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# Abbreviations

ADEM	Acute disseminated encephalomyelitis	ie	That is
AIDS	Acquired immune deficiency syndrome	incl	Including
ANGIO	Angiography, arteriography	IUD	Intrauterine device
AP	Anteroposterior	IUGR	Intrauterine growth retardation
APVC	Anomalous pulmonary venous connection, total (T) or partial (P)	IVC	Inferior vena cava
ARDS	Adult respiratory distress syndrome	L	Left
ASD	Atrial septal defect	LA	Left atrium
AV	Atrioventricular (communis or canal)	LLL	Left lower lobe
AVM	Arteriovenous malformation	LUL	Left upper lobe
CABG	Coronary artery bypass graft	LV	Left ventricle
CHF	Congestive heart failure	MCTD	Mixed connective tissue disease
CNS	Central nervous system	MEN S.	Multiple endocrine neoplasia syndrome
COPD	Chronic obstructive pulmonary disease	MRI	Magnetic resonance imaging
CPPD	Calcium pyrophosphate dihydrate crystal deposition disease	Occas	Occasionally
CREST S.	Calcinosis-Raynaud's-sclerodactyly- telangiectasia	PA	Posteroanterior
CSF	Cerebrospinal fluid	PDA	Patent ductus arteriosus
CT	Computed tomography	PEEP	Positive end-expiratory pressure
DIP	Distal interphalangeal (joint)	PIE	Pulmonary infiltrate with eosinophilia (a clinical entity almost exclusively of young women)
DISH	Diffuse idiopathic skeletal hyperostosis	PIP	Proximal interphalangeal (joint)
eg	For example	PML	Progressive multifocal leukoencephalopathy
g	Consult Glossary	PNET	Primitive neuroectodermal tumor
GI	Gastrointestinal	PS	Pulmonary stenosis
GU	Genitourinary	pulm	Pulmonary
GYN	Gynecology	R	Right
HADD	Hydroxyapatite deposition disease	RA	Right atrium
HIV	Human immunodeficiency syndrome	RLL	Right lower lobe
IHSS	Idiopathic hypertrophic subaortic stenosis	RML	Right middle lobe

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RUL	Right upper lobe	US	Ultrasound
RV	Right ventricle	VATER S.	Vertebral (or vascular) anomalies; anal anomalies (or auricular defects); tracheoesophageal fistula; esophageal atresia (or ring), renal anomalies (or radial defects, rib anomalies)
S	Syndrome		
SVC	Superior vena cava		
TORCH	Toxoplasmosis, rubella, cytomegalovirus, herpes simplex transplacental fetal infections	VSD	Ventricular septal defect

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# Glossary

**ABSCESS, ABDOMINAL** Abdominal wall, appendiceal, flank, greater or lesser sac, hepatic, pancreatic, psoas, renal, splenic, subhepatic, subphrenic, tuboovarian

**ALVEOLAR PATTERN** See **CONSOLIDATION PATTERN**

**ANEMIA, PRIMARY** Erythroblastosis, hemolytic anemia, pyruvate kinase deficiency, sickle cell disease and variants, spherocytosis, thalassemia and variants

**ANEURYSM** Arteriosclerotic, dissecting, false, mycotic, poststenotic, syphilitic, berry, fusiform, saccular

**ANGIOMA** Arteriovenous malformation, cirroid aneurysm, hemangioma (incl. capillary and cavernous), lymphangioma, varices

**ARDS** Adult respiratory distress syndrome, shock lung, respirator lung, adult hyaline membrane disease, and many other synonyms: A confusing term, widely used and poorly defined, associated with widespread pulmonary involvement

**ARTERIOSCLEROTIC HEART DISEASE** Coronary artery disease

**ARTERIOVENOUS MALFORMATION (AVM)** See **Angioma**

**BLEEDING OR CLOTTING DISORDER** Anticoagulant effect, coagulopathy (eg, disseminated intravascular coagulation {DIC}), hemophilia, Christmas disease, leukemia, purpura (eg, Henoch-Schönlein), thrombocytopenia

**BRONCHOGENIC OR BRONCHIAL CYST OF LUNG**  
A cyst containing air and/or fluid, lined by respiratory mucosa. Unrelated to mediastinal bronchogenic cyst

**CONNECTIVE TISSUE DISEASE (COLLAGEN VASCULAR DISEASE)** Rheumatoid disease, lupus erythematosus, scleroderma, dermatomyositis, polyarteritis nodosa, mixed connective tissue disease (MCTD), CREST syndrome (calcinosis-Raynaud's-sclerodactyl-telangiectasia), Sjögren's syndrome

**CONSOLIDATION PATTERN** Alveolar pattern, air space pattern, peripheral airways pattern: identified by fluffy margins, early coalescence, air bronchogram or alveologram, and butterfly distribution

**DUPLICATION (BRONCHOGENIC OR ENTERIC) CYST OF MEDIASTINUM** Bronchogenic, enteric, or neurenteric cyst: a congenital cyst related to anomalous foregut development. Unrelated to bronchogenic cyst of lung (bronchial cyst)

**EOSINOPHILIC LUNG DISEASE** Acute eosinophilic pneumonia, idiopathic Löffler syndrome; chronic eosinophilic pneumonia; hypereosinophilic syndrome, **PIE** (pulmonary infiltrate with eosinophilia), drug-induced, parasite-induced (tropical pulmonary eosinophilia), fungus induced, eosinophilic lung disease with connective tissue disease and/or vasculitis

**FAT EMBOLISM** Incl. diffuse embolization of fatty bone marrow (after fracture), amniotic fluid, or oily contrast medium

**FUNGUS DISEASE** Aspergillosis, blastomycosis, coccidiomycosis, cryptococcosis (torulosis), moniliasis (candidiasis), histoplasmosis, paracoccidiomycosis (South American blastomycosis), sporotrichosis, zygomycosis (mucormycosis). Actinomycosis and nocard

- diosis have been reclassified as gram-positive bacteria, resembling fungi.
- GASTROINTESTINAL STROMAL TUMOR** Fibroma, leiomyoma, neurofibroma, and their sarcomatous counterparts.
- GLYCOGEN STORAGE DISEASE** von Gierke (Type I), Pompe (Type II), Cori (Type III), McArdle (Type V)
- HAMARTOMA** A benign nodule composed of mature cells that normally occur in the affected part. In the lung it is usually a slow-growing chondroma, sometimes called a hamartochondroma.
- HYDROCARBON ASPIRATION** Aspiration of furniture polish, gasoline, kerosene, lighter fluid, turpentine
- HYPOPLASTIC LEFT HEART SYNDROME** Includes aortic stenosis or atresia, cor triatriatum, hypoplastic aorta, hypoplastic left ventricle, interrupted aortic arch, infantile coarctation, severe mitral stenosis or atresia
- IATROGENIC** Instrumentation; catheterization; intubation; endoscopy; biopsy; instillation of fluid, blood, or drugs
- IMMUNOLOGIC DISORDERS** AIDS, agammaglobulinemia (Bruton S.) or dysgammaglobulinemia, ataxia-telangiectasia S., Bloom S., Buckley S., combined deficiency S., DiGeorge S., chronic granulomatous disease of childhood, Job S.
- INTERSTITIAL FIBROSIS** Synonyms: end-stage (honeycomb) lung, fibrosing alveolitis, Hamman-Rich syndrome, idiopathic interstitial fibrosis, muscular cirrhosis of the lung, usual interstitial pneumonitis (UIP)
- LANGERHANS CELL HISTIOCYTOSIS** Eosinophilic granuloma, Hand-Schüller-Christian disease, Letterer Siwe's disease (nonlipid histiocytosis), formerly called histiocytosis X
- LIPOID PNEUMONIA** Mineral oil granuloma, oil aspiration pneumonia, paraffinoma
- LYMPHOMA** Includes Burkitt's lymphoma, Hodgkin's disease, non-Hodgkin's lymphoma, leukemia (all varieties, including chloroma), pseudolymphoma, Sezary syndrome, angioimmunoblastic lymphadenopathy
- MASS** Tumor, neoplasm, cyst, abscess, hematoma, aneurysm, hernia
- MEDIASTINITIS** Mediastinal abscess, cellulitis, edema, fibrosis, granuloma, phlegmon, acute mediastinitis, chronic sclerosing (fibrosing) mediastinitis
- MUCOPOLYSACCHARIDOSES** Also mucopolidoses and other lysosomal storage diseases (See Gamut J-4)
- MUSCULAR DISORDERS** Duchenne muscular dystrophy, myasthenia gravis, muscular dystrophy, myotonic dystrophy, myotonia congenita, oculopharyngeal myopathy, steroid or thyrotoxic myopathy, visceral myopathy, other myopathies, myotonias, and myositis (See also **NEUROLOGIC AND NEUROMUSCULAR DISORDERS**)
- NEOPLASMS, BENIGN** Adenoma, chemodectoma, chondroma, endometrioma, hamartoma, hemangioma, hemangiopericytoma, lipoma, polyp, pseudotumor, teratoma (See also **SPINDLE CELL TUMOR**)
- NEUROGENIC NEOPLASM** Ganglioneuroma and paraganglioneuroma, ganglioneuroblastoma, neurilemoma, neuroblastoma, neurofibroma, neurosarcoma, schwannoma (neurinoma)
- NEUROLOGIC AND NEUROMUSCULAR DISORDERS** Alzheimer's disease, amyotonia congenita (Oppenheim disease), amyotrophic lateral sclerosis, brain damage, bulbar or pseudobulbar palsy, cerebral palsy, Duchenne syndrome, meningomyelocele, multiple sclerosis, parkinsonism, poliomyelitis, paraplegia, quadriplegia, stroke, syringomyelia, Werdnig-Hoffmann disease (infantile spinal muscular atrophy) (See also **MUSCULAR DISORDERS**)
- PARALYTIC DISORDER** Bulbar paralysis, paraplegia, peripheral paralysis, poliomyelitis, quadriplegia
- PARASITIC DISEASES WITH IMAGING CHANGES** Amebiasis, armillifer infestation, anisakiasis, ascariasis, capillariasis, Chagas' disease (trypanosomiasis), clonorchiasis, cysticercosis, dirofilariasis (heartworm), filariasis, giardiasis, guinea worm infestation, hookworm disease, hydatid disease (echinococcosis), loiasis, malaria, paragonimiasis, schistosomiasis, strongyloidiasis, taeniasis, toxoplasmosis, tropical pulmonary eosinophilia (microfilaria)
- PNEUMOCONIOSIS WITH CONGLOMERATE MASS** Silicosis, coal-worker's pneumoconiosis, asbestosis
- PNEUMONIA** Pneumonia, common bacterial (*Actinomyces*, *E. coli*, *H. influenzae*, *Klebsiella*, *Legionella*, *Mycoplasma*, plague, *Pseudomonas*, staphylococcal, streptococcal); actinomycosis; nocardiosis pneumonia; common viral (eg, chickenpox, Coxsackie, cy-

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tomegalovirus, ECHO virus, influenza, measles) pneumonia; common parasitic (*Pneumocystis carinii*, amebiasis, ascariasis, paragonimiasis, strongyloidiasis, toxoplasmosis, tropical pulmonary eosinophilia (microfilaria) pneumonia, chlamydial (eg, psittacosis) pneumonia; rickettsial (eg, Rocky Mountain spotted fever, Q fever)

**PRIMITIVE NEUROECTODERMAL TUMOR (PNET)**  
Cerebellar medulloblastoma, ependymblastoma, medulloepithelioma, pigmented medulloblastoma, supratentorial PNET (cerebral neuroblastoma, pineoblastoma)

**PSEUDOTUMOR (OFLUNG), INFLAMMATORY** Synonyms: Organized pneumonia, fibroxanthoma, plasma cell granuloma, sclerosing hemangioma

**POLYP** Adenomatous, eosinophilic, hamartomatous, hyperplastic, inflammatory (fibrous, granulomatous), juvenile, papilloma, villous

**SPINDLE CELL TUMOR** Fibroma, leiomyoma, neurofibroma, rhabdomyoma, and their malignant counterparts

**TETRALOGY OF FALLOT** Includes also pentalogy of Fallot (tetralogy of Fallot plus ASD), pseudotruncus arteriosus, pulmonary atresia with VSD and systemic pulmonary collateral arteries, trilog of Fallot (pulmonary stenosis with ASD)

**THYROID MASS** Adenoma, carcinoma, goiter, intrathoracic goiter (substernal, retrosternal), struma, thyroiditis, ectopic thyroid tissue

**VASCULAR RING** Aberrant right subclavian artery, double aortic arch, right aortic arch types I and II

**WEGENER'S GRANULOMATOSIS** Includes also bronchocentric granulomatosis, Churg and Strauss or other granulomatosis, hypersensitivity angiitis of Zeek, lymphomatoid granulomatosis, midline lethal granuloma

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# References

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## GENERAL REFERENCES

1. Burgener FA, Kormano M: *Differential Diagnosis in Conventional Radiology*. (ed 2) New York: Thieme, 1991
2. Burgener FA, Kormano M: *Differential Diagnosis in Computed Tomography*. New York: Thieme, 1996
3. Chapman S, Nakielny R: *Aids to Radiological Differential Diagnosis*. (ed 3) London: WB Saunders, 1995
4. Ebel K-D, Blickman H, Willich E, Richter E: *Differential Diagnosis in Pediatric Radiology*. Stuttgart: Thieme, 1999
5. Eisenberg RL: *Clinical Imaging: An Atlas of Differential Diagnosis*. (ed 3) Philadelphia: Lippincott-Raven, 1997
6. Grainger RG, Allison DJ (eds): *Diagnostic Radiology: An Anglo-American Textbook of Imaging*. (ed 2) Edinburgh: Churchill Livingstone, 1992
7. Keats TE: *Atlas of Normal Roentgen Variants That May Simulate Disease*. (ed 4) Chicago: Year Book, 1988
8. Kirks DR: *Practical Pediatric Imaging*. (ed 3) Philadelphia: Lippincott-Raven, 1998
9. Kreel L: *Outline of Radiology*. New York: Appleton-Century-Crofts, 1971
10. Oh KS, Ledesma-Medina, J, Bender TM: *Practical Gamuts and Differential Diagnosis in Pediatric Radiology*. Chicago: Year Book, 1982
11. Reeder MM: *Reeder and Felson's Gamuts in Radiology*. (ed 3) New York: Springer-Verlag, 1993
12. Silverman FN, Kuhn JP (eds): *Caffey's Pediatric X-ray Diagnosis*. (ed 9) St. Louis: Mosby, 1993
13. Slone RM, Fisher AJ: *Pocket Guide to Body CT Differential Diagnosis*. New York: McGraw-Hill, 1999
14. Sutton D (ed): *Textbook of Radiology and Imaging*. (ed 6) New York: Churchill Livingstone, 1998
15. Swischuk LE: *Imaging of the Newborn, Infant, and Young Child*. (ed 3) Baltimore: Williams & Wilkins, 1989
16. Swischuk LE, John SD: *Differential Diagnosis in Pediatric Radiology*. (ed 2) Baltimore: Williams & Wilkins, 1995
17. Eplick JG, Haskin ME: *Roentgenologic Diagnosis*, vol. 2. (ed 3) Philadelphia: WB Saunders, 1976
18. Weissleder R, Rieumont MJ, Wittenburg J: *Primer of Diagnostic Imaging*. (ed 2) St. Louis, Mosby-Year Book, 1997
19. Wilson JD, et al.: *Harrison's Principles of Internal Medicine*. (ed 12) New York: McGraw-Hill, 1991

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## CONGENITAL SYNDROMES AND BONE DYSPLASIAS

1. Beighton P, et al.: International nomenclature of constitutional diseases of bone. May 1983 revision. *Ann Radiol* 1984;27:275–280
2. Felson B (ed): *Dwarfs and other little people*. *Semin Roentgenol* 1973;8:133–263
3. Gorlin RJ, Cohen MM Jr, Levin LS: *Syndromes of the Head and Neck*. (ed 3) New York: Oxford University Press, 1990
4. Jones KL: *Smith's Recognizable Patterns of Human Malformation*. (ed 5) Philadelphia: WB Saunders, 1997
5. Kozlowski K, Beighton P: *Gamut Index of Skeletal Dysplasias*. Berlin: Springer-Verlag, 1984
6. Spranger JW, Langer LO Jr, Wiedemann H-R: *Bone Dysplasias*. Philadelphia: WB Saunders, 1974, pp 269–273
7. Taybi H, Lachman RS: *Radiology of Syndromes, Metabolic Disorders, and Skeletal Dysplasias*. (ed 4) St. Louis: Mosby-Year Book, 1996
9. Harwood-Nash DCF, Fitz CR: *Neuroradiology in Infants and Children*, vol. 2. St. Louis: Mosby, 1976
10. Hasso AN, Smith DS: The cerebellopontine angle. *Semin Ultrasound CT MR*. 1989;10:280–301.
11. Hatam A, Bergstrom M, Greitz T: Diagnosis of sellar and parasellar lesions by computed tomography. *Neuroradiology* 1979;18:249–258
12. Huckman MS (ed): *ARRS Neuroradiology Categorical Course Syllabus*. Reston: American Roentgen Ray Society, 1992
13. Lane BA, Moseley IF, Theron J: Intracranial tumors. In: Grainger RG, Allison DJ (eds): *Diagnostic Radiology*, vol. 3. Edinburgh: Churchill Livingstone, 1992
14. Lange S, Grumme T, Meese W: *Computerized Tomography of the Brain*. Berlin: Schering Medico-Scientific Book Series, 1980
15. Lee SH, Rao KC: *Cranial Computed Tomography and MRI*. (ed 2) New York: McGraw-Hill, 1987
16. Newton TH, Potts DG: *Radiology of the Skull and Brain*, vol. 1, book 1. St. Louis: Mosby, 1971
17. Newton TH, Hasso AN, Dillon WP (eds): *Modern Neuroradiology*, vol. 3. *Computed Tomography of the Head and Neck*. New York: Raven Press, 1988
18. Osborn AG: *Handbook of Neuroradiology*. St. Louis: Mosby-Year Book, 1991
19. Taveras JM, Wood EH: *Diagnostic Neuroradiology*, vol. 1. (ed 2) Baltimore: Williams & Wilkins, 1976
20. Walker M: Malignant brain tumors—a synopsis. *CA-Cancer J Clin* 1975;25:114–120

