestibular schwannomas, 419
- Biopsy
 diagnostic accuracy, 133–138
 immunohistochemistry, 138
 intra-*versus* extra-compartmental spread, 131–133
 needle, technique and choice of, 138–139
 open surgical biopsy, 135
 safety rules, 133
- Biphasic synovial sarcoma, 445
- Budd–Chiari syndrome, 342
- Bursa, 508
- Bursa de novo (adventitious bursa), 507–510
- Bursitis, 536
- C**
- Calcific myonecrosis, 551, 552
- Calcific tendinosis, 556–558, 560
- Calcifying aponeurotic fibroma, 262
- Calcium pyrophosphate dihydrate crystals (CPPD), 556
- Capillary malformations (CMs), 381
- Cardiac rhabdomyoma, 345
- Carney's syndrome, 395
- Carney–Stratakis syndrome, 614
- Carney triad syndrome, 614
- Catheter angiography, 553
- Cat scratch disease
 central necrosis, 539
 computed tomography (CT), 539
 definition, 538
 epitrochlear mass, 539
 location, 538
 polymerase chain reaction, 540
Rochalimae henselae, 538
- Cellulitis, 527
- Chondroid lipoma, 213–215
- Chondro-osseous soft tissue tumors
 extraskeletal osteosarcoma, 609–611
 soft tissue chondroma, 604–605
 synovial osteochondromatosis, 605–610
 WHO classification, 192–193
- Choroid melanoma, 596
- Chronic bursitis, 512, 513
- Classification of Tumors of Soft Tissue and Bone*, 393
- Claudication intermittens, 562, 563

- Clear cell myomelanocytic tumor (CCMMT)
 definition, 473
 imaging, 473–475
 incidence and clinical behavior, 473
- Clear cell sarcoma
 clinical behavior, 459
 definition, 458–459
 imaging, 459–460
 incidence, 459
- Collagen 6A3 (COL6A3) gene, 315
- Color Doppler ultrasound (CDUS)
 characteristics, 5–11
 principles, 4
 superficial soft tissue tumors, 11
 tumorlike lesions, 11
- Computed tomography (CT), 60
 features, 49–51
 vs. MRI, 51–55
- Computed tomography pulmonary angiography (CTPA), 53
- Congenital hemangioma (CH)
 noninvoluting, 366–369
 partially involuting, 368
 rapidly involuting, 366
- Contrast-enhanced MRI
 fat-suppressed contrast-enhanced T1-weighted
 imaging, 79–81
 static vs. dynamic enhanced MRI, 81
 subtraction images, 81
 T1-weighted imaging, 79
- Conventional anatomical MR imaging, 414
- Conventional imaging modalities (CIMs), 63
- Conventional radiography, 60
- Core needle biopsy (CNB), 133
- CSF1 gene, 315
- Cyst. *See* Ganglion (cyst)
- Cytogenetics, 124
- D**
- DCE. *See* Dynamic contrast-enhanced (DCE)
 MR imaging
- Dercum disease, 207–208
- Dermal nerve sheath myxomas (DNSMs), 411
- Dermatofibrosarcoma protuberans, 282–285
- Desmoid tumors, extra-abdominal, 269–275
- Desmoid-type fibromatoses
 of pelvis, 644
 in thigh, 646
- Desmoplastic fibroblastoma (collagenous fibroma), 262
- Desmoplastic small round cell tumor (DSRCT), 462, 464
- Diabetes mellitus, 530
- Diabetic muscle infarction, 535–536
- Diagnostic algorithm, 181–182
- Diffuse giant cell tumours (D-GCT)
 clinical behaviour and gross findings, 320–321
 differential diagnosis, 322
 epidemiology, 320
 imaging findings, 321–322
 pathology, 321
- Diffuse neurofibromas, 405
- Diffuse-type tenosynovial giant cell tumour (D-TSGCT)
 clinical behaviour and gross findings, 320–321
 differential diagnosis, 322–323
 epidemiology
 diffuse giant cell tumours, 320
 pigmented villonodular synovitis, 320
 genetics, 321
 imaging findings, 321–322
 pathology, 321
- Diffusion MRI
 clinical applications, 108–109
 imaging technique, 106
 qualitative, 106
 quantitative, 106–107
- Diffusion tensor imaging (DTI), 416
- Diffusion weighted imaging (DWI), 414, 434
 sarcoidosis, 537
 soft tissue metastases, 597
- Distal denervation muscle atrophy, 546
- DWI. *See* Diffusion weighted imaging (DWI)
- Dynamic contrast-enhanced MRI
 clinical applications, 101–105
 evaluation and postprocessing techniques, 88–101
 imaging techniques, 87–88
 principles, 85–87
- Dynamic contrast-enhanced (DCE) MR imaging,
 414, 637, 641
- Dystrophic calcification
 soft tissue mineralization disorders, 35
- E**
- Ectopic hamartomatous thymoma (EHT)
 definition, 436
 imaging, 436
 incidence and clinical behavior, 436
- Ectopic meningiomas, 412
- Elastofibroma, 253–255
- Elastofibroma dorsi
 computed tomography, 566
 definition, 564
 differential diagnosis, 566–568
 left periscapular soft tissue mass, 567
 locations, 564
 magnetic resonance imaging, 566
 ultrasound, 566
- Embryonal rhabdomyosarcoma, 347, 353, 624
- Enchondromas, 388
- End-bulb neuromas (EBN). *See* Traumatic neuroma
- Epidermal inclusion cysts, 555–557
- Epithelioid hemangioendothelioma (EH), 370
- Epithelioid hemangioma, 368
- Epithelioid sarcoma
 definition, 451
 imaging, 452–454
 incidence and clinical behavior, 451–452
 in lumbar paraspinal region, 453
- European Society for Medical Oncology (ESMO), 154