## SECTION A: SKULL AND BRAIN

1. Atlas SW: *Magnetic Resonance Imaging of the Brain and Spine*. New York: Raven Press, 1991
2. Barkovich AJ: *Pediatric Neuroimaging*. (ed 3) Philadelphia: Lippincott Williams & Wilkins, 2000
3. Djang WT: Basics of Cerebral Angiography. In: Ravin CE, Cooper C (eds): *Review of Radiology*. Philadelphia: WB Saunders, 1990, pp. 189–191
4. Doyle FH: Radiology of the pituitary fossa. In: Lodge T, Steiner RE (eds): *Recent Advances in Radiology*, vol. 6. New York: Churchill Livingstone, 1979
5. Dubois PJ: Neuro-otology. In: Rosenberg RN (ed): *The Clinical Neurosciences*, vol. 4. New York: Churchill Livingstone, 1984
6. DuBoulay GH: *Principles of X-Ray Diagnosis of the Skull*. (ed 2) London: Butterworths, 1980
7. Eisenberg RL: *Skull and Spine Imaging. An Atlas of Differential Diagnosis*. New York: Raven Press, 1994
8. Enzmann DR: *Imaging of Infections and Inflammations of the CNS: CT, Ultrasound, and NMR*. New York: Raven Press, 1984

## SECTION B: HEAD AND NECK

1. Batsakis JG: *Tumors of the Head and Neck. Clinical and Pathological Considerations*. (ed 2) Baltimore: Williams & Wilkins, 1979
2. Blaschke DP, Osborn AG: The mandible and teeth. In: Bergeron RT, Osborn AG, Som PM (eds): *Head and Neck Imaging Excluding the Brain*. St. Louis: Mosby, 1984
3. Bryan RN, Craig JA: The eye: CT of the orbit. In: Bergeron RT, Osborn AG, Som PM (eds): *Head and Neck Imaging Excluding the Brain*. St. Louis: Mosby, 1984

4. DelBalso AM: Lesions of the jaws. *Semin Ultrasound CT MR*. 1995;16:487–512
5. Farman AG, Nortje CJ, Wood RE: *Oral and Maxillofacial Diagnostic Imaging*. St. Louis: Mosby-Year Book, 1993
6. Hall RE, DelBalso AM, Carter LC: Radiography of the sinonasal tract. In: DelBalso AM: *Maxillofacial Imaging*. Philadelphia: WB Saunders, 1990, pp. 139–207
7. Hasso AN: *MRI Atlas of the Head and Neck*. London: Martin Dunitz, 1993, pp. 58–59
8. Hayden CK Jr, Swischuk LE: Head and neck lesions in children. In: Bergeron RT, Osborn AG, Som PM: *Head and Neck Imaging Excluding the Brain*. St. Louis: Mosby, 1984, pp. 708–715
9. Langlais RP: Radiology of the jaws. In: DelBalso AM: *Maxillofacial Imaging*. Philadelphia: WB Saunders, 1990, pp. 313–373
10. Lufkin R, Borges A, Villablanca P: *Teaching Atlas of Head and Neck Imaging*. New York: Thieme, 2000
11. Peyster RG, Hoover E: *Computed Tomography in Orbital Disease and Neuroophthalmology*. Chicago: Year Book, 1984
12. Prein J, Remagen W, Spiessl B, et al.: *Atlas of Tumors of the Facial Skeleton*. Berlin: Springer-Verlag, 1986
13. Reede DL, Bergeron RT, Osborn AG: CT of the soft tissues of the neck. In: Bergeron RT, Osborn AG, Som PM: *Head and Neck Imaging Excluding the Brain*. St. Louis: Mosby, 1984, pp. 491–530
14. Seifert G, Miehle A, Haubrich J, Chilla R: *Diseases of the Salivary Glands*. New York: Thieme, 1986, pp. 171–318
15. Silvers AR, Som PM: Salivary glands. *Radiol Clin North Am* 1998;36:941–966
16. Slone RM, Fisher AJ: *Pocket Guide to Body CT Differential Diagnosis*. New York: McGraw-Hill, 1999
17. Sobel DF, Salvolini U, Newton TH: Ocular and orbital pathology. In: Newton TH, Hasso AN, Dillon WP (eds): *Modern Neuroradiology*, vol. 3. *Computed Tomography of the Head and Neck*. New York: Raven Press, 1988
18. Som PM, Sanders DE: The salivary glands. In: Bergeron RJ, Osborn AG, Som PM: *Head and Neck Imaging Excluding the Brain*. St. Louis: Mosby, 1984, pp. 186–234
19. Som PM, Biller HF, Lawson W, et al.: Parapharyngeal space masses: an updated protocol based upon 104 cases. *Radiology* 1984;153:149–156
20. Som PM, Curtin HD: *Head and Neck Imaging*. (ed 3) St. Louis: Mosby-Year Book, 1996
21. Stafine EC, Gibilisco JA: *Oral Roentgenographic Diagnosis*. (ed 4) Philadelphia: WB Saunders, 1975
22. Teresi LM, Lufkin RB, Warthan DG, et al.: Parotid masses: MR imaging. *Radiology* 1987;163:405–409
23. Teresi LM, Lufkin RB, Hanafee WN: Magnetic resonance imaging of the larynx. *Radiol Clin North Am* 1989;27:393–406
24. Unger JM: *Handbook of Head and Neck Imaging*. New York: Churchill Livingstone, 1987
25. Valvassori GE, Buckingham RA, Carter BL, Hanafee WN, Mafee MF: *Head and Neck Imaging*. New York: Thieme, 1988
26. Vogl TJ: Chapter 38. In: Stark DD, Bradley WG (eds): *Magnetic Resonance Imaging*. (ed 2) St. Louis: Mosby, 1992
27. Vogl TJ, Balzer J, Mack M, Steger W: *Differential Diagnosis in Head and Neck Imaging*. New York: Thieme, 1999
28. Warpeha RL: Masses in the neck. In: Wood NK, Goaz PW: *Differential Diagnosis of Oral Lesions*. (ed 4) St. Louis: Mosby-Year Book, 1991, pp. 616–637
29. Weissman JL: Imaging of the salivary glands. *Semin Ultrasound CT MR* 1995;16:546–568
30. Wood NK, Goaz PW: *Differential Diagnosis of Oral Lesions*. (ed 4) St. Louis: Mosby-Year Book, 1991

### SECTION C: SPINE AND ITS CONTENTS

1. Daffner D: *Imaging of Vertebral Trauma*. (ed 2) Philadelphia: Lippincott Williams & Wilkins, 1998
2. Du Boulay GH (ed): *A Textbook of X-Ray Diagnosis by British Authors*. *Neuroradiology*. London: Lewis, 1984
3. Epstein BS: Spinal canal mass lesions. *Radiol Clin North Am* 1966;4:185–202
4. Epstein BS: *The Spine*. Philadelphia: Lea & Febiger, 1976



5. Harris JH Jr, Mirvis SE: *The Radiology of Acute Cervical Spine Trauma*. (ed 3) Baltimore: Williams & Wilkins, 1996
6. Kattan KR: *Trauma and No-trauma of the Cervical Spine*. Springfield, IL: Charles C Thomas, 1975
7. Lewtas N: *The Spine and Myelography*. In: Sutton D (ed): *Textbook of Radiology and Imaging*. (ed 5) Edinburgh: Churchill Livingstone, 1987
8. Lombardi G, Passerini A: *Spinal Cord Diseases: A Radiologic and Myelographic Analysis*. Baltimore: Williams & Wilkins, 1964
9. Moseley IF: *Myelography*. In: du Boulay GH (ed): *A Textbook of Radiological Diagnosis*. (ed 5) London: Lewis, 1984
10. Murphey MD, Batnitsky S, Bramble JM: Diagnostic imaging of spinal trauma. *Radiol Clin North Am* 1989;27:855–872
11. Murphey MD, Andrews CL, Flemming DJ, et al.: Primary tumors of the spine: Radiologic-pathologic correlation. *RadioGraphics* 1996;16:1131–1158
12. Silverman FN (ed): *Caffey's Pediatric X-ray Diagnosis*. (ed 8) Chicago: Year Book, 1985
13. Resnick D: *Diagnosis of Bone and Joint Disorders*. (ed 3) Philadelphia: WB Saunders, 1995
14. Schmorl G, Junghanns H: *The Human Spine in Health and Disease*. (ed 2) New York: Grune & Stratton, 1971
15. Stevens JM: The spine and spinal cord. In: Sutton D, Young JWR (eds): *A Short Textbook of Clinical Imaging*. London: Springer-Verlag, 1990, pp. 806–811
16. Taveras JM, Wood EH: *Diagnostic Neuroradiology*. (ed 2) Baltimore: Williams & Wilkins, 1976
17. Wackensheim A: *Roentgen Diagnosis of the Craniovertebral Region*. Berlin: Springer-Verlag, 1974, pp. 363–366
4. Edeiken J, Dalinka M, Krasnick D: *Edeiken's Roentgen Diagnosis of Diseases of Bone*. (ed 4) Baltimore: Williams & Wilkins, 1989
5. Enzinger FM, Weiss SW: *Soft Tissue Tumors*. (ed 3) St. Louis: Mosby, 1995
6. Forrester DM, Brown JC, Nesson JW: *The Radiology of Joint Disease*. (ed 3) Philadelphia: WB Saunders, 1987
7. Green M: *Pediatric Diagnosis*. (ed 6) Philadelphia: WB Saunders, 1998, p. 276
8. Greenfield GB: *Radiology of Bone Diseases*. (ed 5) Philadelphia: Lippincott, 1990
9. Jacobson HG, Siegelman SS: Some miscellaneous solitary bone lesions. *Semin Roentgenol* 1966;1:314–335
10. Jensen P: Chondrocalcinosis and other calcifications. *Radiol Clin North Am* 1988;26:1315–1325
11. Jeung MY, Gangi A, Gasser B, et al.: Imaging of chest wall disorders. *RadioGraphics* 1999;19:617–637
12. Kohler A, Zimmer EA: *Borderlands of the Normal and Early Pathologic in Skeletal Radiology*. New York: Grune & Stratton, 1968
13. Kransdorf MJ, Murphey MD: *Imaging of Soft Tissue Tumors*. Philadelphia: WB Saunders, 1997
14. Kuisk H: *Technique of Lymphography and Principles of Interpretation*. St. Louis: Warren H Green, 1971
15. Lachman RS: *International Nomenclature and Classification of the Osteochondrodysplasias (1997)*. *Pediatr Radiol* 1998;28:737–744
16. Madewell JE, Ragsdale BD, Sweet DE: Radiologic and pathologic analysis of solitary bone lesions. *Radiol Clin North Am* 1981;19:715–748
17. Murray RO, Jacobson HG, Stoker D: *The Radiology of Skeletal Disorders*. (ed 3) Edinburgh: Churchill Livingstone, 1990
18. Nelson SW: Some fundamentals in the radiologic differential diagnosis of solitary bone lesions. *Semin Roentgenol* 1966;1:244–267
19. Oh KS, Ledesma-Medina J, Bender TM: *Practical Gamuts and Differential Diagnosis in Pediatric Radiology*. Chicago: Year Book, 1982, p. 146
20. Ozonoff MB: *Pediatric Orthopedic Radiology*. Philadelphia: WB Saunders, 1992, pp. 234–276

#### **SECTION D: BONE, JOINTS, AND SOFT TISSUES**

1. Beighton P, Cremin BJ: *Sclerosing Bone Dysplasia*. Berlin: Springer-Verlag, 1980
2. Beighton P, et al.: *International Classification of Osteochondrodysplasia*, 1992 (modified)
3. Brower AC: *Arthritis in Black and White*. (ed 2) Philadelphia: WB Saunders, 1997

21. Poznanski AK: Foot manifestations of the congenital malformation syndromes. *Semin Roentgenol* 1970; 5:354–366
22. Poznanski AK, Gam SM, Holt JF: The thumb in the congenital malformation syndromes. *Radiology* 1971; 100:115–129
23. Poznanski AK, Holt JF: The carpals in congenital malformation syndromes. *Am J Radiol* 1971;112: 443–459
24. Poznanski AK: *The Hand in Radiologic Diagnosis.* (ed 2) Philadelphia: WB Saunders, 1984
25. Ragsdale BD, Madewell JE, Sweet DE: Radiologic and pathologic analysis of solitary bone lesions. Part II: Periosteal reactions. *Radiol Clin North Am* 1981; 19:749–783
26. Resnick D, Niwayama G: *Diagnosis of Bone and Joint Disorders.* Philadelphia: WB Saunders, 1981
27. Resnick D: *Diagnosis of Bone and Joint Disorders.* (ed 3) Philadelphia: WB Saunders, 1995
28. Rimoin DL: International Nomenclature and Classification of the Osteochondrodysplasias (1997). *Am J Med Genetics* 1998;79:376–382
29. Seeger LL, Yao L, Eckardt JJ: Surface lesions of bone. *Radiology* 1998;206:17–33
30. Unni KK: *Dahlin's Bone Tumors. General Aspects and Data on 11,087 Cases.* (ed 5) Philadelphia: Lippincott-Raven, 1996
31. Weissman BN: Radiographic evaluation of total joint replacement. In: Kelly WN, Harris ED Jr, Ruddy S, Sledge CB (eds): *Textbook of Rheumatology.* Philadelphia: WB Saunders, 1994
32. Weissman BN: Imaging of total hip replacement. *Radiology* 1997;202:611–623
5. Feigenbaum H: *Echocardiology.* (ed 4) Philadelphia: Lea & Febiger, 1986
6. Felson B (ed): *Congenital heart disease, part I.* *Semin Roentgenol* 1985;20:110, 220
7. Felson B (ed): *Congenital heart disease, part II.* *Semin Roentgenol* 1985;20:200
8. Fowler NO: *Cardiac Diagnosis and Treatment.* (ed 3) Hagerstown, MD: Harper & Row, 1980
9. Gedgudas E, Moller JH, Castaneda-Zuniga WR, et al.: *Cardiovascular Radiology.* Philadelphia: WB Saunders, 1985
10. Goldberg S: *Doppler Echocardiography.* (ed 2) Philadelphia: Lea & Febiger, 1988
11. Kisslo J: *Doppler Color Flow Imaging.* New York: Churchill Livingstone, 1988
12. Lester RG: Radiological concepts in the evolution of heart disease. *Mod Concepts Cardiovasc Dis* 1968; 37:113–118
13. Meszaros WT: *Cardiac Roentgenology.* Springfield, IL: Charles C Thomas, 1969
14. Moes CAF, Freedom RM, Burrows PE: Anomalous pulmonary venous connections. *Semin Roentgenol* 1985;20:134–150
15. Moss AJ, Adams FH, Emmanouilides GC: *Heart Disease in Infants, Children, and Adolescents.* (ed 2) Baltimore: Williams & Wilkins, 1977
16. O'Brien KM: *Congenital Syndromes with Congenital Heart Disease.* *Semin Roentgenol* 1985;20: 104–105
17. Palmer PES, Cockshott WP: *Cardiac Diseases in the Tropics.* In: Palmer PES, Reeder MM: *The Imaging of Tropical Diseases, with Epidemiological, Pathological, and Clinical Correlation.* (ed 2) Heidelberg: Springer-Verlag, 2001
18. Prichard RW: Tumors of the heart: Review of the subject and report of one hundred and fifth cases. *Arch Pathol* 1951;51:98–128
19. Rowe RD, Mehrizi A. *The Neonate with Congenital Heart Disease. Major Problems in Clinical Pediatrics,* vol. 5. Philadelphia: WB Saunders, 1968
20. Seward J, Fajek A, Edwards W, et al.: *Two Dimensional Echocardiographic Atlas.* New York: Springer-Verlag, 1987
21. Spindola-Franco H, Fish BG (eds): *Radiology of the*

## SECTION E: CARDIOVASCULAR

1. Chen JTT: *Essentials of Cardiac Roentgenology.* Boston: Little, Brown, 1987
2. Duncan W: *Color Doppler in Clinical Cardiology.* Philadelphia: WB Saunders, 1988
3. Edwards JE, Carey LS, Neufeld HN, et al.: *Congenital Heart Disease.* Philadelphia: WB Saunders, 1965
4. Elliott LP: *Cardiac Imaging in Infants, Children, and Adults.* Philadelphia: Lippincott, 1991