- European Society of Musculoskeletal Radiology (ESSR), 155
- External beam radiotherapy, 321
- Extra-abdominal desmoid tumors, 269–275
- Extracardiac rhabdomyoma
- clinical findings, 345
 - definition, 345
 - imaging, 345, 347
- Extrapleural solitary fibrous tumor, 285
- Extrarenal rhabdoid tumors (ERRTs)
- definition, 469
 - imaging, 473, 474
 - incidence and clinical behavior, 472
- Extraskelletal chondroma
- of foot, 604
 - at popliteal fossa, 607
 - right patella, 604, 605
- Extraskelletal Ewing's sarcoma
- definition, 467–468
 - imaging characteristics, 469–472
 - incidence and clinical behavior, 468–469
 - of left thigh, 470, 471
 - of pelvis, 469
- Extraskelletal myxoid chondrosarcoma (EMC), 461, 603
- Extraskelletal osteochondroma, 604, 607
- Extraskelletal osteosarcoma
- definition, 609
 - imaging, 611
 - incidence and clinical behavior, 609–611
 - of thigh, 611, 613
- F**
- Fascicular sign, 400
- Fat necrosis, US findings, 33–34
- Fat-suppressed T1-weighted imaging (FS T1-WI)
- contrast-enhanced, 79–81
 - unenhanced MRI, 76–77
- Fetal rhabdomyoma, 345
- ¹⁸F-Fluorodeoxyglucose positron emission tomography (¹⁸F-FDG PET), 60
- ¹⁸F-Fluorodeoxyglucose positron emission tomography-computed tomography (¹⁸F-FDG PET-CT), 487, 489, 597
- Fibroblastic/myofibroblastic tumors
- abdominal fibromatosis (abdominal desmoids), 275–276
 - benign proliferations
 - calcifying aponeurotic fibroma, 262
 - desmoplastic fibroblastoma (collagenous fibroma), 262
 - elastofibroma, 253–255
 - fibroma of tendon sheath, 255–258
 - ischemic fasciitis, 252–253
 - myositis ossificans and fibrous pseudotumor of digits, 247–252
 - nodular fasciitis, 245–247
 - nuchal-type fibroma, 258–261
 - proliferative myositis (and fasciitis), 247
 - extra-abdominal desmoid tumors, 269–275
 - fibromatoses, 262–265
 - infancy and childhood, fibrous tumors
 - fibromatosis colli, 279–282
 - fibrous hamartoma, 276–278
 - infantile digital fibromatosis, 278
 - juvenile hyaline fibromatosis, 278–279
 - intermediate-grade
 - dermatofibrosarcoma protuberans, 282–285
 - extrapleural solitary fibrous tumor, 285
 - infantile fibrosarcoma, 289–291
 - inflammatory myofibroblastic tumor, 285
 - low-grade myofibroblastic sarcoma, 285–286
 - myxoinflammatory fibroblastic sarcoma, 286–289
 - knuckle pads, 269
 - lipofibromatosis, 276
 - malignant
 - adult fibrosarcoma, 292–293
 - low-grade fibromyxoid sarcoma, 295–299
 - myxofibrosarcoma, 293–295
 - sclerosing epithelioid fibrosarcoma, 299–302
 - palmar fibromatosis, 265–266
 - plantar fibromatosis, 266–269
 - US findings, 29–32
 - WHO classification, 188–189
- Fibrohistiocytic tumours (so-called)
- fibrous histiocytoma, deep benign, 325–328
 - intermediate (rarely metastasising)
 - giant cell tumour of soft tissue, 331–332
 - plexiform fibrohistiocytic tumour, 328–331
 - tenosynovial giant cell tumour
 - diffuse-type, 320–324
 - localised type, 312–320
 - malignant-type, 324–325
 - WHO classification, 189–190
- Fibrolipoma, 221
- Fibroma
- nuchal-type, 258–261
 - of tendon sheath, 255–258
- Fibroma of the tendon sheath (FTS), 320
- Fibromatosis, 262–265
- palmar, 265–266
 - plantar, 266–269
- Fibromatosis colli, 625
- fibrous pseudotumor, digits, 247–252
- Fibrosarcoma, 627
- Fibrous tumors, infancy and childhood
- fibromatosis colli, 279–282
 - fibrous hamartoma, 276–278
 - infantile digital fibromatosis, 278
 - juvenile hyaline fibromatosis, 278–279
- Fine-needle aspiration biopsy (FNAB), 133, 590
- Fluid-sensitive sequences, 77–78
- Fluorescence in situ hybridization (FISH), 124, 591
- Focal myositis, 535
- Follow-up imaging
- locoregional recurrence, 643–646
 - metastases, 646–648
 - monitoring response, to therapy, 636–643
 - therapy-induced changes, in normal tissue, 636
 - volume measurements, 636

Foreign body reactions, 549–551
 Fraction anisotropy (FA), 416
 Frozen section role, 118
 Functional MR imaging, 414–416

G

Ganglion (cyst)
 adventitial cystic disease, 497, 500
 of anterior cruciate ligament, 505, 507
 benign cystic lesions, 497
 dorsum, of foot, 501, 502
 intramuscular, 503
 of left hip, 504, 506
 in lower leg, 499, 501
 meniscal cyst, 503, 504
 para-articular cyst, 497, 498
 pathogenesis of, 497
 of proximal tibiofibular joint, 501, 503
 in spinglenoid notch of shoulder, 504, 505
 US finding, 27–28
 on wrist, 501, 502
 Gas gangrene, 529
 Gastrointestinal stromal tumors (GISTs), 603
 definition, 611, 613
 histopathology, 614
 imaging features, 614–617
 incidence and clinical behavior, 613–614
 prognosis, 617
 of small bowel, 614, 617
 of stomach, 614, 615
 treatment, 617, 618
 WHO classification, 193
 Gd-chelate-enhanced imaging, 637
 Genetics role, 122, 126
 Genital rhabdomyoma, 345
 Geysler phenomenon, 564, 566
 Giant B-cell lymphoma, 579, 580
 Giant cell tumor. *See* Pigmented villonodular synovitis (PVNS)
 Giant cell tumour of soft tissue (GCT-ST), 330
 Giant cell tumour of the tendon sheath (GCTTS)
 clinical behaviour and gross findings, 314
 differential diagnosis, 320
 epidemiology, 312
 imaging findings
 computer tomography, 319
 magnetic resonance imaging, 319
 radiographs, 315
 scintigraphy, 319
 ultrasound, 315–319
 pathology, 314
 Glomangiomas
 clinical findings, 349–350
 definition, 349
 of forearm, 356
 imaging, 350–351
 Glomus tumor (GT), 384, 385
 clinical findings, 348–349
 definition, 348

imaging, 349
 of upper extremity, 355
 US finding, 20–21
 Glucose transporter protein-1 (GLUT1), 366
 Gout, 556, 559
 Grading
 combined parameters, 164–165
 individual parameters, 162–164
 World Health Organization (WHO), 162
 Granular cell tumors (GCTs), 411
 Granuloma annulare, 554–555, 626
 Granulomatous disorders
 cat scratch disease, 538–541
 injection granulomas, 540–541
 mycetoma, 541–543
 sarcoidosis, 536–538
 tuberculous osteomyelitis, 536, 537

H

Haemosiderin, 313, 314, 322
 Hematoma
 acute, 545–547
 biopsy, 547
 of calf, 546, 548
 computed tomography, 546
 contusion, 545
 diffusion MRI, 108
 hemosiderin, 547
 magnetic resonance imaging, 546
 muscle contraction, dynamic evaluation, 545–546
 Hemosiderotic fibrolipomatous tumor (HFLT)
 definition, 437
 imaging, 437, 439
 incidence and clinical behavior, 437
 Hereditary hemorrhagic telangiectasia.
See Rendu–Osler–Weber syndrome
 Hibernoma, 217–220
 Human herpesvirus-8 (HHV-8), 369
 Hybrid nerve sheath tumors, 411
 Hypothenar hammer syndrome, 551–553

I

Infancy and childhood, fibrous tumors
 fibromatosis colli, 279–282
 fibrous hamartoma, 276–278
 infantile digital fibromatosis, 278
 juvenile hyaline fibromatosis, 278–279
 Infantile fibrosarcoma, 289–291
 Infantile hemangioma (IH), 629
 of cheek, 366, 368
 glucose transporter protein-1, 366
 involuting phase, 365–366
 magnetic resonance imaging, 366
 in posterior cervical neck, 366, 367
 proliferative phase, 365, 366
 treatment, 366
 Infantile myofibromatosis, 355, 357. *See also*
 Myofibromatosis

- Infantile rhabdomyosarcoma, 628
 Inflammatory and infectious lesions
 abscess, 528–529
 bursitis, 536
 cellulitis, 527
 diabetic muscle infarction, 535–536
 focal myositis, 535
 granulomatous disorders, 536–541
 lymphedema and lymphangitis, 528
 muscular cystic echinococcosis, 532–534
 necrotizing fasciitis, 527
 pyomyositis, 529–532
 Inflammatory myofibroblastic tumor, 285
 Infrapatellar (Hoffa) fat pad, 312, 313
 Injection granulomas, 540–541
 Intermediate (locally aggressive) adipocytic tumors, 225–230
 Intermediate and malignant vascular tumors
 angiosarcoma, 370, 371
 epithelioid hemangioendothelioma, 370
 kaposiform hemangioendothelioma, 368–369
 Kaposi's sarcoma, 369–370
 Intermediate-grade fibroblastic/myofibroblastic tumors
 dermatofibrosarcoma protuberans, 282–285
 extrapleural solitary fibrous tumor, 285
 infantile fibrosarcoma, 289–291
 inflammatory myofibroblastic tumor, 285
 low-grade myofibroblastic sarcoma, 285–286
 myxoinflammatory fibroblastic sarcoma, 286–289
 Intermediate tumors (rarely metastasising)
 angiomatoid fibrous histiocytoma, 439, 440
 atypical fibroxanthoma, 437–439
 giant cell tumour of soft tissue
 clinical behaviour and gross findings, 331
 differential diagnosis, 332
 genetics, 332
 imaging findings, 332
 pathology, 331–332
 mixed tumor, 440, 441
 ossifying fibromyxoid tumor, 439–441
 phosphaturic mesenchymal tumor, 443, 444
 plexiform fibrohistiocytic tumour
 clinical behaviour and gross findings, 329
 differential diagnosis, 330–331
 genetics, 329
 imaging findings, 330
 pathology, 329
 International Society for the Study of Vascular Anomalies (ISSVA), 364–365
 International Working Formulation (IWF), 578
 Interstitial cells of Cajal (ICC), 611, 613
 Intimal sarcoma
 definition, 475–476
 imaging, 476
 incidence and clinical behavior, 476
 Intramuscular abscess, 529
 Intramuscular myxoma (incl. cellular variant)
 in autochthonous back muscles, 427, 432
 of calf, 427, 429
 definition, 426
 imaging
 computed tomography, 427
 magnetic resonance imaging, 427
 incidence and clinical behavior, 426–427
 with polyostotic fibrous dysplasia, 427, 430, 431
 right scapular region, 427, 428
 Intratumoral signal void, 625, 629
 Intravascular lymphomatosis (IL), 579
 Ischemic fasciitis, 252–253
- J**
- Juxta-articular myxoma, 428–430
- K**
- Kaposiform hemangioendothelioma (KHE), 368–369
 Kaposi's sarcoma (KS), 369–370
 Kasabach–Merritt syndrome, 369, 370, 386–387
 Kiel Pediatric Tumor Registry, 623
 Klippel–Trenaunay syndrome, 387–388
 Knuckle pads, 269
- L**
- Leiomyoma, of deep soft tissue
 clinical findings, 340
 definition, 340
 imaging, 341
 Leiomyosarcoma
 clinical findings, 341–343
 cutaneous, 343
 deep soft tissue, 342
 definition, 341
 imaging, 343–345
 of inferior vena cava, 343
 in left thigh, 344
 of right knee, 345
 of right thigh, 346
 subcutaneous, 342, 343
 vascular, 342, 343
 Light microscopy role
 histology, 119–120
 immunohistochemistry, 120–122
 Lipoblastoma, 210–211
 Lipofibromatosis, 276
 Lipoma, 198–200
 chondroid, 213–215
 intermuscular, 200–203
 intramuscular, 200–203
 multiple, 203
 ossifying, 221
 parosteal, 221–225
 pleomorphic, 215–217
 spindle cell, 215–217
 tendon sheath and joint, 221
 US finding, 24–27