- 
- Heart: Cardiac Imaging in Infants and Children. New York: Springer-Verlag.
22. Swischuk LE: Plain Film Interpretation in Congenital Heart Disease. (ed 2) Baltimore: Williams & Wilkins, 1979
  23. Tonkin IL: The Infant with Respiratory Distress. In: Elliott LP (ed): Cardiac Imaging in Infants, Children, and Adults. Philadelphia: Lippincott, 1991, p. 777
  24. Viamonte M Jr: Intrathoracic extracardiac shunts. *Semin Roentgenol* 1967;2:342–367
  25. Wesenberg RL: The Newborn Chest. Hagerstown, MD: Harper & Row, 1973
  26. Wilde P, Hartnell GG: Ischemic heart disease. In Sutton D, Young JWR (eds): A Short Textbook of Clinical Imaging. London: Springer-Verlag, 1990, pp. 161–163

## SECTION F: CHEST

1. Felson B, Weinstein AW, Spitz HB: Principles of Chest Roentgenology: A Programmed Text. Philadelphia: WB Saunders, 1965, p. 197
2. Felson B: Disseminated interstitial diseases of the lung. *Ann Radiol* 1966;9:325–345
3. Felson B: Thoracic calcifications. *Chest* 1969;56:330–343
4. Felson B: Chest Roentgenology. Philadelphia: WB Saunders, 1973
5. Felson B: Neoplasms of the trachea and main stem bronchus. *Semin Roentgenol* 1983;18:23–37
6. Fraser RG, Pare PD, Fraser RS: Differential Diagnosis of Diseases of the Chest. Philadelphia: WB Saunders, 1991, pp. 11–20, 25–30
7. Fraser RS, Muller NL, Coleman N, Pare PD (eds): Fraser and Pare: Diagnosis of Diseases of the Chest. (ed 4) Philadelphia: WB Saunders, 1999
8. Gaensler EA: Unilateral hyperlucent lung. In: Simon M, Potchen J, LeMay M: Frontiers of Pulmonary Radiology. New York: Grune & Stratton, 1969
9. Godwin JD, Webb WR, Savoca CJ, et al.: Multiple, thin-walled cystic lesions of the lung. *Am J Roentgenol* 1980;135:593–604
10. Hartman GE, Shochat SJ: Primary pulmonary neoplasms of childhood: A review. *Ann Thorac Surg* 1983;36:108–119
11. Heitzman ER: The Mediastinum: Radiologic Correlation with Anatomy and Pathology. St. Louis: Mosby, 1977
12. Heitzman ER: The Lung: Radiologic-Pathologic Correlations. (ed 2) St. Louis: Mosby, 1984, p. 182
13. Meyer JS, Nicotra JJ: Tumors of the pediatric chest. *Semin Roentgenol* 1998;33:187–198
14. Muller NL: Lecture at 16<sup>th</sup> Masters Diagnostic Radiology Conference, Kauai, Hawaii, 1999
15. Naidich DP, Zerhouni EA, Siegelman SS, Kuhn JP (eds): Computed Tomography and Magnetic Resonance of the Thorax. (ed 2) New York: Raven Press, 1991, pp. 60–136
16. Reed JC: Chest Radiology. Plain Film Patterns and Differential Diagnoses. (ed 4) St. Louis: Mosby-Year Book, 1997, pp. 211–225
17. Rigsby CM, Sostman HD, Matthay RA: Drug-induced lung disease. In: Flenley DC, Petty TL (eds): Recent Advances in Respiratory Medicine. New York: Churchill Livingstone, 1983, pp. 131–158
18. Rivero HJ, Bowen AD, Bender TM, et al.: Radiological evaluation of diaphragm and juxtadiaphragmatic lesions. Scientific exhibit, American Roentgen Ray Society Meeting, Boston, 1985
19. Rosenow EC III, Wilson WR, Cockerill FR III: Pulmonary disease in the immunocompromised host (Part I). *Mayo Clin Proc* 1985;60:473–487
20. Salzman E: Lung Calcifications in X-ray Diagnosis. Springfield, IL: Charles C Thomas, 1968
21. Siegel MJ, Sagel SS, Reed K: The value of computed tomography in the diagnosis and management of pediatric mediastinal abnormalities. *Radiology* 1986;142:149–155
22. Spencer H: Pathology of the lung (Excluding Pulmonary Tuberculosis). (ed 3) New York: Pergamon Press, 1977
23. Strollo DC, Rosado de Christenson M, Rett JR: Primary mediastinal tumors. Part I. Tumors of the inferior mediastinum. *Chest* 1997;112:511–522
24. Strollo DC, Rosado de Christenson M, Rett JR: Primary mediastinal tumors. Part II. Tumors of the middle and posterior mediastinum. *Chest* 1997;112:1344–1357
25. Trapnell DH: The differential diagnosis of linear

- shadows in chest radiographs. *Radiol Clin North Am* 1973;11:77–92
26. Webb WR, Muller NL, Naidich DP: High Resolution CT of the Lung. (ed 3) Philadelphia: Lippincott, Williams & Wilkins, 2001
  27. Wesenberg RL: The Newborn Chest. Hagerstown, MD: Harper & Row, 1973
  28. World Health Organization histological typing of lung tumors. *Am J Clin Pathol* 1982;77:123–136

## SECTION G: GASTROINTESTINAL TRACT AND ABDOMEN

1. Ayers AB: The spleen. In: Grainger RG, Allison DJ: Diagnostic Radiology. An Anglo-American Textbook of Imaging, vol. 3. (ed 2) Edinburgh: Churchill Livingstone, 1992, p. 2408
2. Baker SR, Cho KC: The Abdominal Plain Film with Correlative Imaging. Norwalk, CT: Appleton & Lange, 1998
3. Baron RL, Gore RM: Diffuse liver disease. In: Gore RM, Levine MS: Textbook of Gastrointestinal Radiology. (ed 2) Philadelphia: WB Saunders, 2000, pp. 1590–1638
4. Berk RN, Clemett AR: Radiology of the Gallbladder and Bile Ducts. Philadelphia: WB Saunders, 1977
5. Cheszmar JL: Pancreatic neoplasms. In: Gore RM, Levine MS (eds): Textbook of Gastrointestinal Radiology. (ed 2) Philadelphia: WB Saunders, 2000, pp. 1796–1811
6. Clouse RE, Diamant NE: Motor physiology and motor disorders of the esophagus. In: Feldman M, Scharschmidt BF, Sleisenger MH: Gastrointestinal and Liver Disease. (ed 6) Philadelphia: WB Saunders, 2000, pp. 61–91
7. Cohen SM, Kurtz AB: Biliary sonography. *Radiol Clin North Am* 1991;29:1171–1192
8. Cosgrove DO: Liver and biliary tree. In: Barnett E, Morley P (eds): Clinical Diagnostic Ultrasound. Oxford: Blackwell, 1985, pp. 365–386
9. Eisenberg RL: Gastrointestinal Radiology: A Pattern Approach. (ed 3) Philadelphia: Lippincott, 1996
10. Feldman M, Scharschmidt BF, Sleisenger MH: Gastrointestinal and Liver Disease. (ed 6) Philadelphia: WB Saunders, 2000
11. Fernbach SK: Neonatal gastrointestinal radiology. In: Gore RM, Levine MS (eds): Textbook of Gastrointestinal Radiology. (ed 2) Philadelphia: WB Saunders, 2000, pp. 2042–2073
12. Gelfand DW: Gastrointestinal Radiology. New York: Churchill Livingstone, 1984
13. Goldberg HI, Sheft DJ: Abnormalities in small intestine contour and caliber. *Radiol Clin North Am* 1976;14:461–475
14. Gore RM: Inflammatory disease. In: Margulis AR: Modern Imaging of the Alimentary Tube. New York: Springer-Verlag, 1998, pp. 185–216
15. Gore RM, Miller FH, Yaghmai V: Acquired immunodeficiency syndrome (AIDS) of the abdominal organs; imaging features. *Semin US, CT, and MR* 1998; 19:175–189
16. Gore RM, Levine MS: Textbook of Gastrointestinal Radiology. (ed 2) Philadelphia: WB Saunders, 2000
17. Gore RM: Gallbladder and biliary tract: Differential diagnosis. In: Gore RM, Levine MS: Textbook of Gastrointestinal Radiology. (ed 2) Philadelphia: WB Saunders, 2000, pp. 1408–1414
18. Gore RM: Spleen: Differential diagnosis. In: Gore RM, Levine MS: Textbook of Gastrointestinal Radiology. (ed 2) Philadelphia: WB Saunders, 2000, pp. 1925–1928
19. Gore RM: Pancreas: Differential diagnosis. In: Gore RM, Levine MS (eds): Textbook of Gastrointestinal Radiology, 2<sup>nd</sup> ed. Philadelphia: WB Saunders, 2000, pp. 1836–1843
20. Halpert RD, Feczko PJ: Gastrointestinal Radiology: The Requisites. (ed 2) St. Louis: Mosby-Year Book, 1999
21. Jeffrey RB, Jr: Gastrointestinal tract and peritoneal cavity. In: McGahan JP, Goldberg BB (eds): Diagnostic Ultrasound. Philadelphia: Lippincott-Raven, 1997
22. Jones B: Functional abnormalities of the pharynx. In: Gore RM, Levine MS: Textbook of Gastrointestinal Radiology. (ed 2) Philadelphia: WB Saunders, 2000, pp. 316–328
23. Kelekis NL, Burdeny DA, Semelka RC: Spleen. In: Semelka RC, Ascher SM, Reinhold C (eds): MRI of

- the Abdomen and Pelvis. New York: Wiley-Liss, 1997, pp. 239–256
24. Kirks DR, Merten DF, Grossman H, Bowie JD: Diagnostic imaging of pediatric abdominal masses: An overview. *Radiol Clin North Am* 1981;19: 527–545
  25. Laing FC: The gallbladder and bile ducts. The liver. In: Rumack CM, Wilson SR, Charboneau JW (eds): *Diagnostic Ultrasound*. St. Louis: Mosby, 1998, pp. 175–223
  26. Lefkowitz JH: Pathologic diagnosis of liver disease. In: Zakim D, Boyer TD: *Hepatology*. (ed 3) Philadelphia: WB Saunders, 1996, pp. 844–874
  27. Levine MS: Esophagus: Differential diagnosis. In: Gore RM, Levine MS: *Textbook of Gastrointestinal Radiology*. (ed 2) Philadelphia: WB Saunders, 2000, pp. 509–513
  28. Macari M, Balthazar EJ: CT of bowel wall thickening: Significance and pitfalls of interpretation. *Am J Roentgenol* 200;176:1105–1116
  29. Marshak RH, Lindner AE, Maklansky D: *Radiology of the Colon*. Philadelphia: WB Saunders, 1980
  30. Mathieson JR, Cooperberg PL: The spleen. In: Rumack CM, Wilson SR, Charboneau JW (eds): *Diagnostic Ultrasound*. (ed 2) St. Louis: Mosby, 1998, pp. 155–174
  31. Melicow MM, Uson AC: Palpable abdominal masses in infants and children: A report based on a review of 653 cases.
  32. Mergo PJ, Ros PR: Benign lesions of the liver. *Radiol Clin North Am* 1998;36:319–322
  33. Meyers MA: *Dynamic Radiology of the Abdomen*. (ed 5) New York: Springer-Verlag, 2000
  34. Nemcek AA, Vogelzang RL: Angiography and interventional radiology of the alimentary tract. In: Gore RM, Levine MS (eds): *Textbook of Gastrointestinal Radiology*. (ed 2) Philadelphia: WB Saunders, 2000, pp. 509–511
  35. Nicolas AI, Ros PR: Imaging of the mesentery and omentum. In: Grainger RG, Allison DJ: *Grainger & Allison's Diagnostic Radiology*. (ed 3) New York: Churchill Livingstone, 1997, pp. 1059–1079.
  36. Ott DJ: Motility disorders of the esophagus. In: Gore RM, Levine MS: *Textbook of Gastrointestinal Radiology*. (ed 2) Philadelphia: WB Saunders, 2000, pp. 316–328
  37. Paley MR, Ros PR: Hepatic metastases. *Radiol Clin North Am* 1998;36:349–364
  38. Parulekar SG: Gallbladder and bile ducts. In: McGahan JP, Goldberg BB (eds): *Diagnostic Ultrasound*. Philadelphia: Lippincott-Raven, 1997, chapter 22
  39. Reeders JW, Joosten FB, Rosenbusch G: Radiology of the esophagus. *Radiology* 2000;40:479–493
  40. Rice RP, Thompson WM, Gedgudas RK: The diagnosis and significance of extraluminal gas in the abdomen. *Radiol Clin North Am* 1982;20:819–837
  41. Riley SA, Marsh MN: Maldigestion and malabsorption. In: Feldman M, Scharschmidt BF, Sleisenger MH: *Gastrointestinal and Liver Disease*. (ed 6) Philadelphia: WB Saunders, 2000, pp. 1501–1522
  42. Ros PR: Bubbles and marbles of the belly: Cystic and solid masses of the mesentery and omentum. In: Balfe DM, Levine MS: *RSNA Categorical Course in Diagnostic Radiology: Gastrointestinal*. 1997, pp. 59–66
  43. Ros PR, Taylor HM: Benign and malignant tumors of the liver. In: Gore RM, Levine MS: *Textbook of Gastrointestinal Radiology*. (ed 2) Philadelphia: WB Saunders, 2000, pp. 1487–1568
  44. Ros PR, Taylor HM, Barreda R, et al.: Focal hepatic infections. In: Gore RM, Levine MS: *Textbook of Gastrointestinal Radiology*. (ed 2) Philadelphia: WB Saunders, 2000, pp. 1569–1589
  45. Rosenthal P: Biliary atresia and neonatal disorders of the bile ducts. In: Wyllie R, Hyams JS: *Pediatric Gastrointestinal Disease*. Philadelphia: WB Saunders, 1999, pp. 568–578
  46. Rubesin SE: Pharynx. In: Levine MS, Rubesin SE, Laufer I: *Double Contrast Gastrointestinal Radiology*. (ed 3) Philadelphia: WB Saunders, 2000, pp. 61–91
  47. Rummeny E, Weissleder R, Stark DD, et al.: Primary liver tumors: Diagnosis by MR imaging. *Am J Roentgenol* 1989;152:63–72
  48. Sato M, Ishida H, Konno K, et al.: Liver tumors in children and young patients: Sonographic and color Doppler findings. *Abdom Imaging* 2000;25:596–601
  49. Semelka RC, Kelekis NL: Liver. In: Semelka RC, Ascher SM, Reinhold C (eds): *MRI of the Abdomen and*

- 
- Pelvis: A Text-Atlas. New York: Wiley-Liss, 1997, pp. 19–136
50. Semelka RC (ed): Abdominal-Pelvi MRI. New York: Wiley-Liss, 2002
  51. Shehadi WH: Radiologic examination of the biliary tract. *Radiol Clin North Am* 1966;4.
  52. Siegel MJ: Pediatric Body CT. Philadelphia: Lippincott, Williams & Wilkins, 1999
  53. Silverman PM, Cooper C: Mesenteric and omental lesions. In: Gore RM, Levine MS (eds): *Textbook of Gastrointestinal Radiology*. (ed 2) Philadelphia: WB Saunders, 2000, pp. 1980–1992
  54. Skolnick ML: Guide to the Ultrasound Examination of the Abdomen. New York: Springer-Verlag, 1986
  55. Stephens DH, Sheedy PF, Hattery RR, et al.: Computed tomography of the liver. *Am J Roentgenol* 1977;128:579–590
  56. Taylor HM, Ros PR: Hepatic imaging: An overview. *Radiol Clin North Am* 1998;36:237–245
  57. Urrutia M, Mergo PJ, Ros LH, Torres GM, Ros PR: Cystic masses of the spleen: radiologic-pathologic correlation. *RadioGraphics* 1996;16:107–129
  58. Weill FS: *Ultrasound Diagnosis of Digestive Diseases*. (ed 3 revised) Berlin: Springer-Verlag, 1990, pp. 239–246
  59. Williamson MR: Abdominal ultrasound. In: *Essentials of Ultrasound*. Philadelphia: WB Saunders, 1996, p. 86
  60. Withers CW, Wilson SR: The liver. In: Rumack CM, Wilson SR, Charboneau JW (eds): *Diagnostic Ultrasound*. St. Louis: Mosby, 1998, pp. 87–154
  4. Cochlin DL: Urinary tract. In: McGahan JP, Goldberg BB (eds): *Diagnostic Ultrasound*. Philadelphia: Lippincott-Raven, 1997
  5. Davidson AJ: A systematic approach to the radiologic diagnosis of renal parenchymal disease. In: Pollack HM (ed): *Clinical Urography*. Philadelphia: WB Saunders, 1990
  6. Davidson AJ: *Radiologic Diagnosis of Renal Parenchymal Disease*. Philadelphia: WB Saunders, 1977
  7. Davidson AJ, Hartman DS: Radiology of the Kidney and Urinary Tract. In: *Angiography in Diseases of the Kidney*. Philadelphia: WB Saunders, 1994
  8. Dunnick NR, et al.: *Textbook of Uroradiology*. Baltimore: Williams & Wilkins, 1997
  9. Elkin M: Renal cystic disease: An overview. *Semin Roentgenol* 1975;10:99–102
  10. Elyaderani MK, Gabriele OF: Ultrasound of renal masses. *Semin Ultrasound* 1981;11:21–43
  11. Felson B, Moskowitz M: Renal pseudotumors: The regenerated nodule and other lumps, bumps, and dromedary humps. *Am J Roentgenol* 1969;107:720–729
  12. Felson B (ed): Renal cystic disease. *Semin Roentgenol* 1975;10:93
  13. Fleischer AC, James AE: *Introduction to Diagnostic Sonography*. New York: John Wiley & Sons, 1980
  14. Fleischer AC, Boehm FH, James AE Jr: *Ultrasonography in Obstetrics and Gynaecology: Obstetric Radiology*. In: Grainger RG, Allison DJ: *Diagnostic Radiology*. (ed 2) Edinburgh: Churchill Livingstone, 1992, pp. 1809–1819
  15. Friedenberg RM, Dunbar JS: Excretory urography. In: Pollack HM (ed): *Clinical Urography*. Philadelphia: WB Saunders, 1990, pp. 101–255
  16. Friedland GW, et al. (eds): *Uroradiology: An Integrated Approach*. London: Churchill Livingstone, 1983
  17. Goldman SM, Gatewood OMB: Neoplasms of the renal collecting system, pelvis, and ureters. In: Pollack HM (ed): *Clinical Urography*. Philadelphia: WB Saunders, 1990
  18. Hartman DS: Overview of renal cystic disease. In: Pollack HM, McClennan BL (eds): *Clinical Urogra-*

## **SECTION H: GENITOURINARY TRACT, RETROPERITONEUM, AND GYNECOLOGICAL ULTRASOUND**

1. Amis ES Jr, Hartman DS: Renal ultrasonography 1984: A practical overview. *Radiol Clin North Am* 1984;22:315–332
2. Bissett RAL, Khan AN: *Differential Diagnosis in Abdominal Ultrasound*. London: Baillière Tindall, 1990
3. Bree RL, Silver TM: Sonography of bladder and perivesical abnormalities. *Am J Roentgenol* 1981;136:1101–1104

- 
- phy. (ed 2) Philadelphia: WB Saunders, 2000, pp. 1245–1250
19. Heiken JP: Tumors of the testis and testicular adnexa. World Health Organization Classification of Testicular Germ Cell Tumors. In: Pollack HM, McClennan BL (eds): *Clinical Urography*. (ed 2) Philadelphia: WB Saunders, 2000, pp. 1716–1741
  20. Johnstrude IS, Jackson DC: *A Practical Approach to Angiography*. Boston: Little, Brown, 1979
  21. Koop CE: Abdominal mass in the newborn infant. *N Engl J Med* 1973;289:569–571
  22. Kuligowska E, Pomeroy OH: Prostate. In: McGahan JP, Goldberg BB (eds): *Diagnostic Ultrasound*. Philadelphia: Lippincott-Raven, 1997
  23. Levine D: Female pelvis. In: McGahan JP, Goldberg BB (eds): *Diagnostic Ultrasound*. Philadelphia: Lippincott-Raven, 1997
  24. Levine E, King BF Jr: Adult malignant renal parenchymal neoplasms. In: Pollack HM, McClennan BL (eds): *Clinical Urography*. (ed 2) Philadelphia: WB Saunders, 2000, pp. 1440–1559
  25. Madewell JE, Hartman DS, Lichtenstein JE: Radiologic-pathologic correlations in cystic disease of the kidney. *Radiol Clin North Am* 1979;17:261–279
  26. Malik RS: Calculus disease of the genitourinary tract. In: Witten DM, Myers GH Jr, Utz DC: *Emmett's Clinical Urography*. (ed 4) Philadelphia: WB Saunders, 1977, p. 1177
  27. Margolin EG, Cohen LH: Genitourinary calcification: An overview. *Semin Roentgenol* 1982;17:95–100
  28. Mellins HZ: Cystic dilatations of the upper urinary tract: A radiologist developmental model. *Radiology* 1985;153:291–301
  29. Morillo G: The differential diagnosis of the unilateral small kidney. *CRC Crit Rev Diagn Imaging* 1979;11:261–296
  30. Newhouse JH, Pfister RC: The nephrogram. *Radiol Clin North Am* 1979;17:213–225
  31. Ney C, Friedenber R: *Radiographic Atlas of the Genitourinary System*. Philadelphia: Lippincott, 1966
  32. Paltiel HJ, Kirks DR: Pediatric urological neoplasms. In: Pollack HM, McClennan BL (eds): *Clinical Urography*. (ed 2) Philadelphia: WB Saunders, 2000, pp. 1743–1765
  33. Parker M: Diagnostic skills. In: Friedland GW, Filly R, Goris ML, et al.: *Uroradiology: An Integrated Approach*. New York: Churchill Livingstone, 1983, p. 1654
  34. Pollack HM, McClennan BL (eds): *Clinical Urography*. (ed 2) Philadelphia: WB Saunders, 2000
  35. Ralls PW, Halls J: Hydronephrosis, renal cystic disease, and renal parenchymal disease. *Semin Ultrasound* 1981;11:49–60
  36. Scoutt LM, Burns P, Brown JL, et al.: Ultrasound evaluation of the urinary tract. In: Pollack HM, McClennan BL: *Clinical Urography*. (ed 2) Philadelphia: WB Saunders, 2000, pp. 459–469
  37. Spirnak JP, Resnick MI, Banner MP: Calculous disease of the urinary tract: General considerations. In: Pollack HM (ed): *Clinical Urography*. Philadelphia: WB Saunders, 1990
  38. Tank ES, Poznanski AK, Holt JF: The radiologic discrimination of abdominal masses in infants. *J Urol* 1973;109:128–132
  39. Thurston W, Wilson SR: The urinary tract. In: Rummack CM, Wilson SR, Charboneau JW (eds): *Diagnostic Ultrasound*. St. Louis: Mosby, 1998, pp. 382–384
  40. Wedge JJ, Grosfeld JL, Smith JP: Abdominal masses in the newborn: 63 cases. *J Urol* 1971;106:770–775
  41. Williamson B Jr, King BF Jr: Benign neoplasms of the renal parenchyma. In: Pollack HM, McClennan BL (eds): *Clinical Urography*. (ed 2) Philadelphia: WB Saunders, 2000, pp. 1414–1439
  42. Williamson MR: Renal ultrasound. In: *Essentials of Ultrasound*. Philadelphia: WB Saunders, 1996
  43. Witten DM, Myers GH Jr, Utz DC: *Emmett's Clinical Urography*. (ed 4) Philadelphia: WB Saunders, 1996
  44. Zagoria RJ, Tung GA: *Genitourinary Radiology: The Requisites*. St. Louis: Mosby, 1997

## SECTION I: MAMMOGRAPHY

1. Bassett LW: Mammographic analysis of calcifications. *Radiol Clin North Am* 1992;30:93–105

2. Bassett LW, Jackson VP, Jahan R, Fu YS, Gold RH: Diagnosis of Diseases of the Breast. Philadelphia: WB Saunders, 1997, pp. 461–500
3. Bassett LW, Jackson VP, Jahan R, Fu YS, Gold RH: The male breast. In: Diagnosis of Diseases of the Breast. Philadelphia: WB Saunders, 1997, pp. 501–518
4. Bland KI, Copeland EM: The unknown primary presenting with axillary adenopathy. In: The Breast: Comprehensive Management of Benign and Malignant Diseases, vol. 2 (ed 2) Philadelphia: WB Saunders, 1991, pp. 1447–1452
5. DeParedes ES: Atlas of Film Screen Mammography. (ed 2) Baltimore: Williams & Wilkins, 1992, p. 134
6. Dershaw DD (ed): Interventional Breast Procedures. Edinburgh: Churchill Livingstone, 1996
7. Feig SA: Breast masses: Mammographic and sonographic evaluation. *Radiol Clin North Am* 1992; 30:67–92
8. Friedrich M, Sickles EA: Radiologic Diagnosis of Breast Diseases. New York: Springer-Verlag, 2000
9. Hoeffken W, Lanyi M: Mammography. Transl. by Rigler LG, et al. Philadelphia: WB Saunders, 1977
10. Kopans DB: The male breast. In: Breast Imaging. (ed 2) Philadelphia: Lippincott-Raven, 1998
11. Kopans DB: Breast Imaging. (ed 2) Philadelphia: Lippincott-Raven, 1998
12. Lanyi M: Differential diagnosis of microcalcifications. In: Friedrich M, Sickles EA (eds): Radiological Diagnosis of Breast Diseases. New York: Springer, 2000
13. Powell DE, Stelling CB: The Diagnosis and Detection of Breast Disease. Stromal, Vascular, Hematolymphoid, and Metastatic Breast Lesions. St. Louis: Mosby-Year Book, 1994
14. Sickles EA: Breast calcification: Mammographic evaluation. *Radiology* 1986;160:289–293
15. Sickles EA: Periodic mammographic following of probably benign lesions: results in 3,184 consecutive cases. *Radiology* 1991;179:463–468
16. Sickles EA: Non-palpable, circumscribed non-calcified solid breast masses: likelihood of malignancy based on lesion size and age of patient. *Radiology* 1994;192:439–442
17. Smathers RL: Mammography Diagnosis and Intervention CD-ROM. Moraga, CA: Medical Interactive, 1995
18. Smathers RL: Mammography for Technicians CD-ROM. Moraga, CA: Medical Interactive, 2000
19. Stavros A: Breast Ultrasound. Philadelphia: Lippincott, Williams & Wilkins, 2002
20. Tabar L, Dean PB: Teaching Atlas of Mammography, (ed 3) New York: Thieme, 2001, pp. 18–91
21. Tavassoli FA: Pathology of the Breast. (ed 2) New York: McGraw-Hill, 1999

## **SECTION J: TROPICAL IMAGING AND MISCELLANEOUS**

1. Doppman JL: Overview: Multiple endocrine syndromes—A nightmare for the endocrinologist radiologist. *Semin Roentgenol* 1985;20:7–16
2. Palmer PES, Reeder MM: The Imaging of Tropical Diseases, with Epidemiological, Pathological, and Clinical Correlation. (ed 2) Heidelberg: Springer-Verlag, 2001, pp. XIX–XXIV
3. Pear BL: Radiographic studies of amyloidosis. *CRC Crit Rev Radiol Sci* 1972;3:425–452

## **SECTION M: MRI**

1. Boyko OB: Adult brain tumors. In: Stark DD, Bradley WG (eds): Magnetic Resonance Imaging. (ed 3) St. Louis: Mosby, 1999, pp. 1231–1254
2. Bradley WG: Hemorrhage. In: Stark DD, Bradley WG (eds): Magnetic Resonance Imaging. (ed 3) St. Louis: Mosby, 1999, pp. 1329–1346
3. Ferris EJ, Levine HL: Cerebral arteritis: Classification. *Radiology* 1973;109:327–341
4. Grainger RG, Allison DJ (eds): Diagnostic Radiology. An Anglo-American Textbook of Imaging, vol. 3 (ed 2) Edinburgh: Churchill Livingstone, 1992, pp. 1993–1994
5. Mortelet KJ, Ros PR: Cystic focal liver lesion in the adult: Differential CT and MR imaging features. *RadioGraphics* 2001;21:895–910
6. Pomeranz SJ: Gamuts and Pearls in MRI. Cincinnati: MRI Education Foundation, Inc., 1990



- 
7. Semelka RC (ed): MR imaging of the liver II. Diseases. *Magnet Reson Imaging Clin North Am* 10:1
  8. Semelka RC (ed): *Abdominal-Pelvic MRI*. New York: Wiley-Liss, 2002
  9. Siegelman ES, Outwater EK: Tissue characterization in the female pelvis by means of MR imaging. *Radiology* 1999;212:5–18
  10. Stark DD, Bradley WG (eds): *Magnetic Resonance Imaging*. (ed 3) St. Louis: Mosby, 1999
  11. Stevens JM: The Spine and spinal cord. In: Sutton D, Young JWR (eds): *A Short Textbook of Clinical Imaging*. London: Springer-Verlag, 1990, pp. 791–802
  12. Zimmerman RA, Bilaniuk LT: Pediatric cerebral anomalies. In: Stark DD, Bradley WG (eds): *Magnetic Resonance Imaging*. (ed 3) St. Louis: Mosby, 1999, pp. 1403–1424

## SECTION O: OBSTETRICAL ULTRASOUND

1. Carlson DE: Growth disturbances. Large-for-date and small-for-date fetuses. In: McGahan JP, Goldberg BB (eds): *Diagnostic Ultrasound*. Philadelphia: Lippincott-Raven, 1997
2. Fleischer AC, James AE Jr: *Diagnostic Sonography. Principles and Clinical Applications*. Philadelphia: WB Saunders, 1989
3. Fleischer AC, Boehm FH, James AE Jr: Ultrasonography in obstetrics and gynaecology: Obstetric radiology. In: Grainger RG, Allison DJ: *Diagnostic Radiology*. (ed 2) Edinburgh: Churchill Livingstone, 1992, pp. 1809–1819
4. Goldstein RB: Fetal thorax. In: McGahan JP, Goldberg BB (eds): *Obstetrical Ultrasound*. Philadelphia: Lippincott-Raven, 1997
5. McGahan JP, Thurmond AS: Fetal head and brain. In: McGahan JP, Goldberg BB (eds): *Diagnostic Obstetrical Ultrasound*. Philadelphia: Lippincott-Raven, 1997
6. Nyberg DA, et al.: Cerebral malformations. In: Nyberg DA, Mahoney BS, Pretorius DH (eds): *Diagnostic Ultrasound of Fetal Anomalies. Text and Atlas*. Chicago: Year Book, 1993
7. Porto M, McGahan JP: The fetal abdomen and pelvis. In: McGahan JP, Porto M (eds): *Diagnostic Obstetrical Ultrasound*. Philadelphia: Lippincott, 1994
8. Williamson MR: Obstetrical ultrasound. In: *Essentials of Ultrasound*. Philadelphia: WB Saunders, 1996, p. 180

## GENERAL ULTRASOUND

1. Abbitt PL: *Ultrasound: A Pattern Approach*. New York: McGraw-Hill, 1995
2. McGahan JP, Goldberg BB (eds): *Diagnostic Ultrasound*. Philadelphia: Lippincott-Raven, 1997
3. Rumack CM, Nilson SR, Charboneau JW (eds): *Diagnostic Ultrasound*. (ed 2) St. Louis: Mosby, 1998
4. Siegel MJ: *Pediatric Sonography*. (ed 3) Philadelphia: Lippincott, Williams & Wilkins, 2002
5. Skolnick ML: *Guide to the Ultrasound Examination of the Abdomen*. New York: Springer-Verlag, 1986
6. Stavros A: *Breast Ultrasound*. Philadelphia: Lippincott, Williams & Wilkins, 2002
7. Weill FS: *Ultrasound Diagnosis of Digestive Diseases*. (ed 3 revised) Berlin: Springer-Verlag, 1990, pp. 239–246
8. Williamson MR: Abdominal ultrasound. In: *Essentials of Ultrasound*. Philadelphia: WB Saunders, 1996, p. 86

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# Index

Gamut numbers are in boldface, followed by page numbers in regular type.