- Lipoma arborescens, 516–518
- Lipomatosis
- adipos dolorosa, 207–208
 - diffuse, 203
 - multiple symmetrical, 204–207
 - of nerve, 208–210
 - shoulder girdle, 208
- Liposarcoma
- after resection and radiotherapy of, 645
 - dedifferentiated, 232
 - myxoid, 232–237
 - pleomorphic, 237
 - well-differentiated, 225–230
- Liposarcoma, not otherwise specified, 237
- Localised nodular synovitis (LNS)
- clinical behaviour and gross findings, 314
 - differential diagnosis, 320
 - epidemiology, 312–316
 - imaging findings
 - computer tomography, 319
 - magnetic resonance imaging, 313, 315, 319
 - radiographs, 313, 316
 - ultrasound, 316–317, 319
 - pathology, 315
- Localised tenosynovial giant cell tumour (Localised TSGCT)
- giant cell tumour of the tendon sheath
 - clinical behaviour and gross findings, 314
 - differential diagnosis, 320
 - epidemiology, 312
 - imaging findings, 315–319
 - pathology, 314
 - localised nodular synovitis
 - clinical behaviour and gross findings, 314
 - differential diagnosis, 320
 - epidemiology, 312–316
 - imaging findings, 313, 315–317, 319
 - pathology, 315
- Localized intravascular coagulopathy, 375
- Localized neurofibromas, 405, 406
- Locoregional recurrence, 643–646
- Locus minoris resistentiae, 497
- Long-standing denervation, 563
- Low-grade fibromyxoid sarcoma, 295–299
- Low-grade myofibroblastic sarcoma, 285–286
- Lymphangioliomyomatosis (LAM), 473–474
- Lymphatic malformations (LMs)
- diagnosis, 377
 - macrocytic, 376, 377, 379
 - magnetic resonance imaging, 379–380
 - microcytic, 376–379, 381
 - pathology, 377
 - ultrasound, 379
- Lymphedema, 528
- M**
- Macrocytic lymphatic malformations, 376, 377, 379
- Maffucci syndrome, 388
- Magnetic resonance imaging (MRI)
- adipocytic tumors, 198
 - contrast-enhanced MRI
 - fat-suppressed contrast-enhanced T1-weighted imaging, 79–81
 - static vs. dynamic enhanced MRI, 81
 - subtraction images, 81
 - T1-weighted imaging, 79
 - diffusion MRI
 - clinical applications, 108–109
 - imaging technique, 106
 - qualitative, 106
 - quantitative, 106–107
 - dynamic contrast-enhanced MRI
 - clinical applications, 101–105
 - evaluation and postprocessing techniques, 88–101
 - imaging techniques, 87–88
 - principles, 85–87
 - imaging planes, 72
 - local staging, 71
 - tissue characteristics, 72
 - unenhanced MRI
 - fat-suppressed T1-weighted imaging (FS T1-WI), 76–77
 - fluid-sensitive sequences, 77–78
 - T2* gradient echo imaging, 78–79
 - T1-weighted imaging (T1-WI), 73–75
- Malignant adipocytic tumors, 230–232
- dedifferentiated liposarcoma, 232
 - liposarcoma, not otherwise specified, 237
 - myxoid liposarcoma, 232–237
 - pleomorphic liposarcomas, 237
- Malignant fibroblastic/myofibroblastic tumors
- adult fibrosarcoma, 292–293
 - low-grade fibromyxoid sarcoma, 295–299
 - myxofibrosarcoma, 293–295
 - sclerosing epithelioid fibrosarcoma, 299–302
- Malignant fibrous histiocytoma (MFH), 189
- Malignant glomus tumor
- clinical findings, 352
 - definition, 352
 - imaging, 352
- Malignant lesions
- alveolar soft part sarcoma, 454–458
 - clear cell myomelanocytic tumor, 473–475
 - clear cell sarcoma of soft tissue, 458–460
 - desmoplastic small round cell tumor, 462, 464
 - epithelioid sarcoma, 451–454
 - extrarenal rhabdoid tumor, 469–473
 - extraskeletal myxoid chondrosarcoma, 461
 - intimal sarcoma, 475–476
 - malignant mesenchymoma, 461–462
 - PNET/extraskeletal Ewing's sarcoma, 462–471
 - synovial sarcoma, 443–451
- Malignant mesenchymoma
- definition, 461
 - imaging, 463
 - incidence and clinical behavior, 462

- Malignant peripheral nerve sheath tumors (MPNSTs)
 clinical presentation, 413
 epidemiology, 412
 of face, 414, 415
 histology, 412
 imaging characteristics
 magnetic resonance imaging, 414–417
 nuclear medicine, 417
 plain radiography, 413
 ultrasound, 413–414
 in left ischiorectal fossa, 414, 416
 paraspas, 414, 415
 presacral, 413
 topography, 412
- Malignant-type tenosynovial giant cell tumour (Malignant TSGCT)
 clinical behaviour and gross findings, 324
 genetics, 324
 imaging findings, 324, 327
 pathology, 324
- Maximum intensity projections (MIP), 514
- Mazabraud's syndrome, 426, 427
- McCune–Albright syndrome, 426
- Mesenchymal chondrosarcoma (MCS)
 of buttock, 612
 definition, 608
 imaging, 608–610
 incidence and clinical behavior, 608
 of left pectoralis minor, 612
 of right axilla, 611
- Metabolic lesions
 calcific tendinosis, 556–557, 560
 gout and pseudogout, 556, 558, 559
 tumoral calcinosis, 557–562
- Metabolic MR imaging, 417
- Metastases, 646
- Metastatic spread, of cancer, 518
- Microcystic lymphatic malformations, 376–379, 381
- Molecular studies role
 diagnosis, 124–125
 genetic alterations, 122–124
 prognosis, 125
 techniques, 124
 treatment, 125–126
- Monophasic epithelial synovial sarcoma, 445
- Monophasic fibrous synovial sarcoma, 445
- Morton's fibroma
 definition, 542
 elastography, 544
 intermetatarsalgia, 543
 magnetic resonance imaging, 544
 Mulder's test, 544
 treatment, 545
 ultrasound, 543
- Mucosa-associated lymphoid tissue (MALT) lymphomas, 578
- Muscle herniations, 524, 525
- Muscle tumors
 pericytic (perivascular) tumors
 angioliomyoma, 358–359
 glomangiomas, 349–352, 356
 glomus tumor, 348–349, 355
 malignant glomus tumor, 352
 myofibroma and myofibromatosis, 355–358
 myopericytoma, 354–355
 skeletal
 extracardiac rhabdomyoma, 345, 347
 rhabdomyosarcoma, 345–354
 smooth
 leiomyoma of deep soft tissue, 340–341
 leiomyosarcoma (excluding skin), 341–346
- Muscular anomalies, 524
 diagnosis of, 525
- Muscular cystic echinococcosis
 alveolar, 532
 of calf, 533
 computed tomography, 533
 definition, 532
 diabetic muscle infarction, 535–536
 differential diagnosis, 535
 focal myositis, 535
 of left thigh, 533, 534
 magnetic resonance imaging, 533
 in right paravertebral muscles, 533, 534
 ultrasonography, 533
- Musculoskeletal Tumor Society (MSTS), 146
- Mycetoma, 541–543
- Mycosis fungoides, 579
- Myoepithelioma
 definition, 440
 imaging, 441, 442
 incidence and clinical behavior, 440–441
 of left perineal/gluteal region, 442
- Myofibromatosis
 clinical findings, 355–357
 definition, 355
 imaging, 357–358
 infantile, 355, 357
- Myolipoma of soft tissue, 212–213
- Myopericytoma
 clinical findings, 354
 definition, 354
 imaging, 354–355
- Myositis ossificans, 603
 digits, 247–252
- Myxofibrosarcoma, 293–295, 648
- Myxoid liposarcoma, 232–237
- Myxoid perineurioma, 409, 410
- Myxoid tumors, 108–109
- Myxoinflammatory fibroblastic sarcoma, 286–289
- Myxoma, of jaws, 430–434
- N**
- Nasal glial heterotopia (NGH), 412
- Necrosis, 331
- Necrotic tumors, 108
- Necrotizing fasciitis, 527
- Nephrotic syndrome, 579
- Nerve, lipomatosis of, 208–210
- Nerve-related tumorlike lesions, 16–19
- Nerve sheath tumors
 benign triton tumors, 411