## Abdomen

- complications of AIDS in, **G-261**, 746
- fat density in, on CT, **G-258**, 744
- large fetal, during last trimester, on sonography, **O-22**, 940
- miscellaneous gamuts, **G-253 to G-261**, 742–746
- “pseudokidney” or “bull’s-eye” sign in, on ultrasound, **G-260**, 745

## Abdominal

- air or gas, **G-236 to G-246**, 733–737
- aorta or its branches, aneurysm of, **H-127**, 814
- calcification, **G-247-1 to G-252**, 738–741
  - with concretion or annular morphology, **G-250**, 740–741
  - congenital syndromes with, **G-247-2**, 738–739
  - in infant or child, **G-247-1**, 738
  - nonvisceral, **G-248**, 739–740
  - that layer in upright position, **G-249**, 740
  - widespread, **G-251**, 741
- CT, abscess mimics on, **G-244-S**, 737
- disease, pleural effusion associated with, **F-117**, 585
- gas, decreased
  - in adult, **G-246**, 737
  - in newborn, **G-245**, 737
- gas pocket, large, **G-241**, 735–736
- lesions on MRI, **M-141-1 to M-158-3**, 916–930
- mass
  - cystic, in fetus or newborn on ultrasound, **G-254**, 742
  - lower, in neonate or child, **G-256**, **H-137**, 743–744, 818–819
  - upper, in neonate or child, **G-255**, 742–743
  - wall, **G-253**, 742
- vessels, abnormal, on angiography, **G-260**, 745
- wall, calcification, **G-252**, 741

## Abscess

- abdominal, **G-242**, 736
- lung, predisposing factors for, **F-47-S**, 533
- mediastinal, **F-102**, 575–576
- mimics on abdominal CT, **G-244-S**, 737
- pelvic, **G-242**, 736
- pericolic, **G-89**, 660–661
- perinephric, **H-55-2**, 782
- right anterior pararenal space, **G-243**, 736

## Absence

- odontoid (dens), **C-8**, 195–196
- of phalanx, digit, hand, or foot, **D-129-1**, **D-129-2**, 345–346
- unilateral, of renal outline, **H-5**, 757

## Absent

- fold pattern in duodenum and small bowel, **G-39**, 632
- pedicle, **C-40-1**, 211
- thymus in infant, **F-96**, 572
- Accessory carpal or tarsal ossicles, congenital syndromes with, **D-156**, 364
- Accessory epiphyses, **D-18**, 258–259
- Acetabular angle, congenital syndromes with flat or decreased, **D-194-1**, **D-194-2**, 391, 392

## Achalasia

- cricopharyngeal, **G-1**, 611
- of esophagus, **G-3**, 612–613
- Acro-osteolysis, **D-127-1 to D-127-2**, 343–344
  - acquired, confined to one digit, **D-127-2**, 344
- Acro-osteosclerosis, **D-128**, 345
- Acromelia, **D-142**, 354–355
- Acromelic dwarfism (distal segment shortening-hands, feet), **D-5-3**, 248

## Addison’s disease, **H-125**, 813

## Admixture lesion, in congenital heart disease, **E-8**, 454

## Adontia, **B-64**, 144–145

## Adrenal, **H-118 to H-126-S2**, 810–813

- calcification, **H-123**, 812
- enlargement, bilateral, **H-119**, 811
- insufficiency, **H-125**, 813
- mass, **M-125**, 911
- mass or enlargement, unilateral, **H-118**, 810–811

## AIDS

- complications of
  - in central nervous system, **A-119**, 94
  - in gastrointestinal tract and abdomen, **G-261**, 746
- periventricular disease in, **M-10-S1**, 877
- pulmonary disease in, **F-77**, 557

## Air

- in esophagus, **G-4**, 613

- Air (*continued*)  
 or fat lucency, intracranial, on plain films, CT, or MRI, **A-91-1**, **A-91-2**, 77  
 space patterns (see Consolidation (alveolar, air space) patterns) **F-1-S to F-16**, **F-26**, 499–509, 515–516  
 trapping, lobar, **F-54**, 537
- Airway obstruction, upper, in a child, **B-123**, 181
- Allergic alveolitis, extrinsic, **F-69**, 544–545
- Alveolar  
 disease, roentgen signs of, **F-1-S**, 499  
 patterns (see Consolidation (alveolar, air space) patterns) **F-1-S to F-16**, 499–509
- Alveolitis, extrinsic allergic, **F-69**, 544–545
- Amine precursor uptake and decarboxylation syndrome, **J-5-S1**, 858–859
- Amputation  
 infundibular, focal or diffuse, **H-21**, 765–766  
 of phalanx, digit, hand, or foot, **D-129-1**, **D-129-2**, 345–346
- Amyloidosis, disorders associated with, **J-3-S**, 857–858
- Anechoic liver lesions, focal, on ultrasound, **G-173**, 704–705
- Aneurysm  
 of abdominal aorta or its branches, **H-127**, 814  
 of aorta and other major arteries, **E-63**, 486–487  
 of coronary artery, **E-65**, 487–488  
 dissecting, of ascending aorta or arch, **E-64**, 487  
 pulmonary artery, **E-55**, 482  
 renal, **E-71**, 490
- Aneurysmal bone cyst, precursor lesions of, **D-80-S3**, 311
- Angiocardiography, filling defect in right ventricle on, **E-30**, 467
- Angiographic abnormality, pancreatic, **G-244-S**, 737
- Angiography  
 abnormal abdominal vessels on, **G-260**, 745  
 arteritis and other cerebral arterial disease on, **A-102**, **A-103**, 85  
 avascular lesions of liver on, **G-171**, 703  
 brain, **A-101 to A-108**, 84–87  
 cerebral (see Cerebral angiography)  
 cerebral infarction (stroke) on CT or MRI or, **A-98**, 81–82  
 hepatic vein thromboembolism or obstruction on, **G-189**, 711  
 intracerebral hemorrhage or hematoma on CT or MRI or, **A-99**, 82–83  
 pattern analysis of cerebral vessels on, **A-101**, 84  
 renal (see Renal angiography)  
 splenic vein obstruction on, **G-212**, 722  
 systemic to pulmonary vascular shunt on, **E-60**, 485  
 vascular lesions of liver on, **G-171**, **G-172**, 703, 704
- Anisodondyly, **C-16**, 200
- Ankles  
 lateral pain, chronic, on MRI, **M-140-S**, 916  
 well-defined solitary or multiple lucent defects in bones of, **D-151**, 361–362
- Annular lesion of colon, **G-85**, 657–658
- Anterior canal, prominent (central vein groove) of vertebral body, **C-14**, 199
- Antral, combined gastric, and duodenal disease, **G-29**, 627
- Antrum of stomach, narrowing or deformity of, **G-28**, 626–627
- Anus, diseases common to tropics and developing countries, **J-1-S**, 851–855
- Aorta  
 aneurysm of, and other major arteries, **E-63**, 486–487  
 ascending (see Ascending aorta or aortic arch)  
 diseases common to tropics and developing countries, **J-1-S**, 851–855  
 Aortic arch (see also Ascending aorta or aortic arch)  
 anomalies of, **E-21-S**, 462  
 congenital heart disease associated with anterior right, **E-22**, 463  
 Aortic insufficiency, **E-35**, 470–471  
 Aperistalsis, **G-2**, 611–612  
 Apex, erosion of, petrous, **A-28**, 28  
 Aphthoid ulcers in small bowel or colon, **G-67**, 646–647  
 Aplasia, of radius or thumb, **D-161**, 368–369  
 Aplastic, clavicle, **D-172-1**, 375  
 Appendiceal lesion or mass adjacent to appendix, **G-81**, 655–656  
 Appendix, **G-81**, **G-82-S**, 655–656  
 appendiceal lesion or mass adjacent to, **G-81**, 655–656  
 congenital anomalies and variations of, **G-82-S**, 656  
 “Apple core” lesion of colon, **G-85**, 657–658  
 Apudoma syndrome, **J-5-S1**, 858–859  
 Arachnodactyly, **D-140**, 353
- Arterial  
 communication in thorax, anomalous, **E-24**, 463–464  
 disease, cerebral, on angiography, **A-102**, **A-103**, 85  
 stenosis and thrombosis, **E-66**, 488
- Arteries, aneurysm of aorta and other major, **E-63**, 486–487
- Arteriography  
 celiac, superior mesenteric, or subselective, **G-224**, 727  
 splenic, abnormality on, **G-211**, 721
- Arteriovenous shunting, intracranial, on cerebral angiography, **A-104**, 86
- Arteritis, cerebral, on angiography, **A-102**, **A-103**, 85
- Arthralgias, **D-217**, 406–407
- Arthritis  
 associated with periostitis, **D-232**, 415  
 classification of juvenile chronic, **D-219-S**, 407  
 degenerative, in young adult, **D-220**, 407–408  
 diseases common to tropics and developing countries, **J-1-S**, 851–855  
 with little or no osteoporosis, **D-229**, 414  
 with multiple subluxations, **D-230**, 414  
 occurring predominantly in men, **D-216**, 406  
 with osteoporosis, **D-228**, 413  
 rheumatoid-like, **D-218**, 407  
 with soft tissue nodules, **D-235**, 415–416  
 with “swan-neck” deformity, **D-231**, 414  
 transient, **D-217**, 406–407
- Arthrography, multiple filling defects in knees or other joints on, **D-240**, 418
- Arthropathy, neurotrophic, **D-223**, 410
- Articular cartilage, calcification in, **D-243**, 419–420
- Ascending aorta or aortic arch  
 predisposing causes of dissecting aneurysm of, **E-64**, 487  
 prominent, **E-62**, 486  
 small, **E-61**, 485–486
- Ascites  
 causes of, **G-233**, **G-234**, 730–731, 732  
 chylous or lymphatic, **G-235**, 732–733  
 fetal, on sonography, **O-23**, 940–941
- Aseptic necrosis (see Avascular necrosis), **D-48**, 284–285
- Aspiration pneumonia in child, chronic, **F-7**, 502
- Asymmetry  
 of nasal cavity, **B-37**, 124–125

- in size of bone or limb (hemihypertrophy or hemiatrophy), localized or generalized, **D-13**, 254–255
- in size of hand bones, **D-147-1 to D-147-3**, 358–359
- Atelectasis
- lobar or segmental, **F-5**, 500–501
  - small pleural effusion with subsegmental, **F-115**, 584
- Atlanto-axial subluxation or instability, **C-7-1**, 194
- congenital syndromes with, **C-7-2**, 194–195
- Atrial level
- right to left shunt at, **E-10**, 456
  - shunts, complicated, **E-10-S**, 456
- Atrophy
- bone, **D-42**, 277–278
  - spinal cord, **C-60**, 222
  - Sudeck's, **D-42**, 277–278
- Auditory canal
- tumor, external, **B-35**, 123–124
- Auditory meatus, internal, erosion or widening of, **A-29**, 28–29
- Avascular lesions, of liver on angiography, contrast-enhanced CT, or MRI, **G-171**, 703
- Avascular necrosis, **D-48**, 284–285
- sites of predilection and eponyms for, **D-48-S**, 285
- Avascular renal mass, **H-61**, 786
- Avascular zone near brain surface on cerebral angiography, **A-106**, 86–87
- Avulsion injuries, sites of, **D-109-S**, 330
- Azygosophageal recess, abnormality of, especially on CT, **F-98**, 573
- Azygos vein dilatation, **E-69**, 489
- Baker's (popliteal) cyst**, **D-237**, 416–417
- Ballooned bones, **D-12**, 253
- Barium
- double tracking of, in distal colon, **G-90**, 661
  - residual intestinal, after gastrointestinal study, **G-75**, 652
  - retention of, in hypopharynx, **G-1**, 611
  - study, rectal disease on, **G-100**, 666–667
- Basal ganglia
- calcification, **A-49**, 40
  - disease, **M-21**, **M-44**, 880–881, 887
- Basilar cisterns
- increased density within, on nonenhanced CT scan, **A-90-1**, 76
  - intense enhancement of, on CT, **A-90-2**, 76
- Basilar invagination, **A-12**, 16–17
- with thickening of skull vault, **A-13**, 17
- Battered child, clues to, **D-95-S**, 321
- Beaked vertebrae in child, **C-21**, 202–203
- Biconcave (“fish”) vertebrae, **C-19**, 201–202
- Biliary ducts, dilatation of, **G-130**, 681
- Bile ducts
- cystic and saccular lesions of, **G-133-1**, **G-133-2**, 682–683
  - filling defect or segmental lesion in, on cholangiography, **G-134**, 683
  - narrowing or obstruction, distal, **G-137**, 684–685
- Biliary-enteric fistula, **G-139**, 686
- Biliary tract, **G-129 to G-140**, 680–686
- abnormal, congenital syndromes with, **G-129**, 680–681
  - diseases common to tropics and developing countries, **J-1-S**, 851–855
- Biliary tree, gas in, **G-128**, 680
- Biparietal bossing, **A-9**, 15
- Bladder, **H-96 to H-110**, 801–807
- calcification in wall or lumen, **H-105**, 805–806
  - diseases common to tropics and developing countries, **J-1-S**, 851–855
  - distended, **H-96**, 801
  - diverticula, **H-109**, 807
  - extrinsic pressure deformity of, **H-99**, 802–803
  - filling defect in wall or lumen, **H-104**, 804–805
  - fistula, **H-108**, 806–807
  - gas in, **H-107**, 806
  - neurogenic, **H-98**, 802
  - outlet obstruction, **H-110**, 807
  - pear-shaped, **H-99**, 802–803
  - small or contracted, **H-97**, 801
  - teardrop, **H-99**, 802–803
  - tumors, **H-103**, 804
  - urinary tract obstruction below, in child, **H-111**, 808
- wall
- filling defect(s) in, **H-105**, 805–806
  - thickening, **H-100 to H-101**, 803–804
- Blind loop syndrome, **G-58**, 642–643
- Blister lesion of bone, **D-68**, 301
- Block vertebrae, **C-11**, **C-25**, 197–198, 204
- Blood vessels, gas embolism in, **E-46**, 477
- Blow-out lesion of bone, **D-69-1**, 302
- Bone
- age
    - decreased, **D-17-1**, 256–257
    - increased, **D-16**, 256
  - asymmetry in size of
    - in hand, **D-147-1 to D-147-3**, 358–359
    - localized or generalized, **D-13**, 254–255
  - ballooned, **D-12**, 253
  - benign tumor-like lesions of, **D-80**, 310
  - blister (solitary cyst-like lesion expanding bone eccentrically), **D-68**, 301
  - blow-out lesion of, **D-69-1**, 302
  - bowed, single or multiple, **D-8**, 250–251
  - changes
    - neurotrophic, **D-150**, 360–361
    - sinonasal mass without, **M-122**, 910
  - classification of sclerosing dysplasias of, **D-2-S**, 245
  - combined lung and, disorder, **F-67**, 543–544
  - cortical disorders, **D-89-S to D-106**, 317–326
  - cyst, precursor lesions of aneurysmal, **D-80-S3**, 311
  - osteolytic lesion of, solitary, **D-70**, 303
  - cystic lesions, **D-57-1 to D-76**, 292–306
  - defect in skull, solitary or multiple, **A-23-2**, 24–25
  - demineralization, **D-41 to D-47**, 276–284
  - density
    - or matrix, osteolytic lesion of bone containing, **D-72**, 303–304
    - scattered areas of decreased and increased, in skeleton, **D-47**, 283–284
  - destruction
    - common bone lesions and their typical patterns, **D-62-S**, 298
    - diagram of patterns of, **D-61-S**, 297
    - or erosion of external conical surface of, **D-105**, 325–326

Bone destruction (*continued*)

- gross, with malignant neoplasm and little or no periosteal reaction, **D-82**, 314
  - large bone lesion, **D-69-2**, 302–303
  - malignant neoplasm with marked mineralization relative to, **D-84**, 315
  - soft tissue mass with underlying, **D-251**, 425
  - widespread areas of, **D-75**, 305
  - disease, distribution of metastatic, **D-87-S2**, 316
  - disorder, associated with otosclerosis on tomography or CT, **B-25**, 118
  - dumbbell, **D-35**, 272–273
  - dysplasias with macrocephaly, **A-3-2**, 12–13
  - epiphyseal disorders, **D-18 to D-30**, 258–268
  - erosion, soft tissue mass with underlying, **D-251**, 425
  - extradural lesions
    - with abnormal adjacent, **M-107**, 905–906
    - with normal adjacent, **M-106**, 905
  - fibrocystic lesions of, **D-80-S1**, 310–311
  - gas within (especially on CT), **D-116**, 334
  - generalized gamuts, **D-1-S to D-116**, 239–334
  - generalized osteosclerosis classified based on its location within, **D-56-S**, 291–292
  - growth or modeling disorders, **D-1-S to D-17-2**, 239–258
  - infarct, **D-49**, 286
  - infectious lesion of, well-defined, often cyst-like, **D-66**, 300
  - international nomenclature of constitutional diseases of, **D-1-S**, 239–244
  - lesions
    - common, and their typical patterns of bone destruction, **D-62-S**, 298
    - favored sites of origin of various, **D-57-S**, 294
    - involving both sides of joints, **D-239**, 417
    - large destructive, **D-69-2**, 302–303
    - osteosclerotic (see Osteosclerotic bone lesions) **D-53**, **D-54**, 288–289
    - polyostotic, **D-107-1 to D-107-3**, 326–328
    - with sequestrum or sequestrum-like region, **D-51**, 287
  - localized accelerated maturation, elongation, or overgrowth of, **D-14**, 255
  - localized epiphyseal or metaphyseal lesion resulting in premature closure of growth plate and shortened, **D-29**, 268
  - long thin, narrow diametaphysis, **D-10**, 251–252
  - lucent defects in, of hands, wrists, feet, or ankles, **D-151**, 361–362
  - lucent lesion of, surrounded by marked sclerotic reaction or rim, **D-64**, 299
  - lytic lesions, **D-57-1 to D-76**, 292–306
  - margin and periosteal reaction, relationship of biologic activity (growth rate) to type of, **D-63-S**, 299
  - metaphyseal disorders, **D-31 to D-40-S**, 269–276
  - moth-eaten or permeative osteolytic lesion of, **D-71**, 303
  - multiple radiolucent lesions of, **D-74**, 304–305
  - neoplasms, **D-77-S1 to D-88**, 306–316
    - age range of highest incidence of various, **D-77-S1**, 306–307
    - benign, **D-79**, 309
    - classified by tumor matrix or tissue of origin, **D-78-S**, 308–309
    - malignant
      - with gross destruction and little or no periosteal reaction, **D-82**, 314
      - with marked mineralization relative to destruction, **D-84**, 315
      - with marked periosteal reaction, **D-83**, 315
      - periosteal or parosteal, **D-88**, 316
      - primary malignant, **D-81**, 311–312
      - radiologic criteria suggesting malignant, **D-81-S1**, 312
      - nonneoplastic lesions of, **D-80**, 310
      - osteoporosis, **D-42**, **D-43-1**, **D-43-2**, **D-228**, **D-229**, 277–280, 413, 414
      - osteosclerosis, **D-48 to D-56-S**, 284–292
      - osteosclerotic lesion, solitary or multiple, **D-53**, **D-54**, 288–289
      - overconstruction or overtubulation, **D-11**, 252–253
      - periosteal or cortical disorders, **D-89-S to D-106**, 317–326
      - pointed, with neuropathic changes, **D-150**, 360–361
      - precursors of malignancy, **D-81-S6**, 314
      - preferential site within, of various osseous lesions, **D-57-1 to D-57-4**, 292–293
      - proliferation of new, at tendon and ligament insertions, **D-106**, 326
      - rate of frequency of metastases to, from various primary carcinomas, **D-87-S1**, 316
    - resorption
      - calcaneal, **D-234**, 415
      - subperiosteal, **D-41**, 276–277
    - round cell lesions of, **D-81-S4**, 313
    - sclerosis with periosteal reaction, **D-97**, 322
    - sclerotic focus in, of hands or feet, **D-152**, 362
    - short squat, **D-7**, 249
    - sites of origin of various lesions (“field theory”), **D-57-S**, 294
    - skull and facial, of membranous origin, **A-34-S**, 30
    - small, square hand with shortening of all, **D-142**, 354–355
    - solitary cyst-like lesion expanding, eccentrically, **D-66**, 300
    - solitary large calcified soft tissue mass adjacent to, **D-250**, 424–425
    - solitary lytic epiphyseal or epiphyseal-metaphyseal lesion of, **D-58**, 295
    - solitary lytic metaphyseal or diametaphyseal lesion, **D-59-1 to D-59-3**, 295–296
    - solitary poorly demarcated lytic lesion of, **D-70**, 303
    - spindled, **D-150**, 360–361
    - surface lesion of, **D-88**, 316
    - synostosis of, **D-115**, 333
    - thick, solid, wavy, or ballooned periosteal reaction involving, **D-99**, 323
  - tumors
    - “field theory” of origin of, **D-57-S**, 294
    - frequency of primary, **D-81-S5**, 313
    - twisted, **D-9**, 251
    - underconstriction or undertubulation, **D-11**, 252–253
    - vascular deossification of, **D-113**, 332
    - wide or thick hand, **D-148**, 359–360
    - xanthomatous lesions of, **D-80-S2**, 311
- Bone-in-bone vertebrae, **C-32**, 207
- “Bone within a bone” appearance, **D-50**, 286
- Bony defect
  - localized, about optic canal, **B-12**, 109
  - of orbits, **B-8**, 107–108
  - erosion, sinonasal mass with, **M-124**, 911
  - remodeling, sinonasal mass with or without erosion, **M-123**, 911
  - union between adjacent digits, **D-137**, 350–351
  - whiskering (proliferation of new bone at tendon and ligament insertions), **D-106**, 326

- Bossing  
 biparietal, **A-9**, 15  
 frontal, **A-8**, 14–15
- Bow legs, **D-185**, 382–383
- Bowed bones, single or multiple, **D-8**, 250–251
- Bowel  
 obstruction in absence of mechanical blockage, **G-79**, 654–655  
 rotation, abnormalities of, **G-65**, 646  
 wall, gas in, **G-70**, 648–749
- Bowing, isolated tibial, **D-177**, 378–379
- Brachiocephalic arteries, anomalies of, **E-21-S**, 462
- Brachydactyly  
 congenital syndromes with generalized, **D-142**, 354–355  
 localized, **D-141**, 353–354
- Brain (see also Cerebral and Intracranial) **A-46 to A-119**, 37–94  
 angiography, **A-101 to A-108**, 84–87  
 calcification, **A-46 to A-50**, 37–41  
 diseases common to tropics and developing countries, **J-1-S**, 851–855  
 extracranial ischemic lesion secondarily involving, **A-107**, 87  
 features useful in CT identification of various neoplasms, **A-59-S**, 53  
 infant, lesions identifiable on ultrasound examination of, **A-109**, 87–88  
 infections of, identifiable on CT or MRI, **A-93**, 78  
 masses, **A-51-S1 to A-83**, 41–73  
 metastatic disease to, **A-54-S**, 46  
 miscellaneous gamuts, **A-118**, **A-119**, 94  
 normal, CT attenuation (density) of various, **A-57-1 to A-57-3**, 49–51
- stem  
 CSF intensity lesion, **M-36**, 885  
 enlarged, **A-85**, 73  
 low attenuation (hypodense) lesion in, on CT or MRI, **A-86**, 74
- stem disease, **M-46**, 888  
 mass effect, **M-24**, **M-25**, 882  
 no mass effect, **M-22**, **M-23**, 881, 882
- subarachnoid space lesions hyperintense to, on FLAIR, **M-68**, 895  
 subarachnoid space lesions hyperintense to, on T1, **M-69**, 895  
 subarachnoid space lesions isointense to CSF, **M-70**, 895  
 surface, avascular zone near, on cerebral angiography, **A-106**, 86–87  
 surface enhancement of, on CT, **A-88-1**, 74
- tumors  
 incidence of, **A-52-S**, 44–45  
 primary, classification of, **A-51-S2**, 43–44  
 various patterns seen on CT or MRI, **A-60 to A-86**, 54–74  
 white matter disease of, on CT or MRI, **A-95-1 to A-95-2**, 79–80
- Breast  
 axillary lymphadenopathy on mammography, **I-17**, 847  
 calcifications, **I-7-1 to I-7-6**, 841–843  
 coarse, **I-7-1**, 841  
 diffuse scattered microcalcifications, **I-7-6**, 843  
 linear, **I-7-4**, 842  
 lobular, **I-7-3**, 842  
 microcalcifications localized into groups, **I-7-5**, 842  
 semicircular, circular, or eggshell, **I-7-2**, 841–842  
 changes, diffuse, **I-9**, 843–844  
 diseases of, **I-1-1 to I-18-S**, 837–848  
 mistakes and pitfalls for radiologists and physicians on mammography, **I-18-S**, 847–848  
 mistakes and pitfalls for technologists on mammography, **I-19-S**, 848  
 pectoralis muscle asymmetry on mammography, **I-17**, 847  
 pigeon, **F-129**, 592–593  
 skin thickening over, **I-10**, 844
- Breast lesion  
 benign lesions that can be ignored when classical, **I-15-S**, ??  
 circumscribed, evaluated by size of lesion, **I-1-1**, **I-1-2**, 837–838  
 containing fat, **I-6**, 840–841  
 halo sign or capsule around periphery of, **I-3**, 839  
 lesions or artifacts that can mimic true, **I-11**, 844–845  
 poorly defined or irregularly marginated circumscribed, **I-4**, 839–840  
 stellate, **I-5**, 840  
 well-defined circumscribed, **I-2**, 838–839
- Bridging of pubic symphysis, **D-197**, 393–394
- Broad clavicle, **D-174-1**, 376–377
- Bronchial lesion, **F-78**, 557–558
- Bronchiectasis  
 causes of, **F-80**, 558–559  
 types of, **F-80-S**, 559
- Bronchopleural fistula, **F-112**, 582
- Bronchus, mucoid impaction in, **F-79**, 558
- Budd-Chiari syndrome, **G-189**, 711
- Bulge, localized, of calvarium or scalp, **A-10**, 16
- Bull's-eye  
 lesion, **G-105**, 669  
 sign with mass in the pulmonary cavity, **F-51**, 535  
 in abdomen on ultrasound, **G-259**, 745
- Bursae, calcification in, **D-246-1**, 422
- Button sequestrum of skull, **A-22**, 22–23
- C**  
 Calcaneal  
 bone resorption, **D-234**, 415  
 spur, **D-233**, 415
- Calcific streaking in infants and children, **D-52**, 287
- Calcification  
 abdominal (see Abdominal, calcification)  
 abdominal wall, **G-252**, 741  
 adrenal, **H-123**, 812  
 in articular cartilage, **D-242**, 418–419  
 basal ganglia, **A-49**, 40  
 bladder, **H-105**, 805–806  
 brain, **A-46 to A-50**, 37–41  
 breast, **I-7-1 to I-7-6**, 841–843  
 in bursae, tendons, ligaments, or nerves, **D-246-1 to D-246-3**, 422–423  
 in common bile duct, **G-114**, 673  
 in ear cartilage (pinna), **B-36**, 124  
 eggshell, in chest, **F-143**, 600  
 extraglobal, on CT, **B-21**, 115–116  
 fetal intracranial, **O-12**, 937  
 fingertips, **D-248**, 424  
 gallbladder, **G-114**, 673  
 globe, on CT, **B-21**, 115–116  
 in heart or great vessels, **E-44**, 475–476  
 intracranial (see intracranial, calcification), **A-46 to A-50**, 37–41  
 intraorbital, **B-19**, 114

- Calcification (*continued*)
- in kidney, focal or annular, **H-23**, 767
  - in liver, **G-142**, 688
  - lower quadrant, **H-138**, 819
  - in lymph nodes, **D-249**, 424
  - in muscles and subcutaneous tissues, **D-245-1**, **D-245-2**, 420–422
  - of one or more intervertebral disks, **C-55**, 219–220
  - pancreatic, **G-218**, **G-219**, 724–725
  - pelvic, **H-138**, 819
  - periarticular or intra-articular, **D-243**, 419–420
  - pericardial, **E-45**, 476
  - pleural, **F-124**, 598
  - in scrotum, **H-164**, 827
  - sellar or parasellar, **A-48**, 39–40
  - soft tissue nodules without obvious, diseases common to tropics and developing countries, **J-1-S**, 851–855
  - soft tissue tumor with associated, **D-250**, 424–425
  - in soft tissues, diseases common to tropics and developing countries, **J-1-S**, 851–855
  - splenic (see Splenic, calcification), **G-203**, **G-204**, 718–719
  - thoracic (see Thoracic, calcification), **F-140**, **F-141**, 598–599
  - ureteral, **H-85**, 796
  - in vas deferens, seminal vesicle, or fallopian tube, **H-149**, 823
  - vascular, **D-247**, 423
- Calcified
- loose body in joint, **D-241**, 418
  - pulmonary metastases, **F-142**, 600
- Calcium
- concentrations, causes of altered, **D-45-S**, 282–283
  - osteolytic lesion of bone containing, **D-72**, 303–304
- Calcium stones of urinary tract, classification of, **H-25-S**, 768
- Calculi, urinary tract (see Urinary tract, calculi) **H-106**, 806
- Callus formation, excess, **D-96**, 321
- Calvarium (see also Skull)
- abnormal contour of, **A-4**, 13
  - diffuse or widespread increased density, sclerosis, or thickening of, **A-15-1**, 18–19
  - localized bulge of, **A-10**, 16
  - localized increased density, sclerosis, or thickening, **A-14**, 17–18
- Camptodactyly, **D-136**, 349–350
- Carcinoid tumors, **G-84-S**, 657
- Carcinomas, rate of frequency of metastases to bone from various primary, **D-87-S1**, 316
- Cardiac (see also Heart)
- abnormalities, **E-27 to E-50-S**, 465–479
  - conditions, common, diagnosed by echocardiography, **E-50-S**, 479
  - displacement, **E-26**, 464–465
  - failure, in neonate, infant, or child, **E-4 to E-6**, 451–453
  - neoplasm or cyst, **E-43**, 475
  - pleural effusion with enlarged heart, **F-116**, 585
  - position, abnormal, **E-26**, 464–465
- Cardiomegaly, **E-6**, 452–453
- Cardiophrenic angle lesion, right anterior, **F-97**, 572–573
- Cardiospasm, of esophagus, **G-3**, 612–613
- Cardiovascular
- anomalies, associated with complete atrioventricular canal, **E-12-S2**, 458
  - anomalies, associated with VSD, **E-12-S1**, 457–458
  - disease, hypertensive, **E-37**, 471
  - gamuts, **E-1 to E-73-S**, 447–491
- Carpal, **D-156 to D-160-S**, 364–368
- angle, congenital syndromes associated with abnormal, **D-159-1**, **D-159-2**, 367
  - anomalies seen in common congenital syndromes, **D-160-S**, 368
  - bones, fragmented, irregular, or, sclerotic, **D-157-1**, 364–365
  - fusion, **D-158**, 366
  - ossicles, congenital syndromes with accessory, **D-156**, 364
  - small, congenital syndromes with, **D-157-2**, 365
- Cartilage, calcification in articular, **D-242**, 418–419
- Catheterization, complications of central venous, **E-73-S**, 491 (subclavian, jugular) or pulmonary artery, **E-73-S**, 491
- Cavitary lesions
- multiple, of lung, **F-49**, 534
  - sharply defined, of lung, **F-43-1**, **F-43-2**, 529–531
  - Cavitation, extensive pulmonary infiltrate with, **F-50**, 534–353
- Cecal lesion, **G-96**, 664
- Cecum, conical or contracted, **G-97**, 665
- Central nervous system
- complications of HIV infection and AIDS, **A-119**, 94
- Central vein groove (prominent anterior canal) of, vertebral body, **C-14**, 199
- Cerebellopontine angle
- cistern, **M-72**, **M-73**, 896
  - mass, **A-81**, 71
- Cerebellum, multiple enhancing lesions in, on CT, **A-60**, 54
- Cerebral angiography
- avascular zone near brain surface on, **A-106**, 86–87
  - intracranial arteriovenous shunting and early venous filling on, **A-104**, 86
- Cerebral arterial disease on angiography, **A-102**, **A-103**, 85
- Cerebral emboli, causes of, **M-13-S**, 878
- Cerebral infarction (stroke) on CT, MRI, or angiography, **A-98**, 81–82
- Cerebral vessels, pattern analysis of, on angiography, **A-101**, 84
- Cerebrospinal fluid
- overproduction of, **A-114-2**, 91–92
  - rhinorrhea, **A-118**, 94
- Cerebrum, multiple enhancing lesions in, on CT, **A-60**, 54
- Cervical
- esophagus, extrinsic impression on, **G-5**, 613
  - metastatic lymphadenopathy on CT or MRI, **B-101-S**, 169
- Cervical spine, **C-6-S1 to C-10**, 192–197
- fusion of, **C-10**, 197
  - injuries
    - mechanism of injury, **C-6-S1**, 192–193
    - stability and, **C-6-S2**, 193
- Charcot joint, **D-223**, 410
- Chemicals that can induce lung disease, **F-73-S**, 553–554
- Chest
- eggshell calcifications in, **F-143**, 600
  - gamuts, **F-1 to F-143**, 499–600
  - pleural effusion with radiographic evidence of other disease in, **F-114**, 583–584
  - wall
    - conditions, **F-126 to F-132**, 590–594
    - diseases common to tropics and developing countries, **J-1-S**, 851–855
    - lesion, **F-126**, 590–591
- Cholangiography, filling defect or segmental lesion in bile ducts on, **G-134**, 683
- Chondrocalcinosis, **D-242**, 418–419