- dermal nerve sheath myxomas, 411
 - ectopic meningiomas, 412
 - granular cell tumors, 411
 - hybrid nerve sheath tumors, 411
 - malignant peripheral
 - clinical presentation, 413
 - epidemiology, 412
 - histology, 412
 - imaging characteristics, 413–417
 - topography, 412
 - nasal glial heterotopia, 412
 - neurofibromas
 - clinical presentation, 406
 - epidemiology, 405
 - histology, 405–406
 - imaging characteristics, 406–408
 - topography, 405
 - neurofibromatoses
 - type 1, 417–418
 - type 2, 418–419
 - perineurioma, 408–410
 - schwannomas
 - clinical presentation, 395–396
 - epidemiology, 394
 - histology, 394–395
 - imaging characteristics, 396–405
 - schwannomas, 394
 - topography, 394
 - schwannomatosis, 419–420
 - solitary circumscribed neuromas, 411
 - Neurofibromas
 - clinical presentation, 406
 - epidemiology, 405
 - histology, 405–406
 - imaging characteristics
 - computed tomography, 406–408
 - magnetic resonance imaging, 408
 - plain radiography, 406
 - ultrasound, 406, 407
 - topography, 405
 - Neurofibromatoses
 - type 1, 417–418
 - type 2, 418–419
 - Neuroma-in-continuity (NIC). *See* Traumatic neuroma
 - Nodular fasciitis, 245–247
 - Non-Hodgkin's lymphomas, 578
 - B-cell, 579, 580
 - diagnosis, 590
 - at left upper arm, 581, 584
 - of quadriceps muscle, 582
 - sciatic nerve, 584
 - Noninvoluting congenital hemangioma (NICH), 366–369
 - Nuchal-type fibroma, 258–261
 - Nuclear medicine, 417
- O**
- Ossifying fibromyxoid tumor (OFMT), 194
 - definition, 439
 - imaging, 440, 441
 - incidence and clinical behavior, 440
 - Ossifying lipoma, 221
 - Osteochondromatosis, secondary, 515
 - Osteoclastoma. *See* Giant cell tumour of soft tissue (GCT-ST)
 - Osteolipoma, 221
 - Osteosarcoma, 596
- P**
- Palmar fibromatosis, 265–266
 - Para-articular chondroma, 516
 - Parachordoma
 - definition, 441–442
 - imaging, 442
 - incidence and clinical behavior, 442
 - Parameniscal cyst, 428–430
 - Paravaginal aggressive angiomyxoma, 434, 435
 - Parkes Weber syndrome, 388
 - Parosteal lipoma, 221–225
 - Partially involuting congenital hemangioma (PICH), 368
 - Particular vascular lesions
 - glomus tumor, 384, 385
 - synovial hemangioma, 385, 386
 - Pathology grading and staging
 - common used grading classifications, 127
 - staging, 127–128
 - Pediatric soft tissue tumors
 - fibromatosis colli, 625
 - fibrosarcoma, 627
 - fluid-fluid levels, 625, 629
 - granuloma annulare, 626
 - imaging
 - MR, 630
 - plain film/CT, 630
 - roles, 624–625
 - ultrasound, 625–626
 - imaging tissue characterization, 630–631
 - infantile hemangioma, 629
 - infantile rhabdomyosarcoma, 628
 - intratumoral signal void, 625, 629
 - multiplicity, 625, 629
 - preferential location of, 624
 - shape, 625, 629
 - synovial sarcoma, 627
 - Pelvis syndrome, 386
 - Percutaneous musculoskeletal biopsy (PMSB), 133
 - Pericytic (perivascular) tumors
 - angioleiomyoma, 358–359
 - glomangiomas, 349–352, 356
 - glomus tumor, 348–349, 355
 - malignant glomus tumor, 352
 - myofibroma and myofibromatosis, 355–358
 - myopericytoma, 354–355
 - US finding
 - angioleiomyoma (vascular leiomyoma/angiomyoma), 21
 - glomus tumor, 20–21
 - WHO classification, 191
 - Perineurioma, 408–410
 - Peripheral arterial aneurysms, 564
 - Peripheral mineralisation, 331, 332