- Chondrosarcoma, types of, **D-81-S3**, 313
- Chyllothorax, **F-120**, 587
- Chylous ascites, **G-235**, 732–733
- Clavicle, **D-171 to D-175**, 374–378
  - aplastic, hypoplastic, or thin, **D-172-1**, 375
  - broad, thickened, or enlarged, **D-174-1**, 376–377
  - erosion, destruction, penciling, or defect of outer end of, **D-175**, 377–378
  - handlebar, **D-172-2**, 375–376
  - lesion of, in infant or child, **D-171**, 374–375
  - sclerosis and periosteal reaction involving, **D-174-2**, 377
- Claw-hand, **D-145**, 358
- Cleft vertebrae, **C-13**, 198
- Clinodactyly, of fifth finger, **D-123**, 340–341
- Clivus, mass in, **A-70**, 63–64
- Clubbing
  - or destruction of renal calyces, **H-19**, 765
  - of fingers or toes, **D-133**, 348
- Clubfoot, congenital conditions associated with, **D-154**, 363–364
- Codman triangle, **D-90**, 318
- Colitis, **G-88**, 659–660
- Collapsed vertebra, solitary, **C-17**, 200
- Collapsed vertebrae, multiple, **C-18**, 201
- Colon, **G-83 to G-95-1**, 656–663
  - annular lesion of, **G-85**, 657–658
  - aphthoid ulcers in, **G-67**, 646–647
  - diseases common to tropics and developing countries, **J-1-S**, 851–855
  - distal, double tracking of barium in, **G-90**, 661
  - innumerable tiny nodules in, **G-68**, 647
  - multiple filling defects in, **G-87**, 658–659
  - segmental narrowing of, **G-86**, 658
  - smooth, **G-91**, 661
  - solitary filling defect in, **G-83**, 656–657
  - “thumbprinting” of, **G-103**, 668
- Colonic
  - distention without obstruction, **G-92**, 661–662
  - tumors, classification of, **G-84-S**, 657
- Common bile duct, calcification in, **G-114**, 673
- Computed tomography (see CT)
- Cone-shaped epiphyses, **D-27**, 266–267
- Congenital abnormalities
  - of great toe, **D-122-1**, 339
  - of temporal bone, **B-24**, 117–118
  - of thumb, **D-117-1 to D-117-6**, 334–336
- Congenital anomalies
  - associated with Wilms’ tumor, **H-41**, 777
  - and variations of appendix, **G-82-S**, 656
  - vascular, **B-24**, 117–118
- Congenital conditions
  - associated with clubfoot or other foot deformity, **D-154**, 363–364
  - with increased density or thickening of skull, **A-15-2**, 19–20
- Congenital defects
  - posterior neural arches, **C-45-1**, 213
- Congenital diseases, of heart and great vessels, **E-1 to E-26-S**, 447–465
- Congenital heart disease
  - acyanotic
    - with increased pulmonary vascularity, **E-16**, 460
    - with normal pulmonary vascularity, **E-15**, 459
  - associated with anterior right aortic arch, **E-21-S**, 462
  - congenital syndromes with, **E-1**, 447
  - cyanotic, with increased pulmonary vascularity, **E-17**, 460
  - with decreased pulmonary arterial vascularity, **E-19**, 461
  - differential features of major cyanotic, **E-8-S**, 455
  - flat or concave pulmonary artery segment in, **E-20**, 461
  - key findings in neonatal, **E-3**, 450
  - left to right shunt in, **E-7**, 453
  - onset of cyanosis in, **E-9**, 455–456
  - pulmonary arterial vascularity in common, **E-14**, 458–459
  - relative incidence of various types of, **E-2-S**, 449
  - right to left shunt or admixture lesion in, **E-8**, 454
- Congenital sternal abnormality, **D-209-1**, 401
- Congenital syndromes
  - with abdominal calcifications, **G-241**, 735–736
  - with abnormal acetabular angle, **D-194-2**, 392
  - with abnormal biliary tract, **G-129**, 680–681
  - with abnormal pelvis, **D-192**, 389–390
  - with abnormal scapula, **D-169**, 373–374
  - with absent, hypoplastic, dysplastic, bipartite, or dislocated patella, **D-180**, 380
  - with accessory carpal or tarsal ossicles, **D-156**, 364
  - associated with abnormal carpal angle, **D-159-1**, **D-159-2**, 367
  - associated with hydrocephalus, **A-114-2**, 91–92
  - associated with intestinal malrotation, **G-66**, 646
  - with atlanto-axial subluxation or instability, **C-7-2**, 194–195
  - carpal anomalies seen in common, **D-160-S**, 368
  - with congenital heart disease, **E-1**, 447–449
  - with coxa vara, **D-187-2**, 384–385
  - with delayed closure of fontanelles, **A-39**, 33–34
  - with delayed or defective dentition, **B-62**, 142–144
  - with delayed or defective pubic ossification, **D-195**, 392–393
  - with elbow anomaly, **D-165**, 371–373
  - with eleven pairs of ribs, **D-198-1**, 394
  - with flat or decreased acetabular angle, **D-194-1**, **D-194-2**, 391, 392
  - with generalized brachydactyly, **D-142**, 354–355
  - with generalized or widespread osteosclerosis, **D-55-2**, 290–291
  - with hypertelorism, **B-3-2**, 102–103
  - with hypospadias or other ambiguous external genitalia, **H-166**, 828
  - with irregularity, fragmentation, or stippling of multiple epiphyses, **D-19-2**, 259–260
  - with joint dislocation or subluxation, **D-213**, 404–405
  - with joint laxity or hypermobility, **D-212**, 403–404
  - with kidney malformation or anomaly, **H-1**, 755
  - with limited joint mobility, **D-211**, 402–403
  - with macrocephaly, **A-3-2**, 12–13
  - with maxillary or malar (zygomatic) hypoplasia, **B-60**, 140
  - with multiple missing teeth, **B-64**, 144–145
  - with myocardial pathology, **E-40-2**, 373
  - with one or more short middle phalanges, **D-124**, 341
  - with pectus carinatum, **F-129**, 592–593
  - with pectus excavatum, **F-130**, 593
  - with premature craniosynostosis, **A-1-2**, 10
  - with prognathism, **B-57-1**, 137
  - with renal insufficiency or nephropathy, **H-2**, 755–756
  - with retarded skeletal maturation, **D-17-2**, 257–258
  - with short hands and feet, **D-142**, 354–355
  - with short limbs, **D-6**, 248–249
  - with short, narrow thoracic cage, **F-131**, 593–594
  - with short metacarpals or metatarsals, **D-143-1 to D-143-3**, 355–357



- Congenital syndromes (*continued*)  
with short middle phalanx of fifth finger, **D-123**, 340–341  
with small carpals, **D-157-2**, 365  
with splaying, flaring, or widening of metaphyses, **D-34-2**, 271–272  
with splenomegaly, **G-198**, 716–717  
with thirteen pairs of ribs, **D-198-2**, 394  
with vertebral abnormality, **C-1**, 187–189
- Conical cecum, **G-97**, 665
- Consolidation (alveolar, air space) patterns, **F-1-S to F-16**, 499–509  
diffuse pulmonary disease with mixed, **F-16**, 508–509  
disseminated, acute or chronic, **F-8**, **F-9**, 502–503  
localized segmental or lobar, **F-2**, 499–500  
in patient with leukemia or lymphoma, **F-14**, 507
- Constitutional diseases of bone, international, **D-1-S**, 239–244  
nomenclature of, **D-1-S**, 239–244
- Constriction, localized, of esophagus, **G-12**, 617–618
- Constrictive pericarditis, **E-48**, 478
- Contour abnormality  
of calvarium, **A-4**, 13  
of occiput in an infant  
flat, **A-6**, 14  
prominent, **A-7**, 14
- Contour irregularity of vessel walls, **A-101**, 84
- Contracted  
bladder, **H-97**, 801  
cecum, **G-97**, 665  
hands, **D-145**, 358
- Contracture, of digits, **D-135**, 349
- Contrast-enhanced CT  
avascular lesions of liver on, **G-171**, 703  
vascular lesions of liver on, **G-171**, **G-172**, 703, 704
- Contrast enhancement patterns, of intracranial masses, on CT,  
**A-58-1 to A-58-4**, 51–52
- Convolutional markings  
decreased or absent, **A-42**, 36  
increased, **A-43**, 36
- Cor pulmonale, **E-54**, 481–482
- Coronal cleft vertebrae, **C-13**, 198
- Coronary artery, aneurysm of, **E-65**, 487–488
- Cortex of bone, “split” or double layer, **D-103**, 325
- Cortical disease  
mass effect, **M-43**, 887  
enhancing, **M-20**, 880  
nonenhancing, **M-19**, 880  
no mass effect  
enhancing, **M-18**, **M-42**, 879–880, 887  
nonenhancing, **M-17**, **M-41**, 879, 887
- Cortical disorders, bone, **D-89-S to D-106**, 317–326
- Cortical hyperostosis involving shaft of bone, **D-99**, 323
- Cortical margin, scalloping, erosion, or resorption of inner, **D-104**, 325
- Cortical surface of bone, destruction or erosion of external, **D-105**, 325–326
- Cortical thickening  
localized (one or few bones), **D-100**, 323  
widespread, **D-101**, 324
- Cortical thinning  
widespread, **D-102**, 324
- Coxa valga, **D-188**, 385
- Coxa vara, **D-187-1**, 384
- congenital syndromes with, **D-187-2**, 384–385
- Cranial nerve, enhancement, **M-27**, 883
- Cranial ossification, delayed or defective, **A-37**, 32–33
- Craniostenosis, **A-1-1**, 9
- Craniostynosis, premature, **A-1-1**, 9  
classification of primary (idiopathic), **A-1-S**, 9  
congenital syndromes with, **A-1-2**, 10
- Craniovertebral junction abnormality, **C-9-1**, **C-9-2**, 196
- Cranium (see also Skull), **A-1-1 to A-45-2**, 9–37  
unilateral small, **A-5**, 14
- Cricopharyngeal achalasia, **G-1**, 611
- CSF intensity lesion  
brain stem, **M-36**, 885  
mass effect  
enhancing, **M-35**, 885  
nonenhancing, **M-34**, 885  
no mass effect, **M-33**, 885  
posterior fossa, **M-38**, 886  
sellar/suprasellar region, **M-37**, 886
- CT  
abdominal, abscess mimics on, **G-244-S**, 737  
abnormality of azygoesophageal recess especially on, **F-98**, 573  
attenuation (density) of various intracranial lesions (relative to normal brain), **A-57-1 to A-57-3**, 49–51  
bone disorder associated with otosclerosis on tomography or, **B-25**, 118  
cerebral infarction (stroke) on MRI or angiography, **A-98**, 81–82  
characteristics of orbital masses in children, **B-7-S**, 107  
contrast enhancement patterns of intracranial mass on, **A-58-1 to A-58-4**, 51–52  
cystic mesenteric lesion identified on, **G-228**, 728  
cystic or necrotic mass in posterior fossa as seen on MRI or ultrasound or, **A-83**, 72–73  
cystic retroperitoneal mass, **H-131**, 816  
deformity and dimensional changes in eyeballs on MRI or, **B-18**, 113–114  
distinct optic nerve with perineural enhancement on, **B-15**, 111  
enhancing ventricular margins on, **A-89**, 75–76  
enlargement of rectus muscles of eyes on MRI or, **B-16**, 111–112  
extradural lesion on myelography or MRI or, **C-63**, 223–224  
extraglobal calcification on, **B-21**, 115–116  
fat density in abdomen on, **G-258**, 744  
fatty liver on, **G-144**, 689–690  
features useful in, identification of various types of neoplasm, **A-59-S**, 53  
focal hyperdense liver lesions on, **G-182**, **G-183**, 708–709  
focal hypodense liver lesions on, **G-180**, **G-181**, 707–708  
gas within bone on, **D-116**, 334  
globe calcification on, **B-20**, 114–115  
high density renal cyst on, **H-34**, 773  
high-resolution (HRCT) patterns, **F-26 to F-34-3**, 515–523  
chronic air space consolidation on, **F-28**, 518  
chronic interstitial lung disease, **F-26**, 515–516  
ground-glass opacities on, **F-27**, 516–517  
increased lung lucency (usually cystic pattern) on, **F-30**, 519  
lower lung disease on, **F-32**, 520  
peribronchovascular interstitial thickening on, **F-29**, 518–519  
small nodule distribution on, **F-34-1 to F-34-3**, 522–523  
small nodule opacities on, **F-33**, 521–522  
upper lung disease on, **F-31**, 520

- infections of brain identifiable on MRI or, **A-93**, 78  
intense enhancement of basilar cisterns on, **A-90-2**, 76  
intracerebral hemorrhage or hematoma on MRI or angiography or, **A-99**, 82–83  
intracranial fat or air lucency on plain films or MRI or, **A-91-1**, **A-91-2**, 77  
intradural extramedullary lesion on myelography or MRI or, **C-61**, 222–223  
intramedullary lesion on, **C-61**, 222–223  
intrasellar or parasellar mass on, **A-26**, 26–27  
lesion of facial canal in temporal bone on tomography or, **B-26**, 118  
low attenuation (hypodense) lesion in brain stem on, **A-86**, 74  
low density mass in spleen on, **G-206**, 719–720  
of mediastinal lesions classified according to their density, **F-91-1 to F-91-5**, 566–569  
metastatic cervical lymphadenopathy on MRI or, **B-101-S**, 169  
multiple enhancing lesions in cerebrum and cerebellum on, **A-60**, 54  
nonenhanced scan (see Nonenhanced CT scan)  
optic nerve enlargement on MRI or, **B-14**, 110–111  
pelvic mass on, **H-133 to H-137**, 817–819  
posterior fossa tumors on, **A-82**, 72  
renal mass on, **H-43 to H-48**, 778–780  
right anterior pararenal space abscess on, **G-243**, 736  
ring-enhancing lesion on, **A-61**, 54  
solid lesion of mesentery or mesenteric root on, **G-229**, 729  
soft tissue tumors with prominent fluid-fluid levels on MRI or, **D-263**, 433  
soft tissue tumors with prominent visible vascularity on MRI or, **D-264**, 434  
spinal block on, **C-64**, 224  
subdural empyema on MRI or, **A-87**, 74  
surface enhancement of brain on, **A-88-1**, 74  
various brain patterns seen on MRI or, **A-87 to A-100**, 74–84  
visual estimation of, attenuation and enhancement in various sellar and parasellar lesions, **A-65-S**, 61  
white matter disease of brain on MRI or, **A-95-1**, **A-95-2**, 79–80  
widening of spinal cord on myelography or MRI or, **C-59**, 221–222  
Cubitus valgus, **D-165**, 371–372  
Cuboid vertebrae, **C-22**, 203  
Cupping, metaphyseal, **D-36-1 to D-36-2**, 273–274  
Curvilinear intracranial calcification, **A-50**, 40–41  
Cyanosis, onset of, in congenital heart disease, **E-9**, 456–457  
Cyst  
  cardiac or pericardial, **E-43**, 475  
  intraventricular, **A-74**, 66–67  
  midline supratentorial, **A-72**, 65–66  
  ovarian, in child, **H-183**, 834  
  renal, high density, on CT, **H-34**, 773  
Cyst-like lesion (see also Lytic lesions), **D-57-1 to D-76**, 292–306  
  of bone, solitary, **D-66**, 300  
  expanding bone eccentrically (blister), solitary, **D-68**, 301  
  infectious, well-defined, **D-66**, 300  
  of jaw, **B-72**, **B-79**, 149–150, 154–155  
  in phalanx, **D-131**, 346–347  
  pulmonary, **F-45**, 532  
Cystic abdominal mass, in fetus or newborn on ultrasound, **G-254**, 742  
Cystic disease  
  of kidney, **H-30**, 771–772  
  of liver, **G-157**, 697  
Cystic duct obstruction, gallbladder disease due to, **G-113**, 673  
Cystic lesion  
  of bile ducts, **G-133-1**, **G-133-2**, 682–683  
  of bone, **D-57-1 to D-76**, 292–306  
  mediastinal on plain films, CT, or MRI, **F-93**, 570–571  
  mesenteric, identified on CT or ultrasound, **G-228**, 728  
  of pancreas on CT or ultrasound, **G-214**, 723  
Cystic mass  
  in posterior fossa as seen on CT, MRI, or ultrasound, **A-83**, 72–73  
  retroperitoneal, **H-131**, 816  
Cystitis, **H-102**, 804  
**D**  
Dactylitis, **D-132**, 347  
Delayed closure  
  of fontanelles, **A-39**, 33–34  
  of sutures, **A-40**, 34–35  
Delayed or defective cranial ossification, **A-37**, 32–33  
Delayed eruption or noneruption of teeth, **B-61-1**, 141  
  congenital syndromes with, **B-61-2**, 141–142  
Demineralization (see also Osteopenia), **D-41 to D-47**, 276–284  
  diffuse or widespread, of skull, **A-20**, 22  
  widespread or generalized, with coarse trabeculation, **D-46**, 283  
Demyelinating diseases, **A-95-2**, 79–80  
Dens (odontoid) absence, hypoplasia, or fragmentation, **C-8**, 195–196  
Dense  
  (ivory) epiphyses, of hands and feet, **D-26**, 265–266  
  sclerotic (ivory) vertebra, **C-35**, 208–209  
  temporal bone lesion, **A-31**, 29–30  
  vertical metaphyseal lines, **D-33**, 270  
Density  
  congenital conditions with increased, of skull, **A-15-2**, 19–20  
  CT of mediastinal lesions classified according to their, **F-91-1 to F-91-5**, 566–569  
  diffuse or widespread increased, of calvarium, **A-15-1**, 18–19  
  generalized increased, of base of skull, **A-17**, 20–21  
  increased, within basilar cisterns on nonenhanced CT scan, **A-90-1**, 76  
  increased bands of, in subchondral zones of vertebrae, **C-31**, 207  
  localized increased  
    of base of skull, **A-16**, 20  
    of calvarium, **A-14**, 17–18  
  loss of (spinal osteopenia), **C-36**, 209  
  in lungs, multifocal ill-defined, **F-15**, 507–508  
  scattered areas of decreased and increased bone, **D-47**, 283–284  
  zones of increased, in metaphyses, **D-32**, 269–270  
Dentition, congenital syndromes with delayed or defective, **B-62**, 142–144  
Deossification, vascular, of bone, **D-113**, 332  
Depressed gag reflex, **F-47-S**, 533  
Destruction of  
  bone (see Bone, destruction)  
  posterior neural arches, **C-45-2**, 213–214  
  vertebral pedicle, **C-41**, 212  
Dextrocardia, **E-26-S**, 465  
Diametaphyseal ischemia, **D-49**, 286  
Diametaphysis  
  narrow, long thin bones, **D-10**, 251–252  
  solitary lytic lesions of bone, **D-59-1 to D-59-3**, 295–296