- Peripheral nerve sheath tumors (PNSTs), 393, 396
 US finding, 16
 WHO classification, 193
- Peripheral neurogenic tumors
 nerve-related tumorlike lesions, 16–19
 peripheral nerve sheath tumors, 16
 US finding, 14–16
- Phosphatitic mesenchymal tumor (PMT), 443, 444
- Pigmented villonodular synovitis (PVNS), 11–12, 311, 312
 clinical behaviour and gross findings, 320–321
 differential diagnosis, 322
 epidemiology, 320
 imaging findings, 321–322
 pathology, 321
- Pilomatricoma, 554
 US findings, 29
- Plain films, 630
- Plain radiography
 angiography, 47–48
 bone involvement, 45–47
 location, 42
 radiodensity, 43–45
 rate of growth, 42
 shape and margins, 43
 size, 42
- Plantar fibromatosis, 266–269
- Pleomorphic hyalinizing angiectatic tumor (PHAT)
 in calf, 436
 definition, 435
 in foot, 437
 imaging, 436–438
 incidence and clinical behavior, 435–436
 of proximal upper extremity, 438
- Pleomorphic lipoma, 215–217
- Pleomorphic liposarcomas, 237
- Pleomorphic rhabdomyosarcoma, 348, 350, 352
- Plexiform fibrohistiocytic tumour (PFHT)
 clinical behaviour and gross findings, 329
 differential diagnosis, 330–331
 genetics, 329
 imaging findings, 330
 pathology, 329
- Plexiform neurofibromas, 405, 406, 409
- Positron emission tomography (PET), 646
 characterization and grading, 60–62
 evaluation of disease extent, 62–64
 recurrence, detection of, 66
 response evaluation, 64–65
- Posterior fossa malformations, 386
- Post-therapy fibrosis, 644
- Primitive neuroectodermal tumors (PNET)
 central, 462
 definition, 462
 Ewing's sarcoma, 465
 imaging characteristics
 CT, 467
 MRI, 467
 plain radiography, 466
 ultrasound, 466–467
 incidence and clinical behavior, 465–466
 peripheral, 462, 465
 Schmidt's classification, 465
- Proliferative myositis (and fasciitis), 247
- Proton nuclear MR spectroscopy, 109
- Pseudocapsule, 147
- Pseudogout, 556, 558
- Pseudohypertrophy, of calf muscles, 563–564
- Pseudotumoral lesions
 anatomy variations and muscular anomalies, 524–527
 inflammatory and infectious lesions
 abscess, 528–529
 bursitis, 536
 cellulitis, 527
 diabetic muscle infarction, 535–536
 focal myositis, 535
 granulomatous disorders, 536–541
 lymphedema and lymphangitis, 528
 muscular cystic echinococcosis, 532–534
 necrotizing fasciitis, 527
 pyomyositis, 529–532
 metabolic lesions
 calcific tendinosis, 556–557, 560
 gout and pseudogout, 556, 558, 559
 tumoral calcinosis, 557–562
 miscellaneous
 calf muscles, pseudohypertrophy of, 563–565
 elastofibroma dorsi, 564–568
 Geyser phenomenon, 565, 566
 skin lesions
 epidermal inclusion cysts, 555–557
 granuloma annulare, 554–555
 pilomatricoma, 554
 traumatic nerve lesions
 calcific myonecrosis, 551, 552
 foreign body reactions, 549–551
 hematoma and contusion, 545–549
 hypothenar hammer syndrome, 551–553
 Morton's fibroma, 542–545
 traumatic neuroma, 545
 vascular lesions, 562–563
- Pulmonary metastasectomy, 646
- PVNS. *See* Pigmented villonodular synovitis (PVNS)
- Pyomyositis
 in AIDS patients, 531
 definition, 529
 magnetic resonance imaging, 531
 within right upper arm muscles, 532
 scintigraphy, 532
 stages, 530
Staphylococcus aureus, 530
 treatment, 532
- R**
- Radiography. *See* Plain radiography
- Rapidly involuting congenital hemangioma (RICH), 366
- Rare sweat gland and duct tumors, nonspecific US
 appearance, 32–33
- Reidu–Osler–Weber syndrome, 388
- Retroperitoneal extrarenal angiomyolipoma, 474, 475

- Retroperitoneal lymphoma, 587, 589
- Reverse transcription polymerase chain reaction (RT-PCR), 124
- Revised European American Lymphoma (REAL), 578
- Rhabdomyolysis, 585
- Rhabdomyoma, adult, 345
 - of forearm, 347
- Rhabdomyosarcoma, 623
 - of adductor region, 354
 - alveolar, 347–348, 351
 - clinical findings, 345–348
 - definition, 345
 - embryonal, 347, 353
 - imaging, 348
 - pleomorphic, 348, 350, 352
 - spindle cell/sclerosing, 348
- Rheumatoid nodule, 33
- Round cell sarcomas (RCS), 484
- S**
- Sacral osteomyelitis, 529, 531
- Sarcoidosis, 536–538
- Schwann cells, 393
- Schwannomas
 - ancient, 395, 400, 403
 - anteromedial side, of right knee, 400, 401
 - cellular, 395, 398
 - of chest, 396, 397
 - clinical presentation, 395–396
 - epidemiology, 394
 - flexor surface, of left lower leg, 403
 - histology, 394–395
 - imaging characteristics
 - computed tomography, 396
 - magnetic resonance imaging, 396–405
 - plain radiography, 396
 - ultrasound, 396
 - of left intervertebral foramen, 396, 398
 - melanotic, 395
 - microcystic, 395
 - plexiform, 395
 - of right hand, 396
 - schwannomas, 394
 - topography, 394
- Schwannomatosis
 - definite, 420
 - genetics of, 419
 - imaging findings, 420
 - possible, 420
 - segmental, 420
- Sclerosing epithelioid fibrosarcoma, 299–302
- SH. *See* Synovial hemangioma (SH)
- Short tau inversion recovery (STIR), 643
- Shoulder girdle lipomatosis, 208
- Skeletal muscle tumors
 - extracardiac rhabdomyoma
 - clinical findings, 345
 - definition, 345
 - imaging, 345, 347
 - rhabdomyosarcoma
 - clinical findings, 345–348
 - definition, 345
 - imaging, 348
 - WHO classification, 191
- Skin lesions
 - epidermal inclusion cysts, 555–557
 - granuloma annulare, 554–555
 - pilomatricoma, 554
- Smooth muscle tumors
 - leiomyoma of deep soft tissue
 - clinical findings, 340
 - definition, 340
 - imaging, 341
 - leiomyosarcoma (excluding skin)
 - clinical findings, 341–343
 - definition, 341
 - imaging, 343–345
 - WHO classification, 190–191
- Soft tissue chondroma
 - definition, 604
 - of finger, 605, 606
 - imaging, 605
 - incidence and clinical behavior, 604
- Soft tissue lymphoma
 - classification, 578
 - clinical manifestations, 579
 - differential diagnosis, 590
 - epidemiology, 578
 - imaging
 - nuclear medicine and hybrid, 585–587
 - radiological, 579–585
 - mucosa-associated lymphoid tissue, 578
 - non-Hodgkin's lymphomas, 578
 - pathogenesis, 578–579
 - primary, 577
 - secondary, 577
 - staging, 587–590
- Soft tissue metastases (STM)
 - biopsy, 597–598
 - choroid melanoma, 596
 - clinical features, 594
 - differential diagnosis, 598
 - epidemiology, 593–594
 - imaging diagnosis, 595–597
 - intramuscular metastases, 595
 - osteosarcoma, 596
 - pathophysiological mechanisms, 594
 - prognosis, 598
 - treatment, 599
- Soft tissue mineralization disorders
 - dystrophic calcification, 35
 - ectopic calcifications, 34
 - ectopic ossification, 34
 - physiological biomineralization, 34
 - tumoral calcinosis, 35
 - US findings, 34–35
- Solitary circumscribed neuromas (SCNs), 411
- Solitary fibrous tumor, 641, 642
- Spinal dysraphism, 386

- Spindle cell lipoma, 215–217
- Split-fat sign, 398
- Squamous-cell carcinomas, 594
- Staging
- AJCC/UICC staging system, 145–146
 - distant metastasis, 149–150
 - intra-/extracompartmental tumor growth, 149
 - local staging, 150
 - after inadequate resection, 154
 - bone involvement, 151–152
 - joint invasion, 152–154
 - neurovascular encasement, 151
 - lymph node metastasis, 149
 - MSTS/Enneking staging system, 146
 - rationale, 145
 - surveillance and repeat staging, 154–157
 - tumor depth
 - deep tumors, 148
 - superficial tumors, 147
 - tumor size, 147
- Staphylococcus aureus*, 527
- Static vs. dynamic enhanced MRI, 81
- Stewart-Treves syndrome, 370, 372. *See also* Angiosarcoma
- Subacromion–subdeltoid bursitis, 513
- Superficial leiomyomata, 340. *See also* Leiomyoma, of deep soft tissue
- cutaneous, 340
 - genital, 340
- Superficial soft tissue tumors and tumorlike lesions
- basal cell carcinoma, 29
 - epidermoid cyst, 28–29
 - fat necrosis, 33–34
 - fibroblastic/myofibroblastic tumors, 29–32
 - pilomatricoma, 29
 - rare sweat gland and duct tumors, nonspecific
 - US appearance, 32–33
 - rheumatoid nodule, 33
 - soft tissue mineralization disorders, 34–35
 - synovial sarcoma, 35–36
- US finding, 11
- Suprapatellar recess, 314
- Syndromes associated with vascular lesions
- Kasabach–Merritt syndrome, 386–387
 - Klippel–Trenaunay syndrome, 387–388
 - Maffucci syndrome, 388
 - Parkes Weber syndrome, 388
 - perineal hemangioma, 386
 - posterior fossa malformations, 386
 - Rendu–Osler–Weber syndrome, 388
 - spinal dysraphism, 386
- Synovial chondromatosis, 516
- Synovial hemangioma (SH), 385, 386, 516
- Synovial lesions
- benign cystic lesions
 - arthrosynovial cyst, 496–497
 - Baker's cyst, 496
 - bursa de novo (adventitious bursa), 507–509
 - clinical manifestations, 509–510
 - ganglion (cyst), 497–507
 - imaging, 510–516
 - lipoma arborescens, 516–518
 - malignant tumors around the joints
 - metastatic spread, of cancer, 518
 - synovial sarcoma, 518
 - para-articular chondroma, 516
 - synovial chondromatosis and synovial chondrosarcoma, 516
 - synovial hemangioma, 516
 - synovial membrane, 495
- Synovial osteochondromatosis (SC)
- definition, 605–606
 - of elbow, 606, 610
 - of hip, 606, 608
 - imaging, 606–608
 - incidence and clinical behavior, 606
 - intra-articular, 606, 609
 - primary, 605, 608
 - secondary, 605, 608
 - ultrasound, 606–608
 - US findings, 11
- Synovial sarcoma, 518, 627
- age distribution, 443, 445
 - within ankle joint, 448, 451
 - of back, 446, 447
 - biphasic, 445
 - definition, 443
 - detection of tumor recurrence, 448–451
 - of foot, 447, 448
 - imaging, 446–448
 - incidence and clinical behavior, 443–445
 - of knee, 447, 450
 - localization of, 445
 - medial side of ankle, 449
 - medial to femur with central necrosis, 638–640
 - monophasic epithelial, 445
 - monophasic fibrous, 445
 - pathology, 445–446
 - prognosis, 448–451
 - recurrent, 452
 - treatment, 448–451
 - US findings, 35–36
- T**
- Tail sign, 397
- Target sign, 398
- Technetium-99 m-labeled nuclear scan, 597
- Tendon sheath and joint lipoma, 221
- Tenosynovial giant cell tumour (TSGCT), 11–12
- diffuse-type
 - clinical behaviour and gross findings, 320–321
 - differential diagnosis, 322–323
 - epidemiology, 320
 - genetics, 321
 - imaging findings, 321–322
 - pathology, 321
 - localised type
 - clinical behaviour and gross findings, 314

- differential diagnosis, 320
 - epidemiology, 312–314
 - imaging findings, 315–319, 323–326
 - pathology, 314–315
 - malignant-type
 - clinical behaviour and gross findings, 324
 - genetics, 324
 - imaging findings, 324, 327
 - pathology, 324
 - T2* gradient echo imaging, 78–79
 - Thoracic intimal sarcoma, 475
 - Tissue sampling
 - adequate, 116
 - fixation, 118
 - treatment, fresh material, 116–117
 - Tissue-specific diagnosis
 - imaging parameters
 - computed tomography, 166
 - diagnostic groups of STT, 174, 175
 - fluid-fluid levels, 174
 - intratumoral signal void, 177
 - lesion, 172
 - magnetic resonance imaging, 170
 - morphology, 172, 173
 - plain films, 166
 - ultrasound, 166
 - nonimaging parameters
 - concomitant diseases, 166, 173
 - location, 165, 169–170
 - multiplicity/bilateral lesions, 166
 - patient's age, 165
 - relative prevalence, 165
 - Traumatic nerve lesions
 - calcific myonecrosis, 551, 552
 - foreign body reactions, 549–551
 - hematoma and contusion, 545–549
 - hypothenar hammer syndrome, 551–553
 - Morton's fibroma, 542–545
 - traumatic neuroma, 545, 546
 - Traumatic neuroma, 545–546
 - Tuberculous osteomyelitis, 536, 537
 - Tumoral calcinosis
 - computed tomography, 562
 - definition, 557
 - diagnosis, 562
 - laboratory analysis, 560
 - magnetic resonance imaging, 562
 - pathogenesis, 557
 - radiography, 560
 - radionuclide bone scans, 560
 - sites, 560
 - soft tissue mineralization disorders, 35
 - treatment, 562
 - ultrasound, 560–562
 - Tumor bank, 118–119
 - Tumor necrosis, 596
 - Tumors of uncertain differentiation
 - benign lesions
 - acral fibromyxoma, 428
 - deep (“aggressive”) angiomyxoma, 434–435
 - ectopic hamartomatous thymoma, 436–437
 - intramuscular myxoma (incl. cellular variant), 426–428
 - juxta-articular myxoma, 428–430
 - myxoma, of Jaws, 430–434
 - pleomorphic hyalinizing angiectatic tumor, 435–436
 - classification, 426
 - intermediate tumors (locally aggressive)
 - hemosiderotic fibrolipomatous tumor, 437
 - intermediate tumors (rarely metastasizing)
 - angiomatoid fibrous histiocytoma, 439, 440
 - atypical fibroxanthoma, 437–439
 - mixed tumor, 440, 441
 - ossifying fibromyxoid tumor, 439–441
 - phosphaturic mesenchymal tumor, 443, 444
 - malignant lesions
 - alveolar soft part sarcoma, 454–458
 - clear cell myomelanocytic tumor, 473–475
 - clear cell sarcoma of soft tissue, 458–460
 - desmoplastic small round cell tumor, 462, 464
 - epithelioid sarcoma, 451–454
 - extrarenal rhabdoid tumor, 469–473
 - extraskeletal myxoid chondrosarcoma, 461
 - intimal sarcoma, 475–476
 - malignant mesenchymoma, 461–462
 - PNET/extraskeletal Ewing's sarcoma, 462–471
 - synovial sarcoma, 443–451
 - WHO classification, 193–194
 - T1-weighted imaging (T1-WI)
 - contrast-enhanced MRI, 79
 - unenanced MRI, 73–75
- ## U
- ### Ultrasound (US)
- articular and synovial sheath masses
 - amyloidosis, 12–14
 - synovial osteochondromatosis/synovial chondromatosis, 11
 - tenosynovial giant cell tumor, 11–12
 - characteristics, 5–11
 - ganglion cyst, 27–28
 - lipoma, 24–27
 - pericytic (perivascular) tumors
 - angioleiomyoma (vascular leiomyoma/angiomyoma), 21
 - glomus tumor, 20–21
 - peripheral neurogenic tumors, 14–16
 - nerve-related tumorlike lesions, 16–19
 - peripheral nerve sheath tumors, 16
 - principles, 4
 - superficial soft tissue tumors, 11
 - superficial soft tissue tumors and tumorlike lesions
 - basal cell carcinoma, 29
 - epidermoid cyst, 28–29
 - fat necrosis, 33–34
 - fibroblastic/myofibroblastic tumors, 29–32
 - pilomatricoma, 29

- Ultrasound (US) (*cont.*)
- rare sweat gland and duct tumors, nonspecific US appearance, 32–33
 - rheumatoid nodule, 33
 - soft tissue mineralization disorders, 34–35
 - synovial sarcoma, 35–36
 - tumorlike lesions, 11
 - vascular tumors, 21–24
- Undifferentiated pleomorphic sarcoma (UPS), 328, 483
- of knee, 488, 489
 - of thigh, 486, 487
- Undifferentiated/unclassified sarcoma
- clinical behaviour and gross findings, 485
 - differential diagnosis, 490
 - epidemiology, 484–485
 - epithelioid sarcoma, 483, 484
 - genetics, 485
 - imaging findings, 486–489
 - intralesional haemorrhage, 486, 489
 - pathology, 485
 - pleomorphic sarcoma, 483
 - round cell morphology, 483
 - spindle cell sarcoma, 483
 - of thigh, 486, 488
 - WHO classification, 194–195
- Unenhanced MRI
- fat-suppressed T1-weighted imaging (FS T1-WI), 76–77
 - fluid-sensitive sequences, 77–78
 - T2* gradient echo imaging, 78–79
 - T1-weighted imaging (T1-WI), 73–75
- Union Internationale Contre le Cancer (UICC), 146
- V**
- Varicositas, in pregnant women, 563, 564
- Vascular lesions, 562–563
- Vascular malformations
- arteriovenous, 381–384
 - capillary, 381
 - lymphatic, 376–381
 - venous, 371–379
- Vascular tumors
- angioliomyoma (vascular leiomyoma / angiomyoma), 21–24
 - benign
 - congenital hemangioma, 366–369
 - epithelioid hemangioma, 368
 - infantile hemangioma, 365–368
 - intermediate and malignant vascular tumors
 - angiosarcoma, 370, 371
 - epithelioid hemangioendothelioma, 370
 - kaposiform hemangioendothelioma, 368–369
 - Kaposi's sarcoma, 369–370
- ISSVA classification, 364–365
- malformations
- arteriovenous, 381–384
 - capillary, 381
 - lymphatic, 376–381
 - venous, 371–379
- particular vascular lesions
- glomus tumor, 384, 385
 - synovial hemangioma, 385, 386
- syndromes associated with vascular lesions
- Kasabach–Merritt syndrome, 386–387
 - Klippel–Trenaunay syndrome, 387–388
 - Maffucci syndrome, 388
 - Parkes Weber syndrome, 388
 - perineal hemangioma, 386
 - posterior fossa malformations, 386
 - Rendu–Osler–Weber syndrome, 388
 - spinal dysraphism, 386
 - WHO classification, 191–192, 364
- Vastly undersampled isotropic projection reconstruction (VIPR), 514
- Venous malformations (VMs)
- definition, 371
 - diffuse and infiltrative, 375, 379
 - with fluid-fluid level, 374, 375
 - intramuscular, 373, 374, 376
 - of left plantar region, 371, 373
 - magnetic resonance imaging, 373
 - pathology, 371
 - subcutaneous, 374, 375
 - symptoms, 371
 - ultrasound, 373
- W**
- World Health Organization (WHO) classification, 340, 364
- adipocytic tumors, 188
 - chondro-osseous tumors, 192–193
 - fibroblastic/myofibroblastic tumors, 188–189
 - fibrohistiocytic tumors, 189–190
 - gastrointestinal stromal tumors, 193
 - pericytic (perivascular) tumors, 191
 - peripheral nerve sheath tumors, 193
 - skeletal muscle tumors, 191
 - smooth muscle tumors, 190–191
 - of tumors 2013, 126
 - tumors of uncertain differentiation, 193–194
 - undifferentiated/unclassified sarcoma, 194–195
 - vascular tumors, 191–192