- Diametaphysis (*continued*)  
wide, localized or generalized, **D-11**, 252–253
- Diaphragm, **F-133 to F-139**, 594–598  
bilateral elevated, **F-134**, 595  
flat or depressed, unilateral or bilateral, **F-133**, 594–595  
unilateral elevated, **F-135**, 595–596
- Diaphragmatic moguls (bumps) or masses, **F-138**, 597
- Diaphyseal lesion, solitary lytic, **D-60**, 296
- Diaphysis, wide, **D-12**, 253
- Digits (see also Fingers, Toes, and Thumbs)  
acquired acro-osteolysis confined to single, **D-127-2**, 344  
amputation or absence of, **D-129-1**, **D-129-2**, 345–346  
broad distal phalanx of thumb, **D-121-2**, 338  
broad phalanges of, **D-121-3 to D-121-4**, 339  
contracture of, **D-135**, 349  
“drumstick” distal phalanges, **D-121-1**, 338  
flexion deformity of one or more, **D-136**, 349–350  
fusion of phalanges in, **D-134**, 348  
localized accelerated maturation, elongation, or overgrowth of, **D-14**, 255  
self-mutilation of, **D-129-3**, 346  
short distal phalanx of the thumb, **D-119-1**, **D-119-2**, 337–338  
short proximal phalanx of the thumb and/or other digits, acquired or congenital, **D-120**, 338  
soft tissue or bony union between adjacent, **D-137**, 350–351
- Dilatation, of stomach without obstruction, **G-31**, 628
- Diseases  
common to tropics and developing countries, listing of, based on body system and organ involved, **J-1-S**, 851–855  
geographic distribution of tropical infectious and parasitic, **J-2-S**, 856–857
- Disk spaces  
narrow, **C-52**, 218–219  
wide, **C-53**, 219
- Disks, intervertebral, **C-52 to C-56**, 218–220  
calcification of one or more, **C-55**, 219–220  
gas in, **C-56**, 220
- Disks, vacuum, **C-56**, 220
- Dissecting aneurysm of ascending aorta or arch, **E-64**, 487
- Distended bladder, **H-96**, 801
- Diverticulum  
of esophagus, **G-10-1 to G-10-4**, 616–617  
small bowel, **G-51-1**, 638
- Double-barrel esophagus, **G-9**, 615
- Double bubble sign, **G-43**, 634
- Double-layer cortex, **D-103**, 325
- Double tracking of barium in distal colon, **G-90**, 661
- Drop metastases to spinal subarachnoid space,  
sources of, **M-101-S**, 903
- Drugs that can induce lung disease, **F-73-S**, 553–555
- “Drumstick” distal phalanges, **D-121-1**, 338
- Dumbbell bones, **D-35**, 272–273
- Duodenal  
dilatation, without obstruction, **G-45**, 635  
disease, combined gastric antral and, **G-29**, 627  
loop, widening of, **G-36**, 630–631  
mass, solitary intrinsic, **G-37**, 631  
narrowing or obstruction, **G-42**, 634  
obstruction, in infant, **G-43**, 634  
ulceration, postbulbar, **G-41**, 633
- Duodenum, **G-35 to G-45**, 630–635  
band like constriction of transverse, **G-44**, 635  
diminished or absent fold pattern in, **G-39**, 632  
diseases common to tropics and developing countries, **J-1-S**, 851–855  
extrinsic indentation on, **G-35**, 630  
multiple or diffuse filling defects in, **G-38**, 631–632  
nodular or thickened folds in, **G-40**, 632–633
- Dural sinus thrombosis, causes of, **M-4-S3**, 873
- Dusts, inorganic, that cause pneumoconiosis, **F-70-S**, 545–546
- Dwarfism  
late-onset, **D-4**, 246–247  
lethal forms of, **D-3**, 246  
major syndromes of short limb (rhizomelic, mesomelic, acromelic), **D-5-1 to D-5-3**, 247–248
- Dysmyelinating diseases, **A-95-1**, 79
- Dysphagia, roentgen counterpart of, **G-1**, 611
- Dysplasias, sclerosing bone, classification of, **D-2**, **D-2-S**, 244–245
- Dysplastic pedicle, **C-41**, 212
- Dysplastic sella, **A-25-4**, 26
- E**ar, **B-30**, **B-31**, **B-32**, **B-36**, 120–122, 124
- Ear cartilage (pinna), calcification in, **B-36**, 124
- Echo-free renal mass on sonography, **H-64**, 787
- Echocardiography, common cardiac conditions diagnosed by, **E-50-S**, 479
- Echogenicity  
generalized or multifocal decreased or increased, of liver on ultrasound, **G-147**, **G-148**, 691–692  
of pancreatic masses on ultrasound, **G-213 to G-217**, 722–724  
splenomegaly with decreased, on ultrasound, **G-200**, 717  
splenomegaly with increased, on ultrasound, **G-201**, 717–718
- Edema, pulmonary (see Pulmonary edema), **F-10-1**, **F-10-2**, 504–505
- Eggshell calcifications in chest, **F-143**, 600
- Elbow  
anomaly, congenital syndromes with, **D-165**, 371–372  
fat pad, displaced, **D-167**, 372
- Elongated sella, **A-25-2**, 26
- Elongation  
of fibula, **D-178**, 379  
generalized or widespread, of skeleton, **D-15**, 255  
localized accelerated, of bone, digit, or limb, **D-14**, 255
- Emboli, **E-67**, 488  
cerebral, causes of, **M-13-S**, 878
- Emphysema  
infantile lobar, **F-54**, 537  
interstitial, of stomach, **G-32**, 628–629  
soft tissue, **D-269**, 439
- Empyema, subdural, on CT or MRI, **A-99**, 82–83
- Endometrial fluid collection with positive beta HCG, **O-35**, 945
- Enlarged  
brain stem, **A-85**, 73  
clavicle, **D-174-1**, 376–377  
heart, grossly, **E-41**, 474  
intervertebral foramen, **C-44**, 213  
liver, **G-141-1**, **G-141-2**, 686–688  
medial femoral condyle, **D-184**, 382  
papilla of Vater, **G-138**, 685–686  
pedicle, **C-40-2**, 211  
sella turcica, **A-26**, 26–27

- sulci, enlarged ventricles, **M-59**, 892  
superior ophthalmic vein, **M-119**, 909  
ventricles, enlarged sulci, **M-59**, 892  
ventricles, small sulci, **M-57**, 891
- Enlargement**  
bilateral adrenal, **H-119**, 811  
congenital, of liver, **G-141-2**, 687–688  
of distal femoral intercondylar notch, **D-183**, 381–382  
epiglottic, **B-114**, 177  
extraocular muscle, **M-117**, 908–909  
of foramen magnum, **A-33**, 30  
of ileocecal valve, **G-98**, 665  
of jugular canal, **A-67**, 62  
lacrimal gland, **B-23**, 116–117  
left atrial, **E-31**, 467  
left ventricular, **E-34**, 469  
lobar, with bulging interlobar fissure, **F-3**, 500  
localized, of pulmonary vessels, **E-56**, 482–483  
mediastinal or hilar lymph node, **F-103**, 576–577  
of one or more vertebrae, **C-26**, 204–205  
of optic canal, **B-13**, 109–110  
of optic nerve on CT or MRI, **B-14**, 110–111  
parotid gland, **B-90**, 162  
of rectus muscles of eye, on CT or MRI, **B-16**, 111–112  
rib, multiple symmetrical anterior, **D-202**, 397  
right atrial, **E-27**, 465–466  
right ventricular, **E-29**, 466–467  
salivary gland, **B-90**, 162  
thymic, **F-95**, 572  
umbilical cord, **O-33**, 944  
unilateral adrenal, **H-118**, 810–811  
unilateral hilar, **F-106**, 578–579  
uterine, on sonography, **H-171**, 830
- Eosinophilia, pulmonary disease with, **F-68**, 544  
Eosinophils, pleural fluid containing, **F-118-S1**, 585–586  
Epiglottic enlargement, **B-114**, 177  
Epiphyseal (see also Epiphyses)  
disorders, **D-18 to D-30**, 258–268  
ischemia, **D-48**, 284–285  
lesion, localized, resulting in premature closure of growth plate and shortened bone, **D-29**, 268  
ossification centers  
congenital syndromes with irregularity, fragmentation, or stippling of multiple, **D-19-2**, 259–260  
irregularity, fragmentation, or stippling of multiple, **D-19-1**, 259  
plate (physis), wide, **D-28-1**, **D-28-2**, 267  
solitary lytic lesion, **D-59-1 to D-59-3**, 295–296
- Epiphyseal-metaphyseal region, gross disruption of, **D-30**, 268  
Epiphyses  
accessory (pseudoeiphyses), **D-18**, 258–259  
alteration in size or appearance of multiple, **D-20**, 261–262  
cone-shaped, **D-27**, 266–267  
fuzzy, **D-24**, 264–265  
indistinct, **D-24**, 264–265  
ivory, of hands and feet, **D-26**, 265–266  
large, **D-22-1**, **D-22-2**, 263–264  
ring, **D-25**, 265  
slipped capital femoral, **D-190**, 387–388  
small, **D-21-1**, **D-21-2**, 262–263  
thin, **D-23**, 264
- Epithelial tumors of colon, **G-84-S**, 657  
Erlenmeyer flask deformity of metaphysis, **D-34-1**, 270–271  
Erosion  
of external cortical surface of bone, **D-105**, 325–326  
of humeral head, **D-168**, 373  
of inner cortical margin, **D-104**, 325  
of inner table of skull, **A-21**, 22  
of internal auditory meatus, **A-29**, 28–29  
localized, about optic canal, **B-12**, 109  
of medial aspect of proximal metaphyses of long bones, **D-39**, 375  
of middle fossa floor, **A-69**, 63  
of midportion of terminal phalanx, **D-127-3**, 344  
of multiple terminal phalangeal tufts, **D-127-1**, 343–344  
of orbital (sphenoidal) fissure, **B-11**, 109  
of orbits, **B-8**, 107–108  
of outer end of clavicle, **D-175**, 377–378  
of petrous ridge, pyramid, or apex, **A-28**, 28  
of sella turcica, **A-26**, 26–27  
in sacroiliac joint disease, **C-49-1**, 215–216  
sinonasal mass with bony, **M-124**, 911  
sinonasal mass with bony remodeling without, **M-123**, 911  
of sphenoid wing, **A-27**, 27–28  
of sternomanubrial synchondrosis or sternoclavicular joints, **D-210**, 402  
of tympanic portion of petrous bone, middle ear, or mastoid, **B-32**, 121–122  
vertebral pedicle, **C-41**, 212
- Erosive gastritis, **G-25**, 624–625  
Eruption, delayed, of teeth, **B-61-1**, **B-61-2**, 141–142  
Esophageal (see also Esophagus), **G-1 to G-19**, 611–621  
lesion, in child, **G-19**, 621  
motility disorder, **G-2**, 611–612  
mucosa, widespread irregular or nodular, **G-16**, 620  
plaques, **G-17**, 620  
ulceration, solitary or multiple, **G-14**, 619  
varices, **G-18**, 621
- Esophagobronchial fistula, **G-8**, 615  
Esophagogastric disease, **F-47-S**, 533  
Esophagus (see also Esophageal), **G-1 to G-19**, 611–621  
achalasia (cardiospasm) of, **G-3**, 612–613  
air in, **G-4**, 613  
cervical, extrinsic impression on, **G-5**, 613  
diseases common to tropics and developing countries, **J-1-S**, 851–855  
diverticulum of, **G-10-1 to G-10-4**, 616–617  
double-barrel, **G-9**, 615  
extrinsic vascular impression on, **G-7**, 614  
localized constriction or narrowing of, **G-12**, 617–618  
solitary intramural or intraluminal falling defect of, **G-11**, 617  
thoracic, extrinsic impression on, **G-6**, 614  
transverse mucosal folds in, **G-15**, 619
- Exophthalmos, unilateral (proptosis), **B-17**, 112–113  
Exostosis, **D-114**, 332–333  
Expansile lesion of bone, solitary, **D-67**, 300–301  
Expansile radiolucent lesions of jaw, **B-81**, **B-82**, 155–156  
External auditory canal tumor, **B-35**, 123–124  
Extraaxial  
fluid collection, **M-78 to M-82**, 897–898  
bright on T1, **M-81**, **M-82**, 898  
CSF intensity, **M-78**, 897  
dark on T1, **M-79**, **M-80**, 897, 898

- Extraaxial (*continued*)  
 mass, **M-83, M-84**, 898–899  
 enhancing, **M-84**, 898–899  
 nonenhancing, **M-83**, 898
- Extraconal  
 lesions, lateral, **M-118**, 909  
 mass, **B-6-4**, 105–106
- Extracranial  
 ischemic lesion secondarily involving brain, **A-107**, 87  
 mass, **M-85 to M-87**, 899  
 bright on T1, **M-87**, 899  
 CSF intensity, **M-85**, 899  
 dark on T1, **M-86**, 899
- Extradural lesion, **C-63, M-106, M-107**, 223–224, 905–906  
 with abnormal adjacent bone, **M-107**, 905–906  
 on myelography, CT, or MRI, **C-63**, 223–224  
 with normal adjacent bone, **M-106**, 905
- Extraglobal calcification on CT, **B-21**, 115–116
- Extramedullary  
 hematopoiesis, intrathoracic, **F-100-S**, 574  
 intradural lesions, **M-98, M-99, M-100, M-102, M-103**, 902, 903, 904  
 bright on T1, dark on T2, **M-102**, 904  
 CSF intensity, **M-98**, 902  
 dark on T1, bright on T2  
 mass effect, **M-100**, 903  
 no mass effect, **M-99**, 902  
 on myelography, CT, or MRI, **C-61**, 222–223  
 signal void, **M-103**, 904
- Extraocular muscle enlargement, **M-117**, 908–909
- Extraperitoneal gas, **H-132**, 816
- Extrapleural  
 conditions, **F-126**, 590–591  
 lesion, **F-125-1**, 590  
 mass associated with rib lesion, **F-126**, 590–591
- Extravasation  
 peripelvic, **H-56**, 783  
 ureteral, **H-95**, 800
- Extrinsic allergic alveolitis, **F-69**, 544–545
- Eyeballs, deformity and dimensional changes in,  
 on CT or MRI, **B-18**, 113–114
- Eyes, enlargement of rectus muscles of, on CT or MRI, **B-16**, 111–112
- F**acial bones  
 diseases common to tropics and developing countries, **J-1-S**, 851–855  
 of membranous origin, **A-34-S**, 30
- Facial canal, lesion of, in temporal bone, on tomography or CT, **B-26**, 118
- Facial nerve, anomalies, **B-24**, 117–118
- Facial nerve, palsy, **B-27-2**, 119
- Fallopian tube, calcification in, **H-149**, 823
- Fat  
 intracranial lucency on CT or MRI, **A-91-1**, 77  
 breast lesion containing, **I-6**, 840–841  
 density, **F-91-1**, 566–567  
 in abdomen on CT, **G-258**, 744  
 pad, displaced elbow, **D-167**, 372  
 ratio, diseases affecting muscle to, **D-267-1 to D-267-4**, 437–438
- Fatty liver, **G-144**, 689–690
- Feet, **D-26, D-142, D-144, D-149-1 to D-153**, 265–266, 354–355, 357, 360–363  
 abnormal tapering of short tubular bones of, **D-149-1, D-149-2**, 360  
 amputation or absence of, **D-129-1, D-129-2**, 345–346  
 deformity of, congenital conditions associated with, **D-154**, 363–364  
 dense (ivory) epiphyses of, **D-26**, 265–266  
 diseases common to tropics and developing countries, **J-1-S**, 851–855  
 neurotrophic bone changes in, **D-150**, 360–361  
 sclerotic focus in bones of, **D-152**, 362  
 short (see Short, hands and feet), **D-142 to D-144**, 354–357  
 tropical diseases involving, **D-153**, 362–363  
 well-defined solitary or multiple lucent defects in bones of, **D-151**, 361–362
- Femoral condyle, enlarged medial, **D-184**, 382
- Femoral epiphysis, slipped capital, **D-190**, 387–388
- Femoral head  
 dysplasia, **D-189-2**, 386  
 fragmented or irregular, **D-189-3**, 386–387
- Femoral intercondylar notch, enlargement of, **D-183**, 381–382
- Femur, erosion of medial aspect of proximal metaphyses of, **D-39**, 275
- Fetal  
 abdomen, large, during last trimester, on sonography, **O-22**, 940  
 anomalies detectable by ultrasound, **O-2**, 933–934  
 anterior abdominal wall defect, **O-24**, 941  
 ascites on sonography, **O-23**, 940–941  
 bowel, echogenic on ultrasound, **O-18**, 938  
 brain  
 lateral or asymmetrical cystic mass, **O-9**, 936  
 midline cystic mass, **O-8**, 935  
 calcifications, intra-abdominal, **O-21**, 940  
 cardiac mass, **O-16**, 938  
 chest mass, **O-15**, 937–938  
 cranial deformity, **O-7**, 935  
 head, failure of, to engage during labor, **O-6**, 935  
 hepatosplenomegaly, **O-19**, 939  
 intracranial  
 calcifications, **O-12**, 937  
 fluid collections, massive, **O-11**, 936  
 neck mass, **O-14**, 937  
 skin thickening (diffuse hypertrichosis), **O-25**, 941  
 sonography, **O-2**, 933  
 spine, straight, **O-13**, 937  
 stomach, nonvisualization of, **O-17**, 938  
 ventriculomegaly (hydrocephalus), **O-10**, 936
- Fetus  
 large for dates, **O-3**, 934  
 small for dates, **O-4**, 934
- Fibrocystic lesions of bone, **D-80-S1**, 310–311
- Fibula  
 aplasia, hypoplasia, or shortening of, **D-179**, 379  
 elongation of, **D-178**, 379  
 “Field theory” of origin of bone tumors, **D-57-S**, 294
- Filling defect  
 in bile ducts on cholangiography, **G-134**, 683  
 in bladder wall or lumen, **H-104**, 804–805

- in duodenum, multiple or diffuse, **G-38**, 631–632
- in gallbladder, **G-116**, 674
- in gastric remnant, **G-22**, 623
- in lymph node on lymphangiogram, **D-228**, 413
- multiple
- in colon, **G-87**, 658–659
  - in knee or other joints on arthrography, **D-240**, 418
- in renal pelvis, infundibulum, or calyx, **H-22**, 766
- in right ventricle on angiocardiography, **E-30**, 467
- solitary, in colon, **G-83**, 656–657
- solitary intramural or intraluminal, of esophagus, **G-11**, 617
- in stomach, solitary or multiple, **G-21**, 622–623
- tortuous, or lumbar myelography, **C-65**, 224
- urethral, intrinsic or extrinsic, **H-115**, 809–810
- Fingers (see also Digits), **D-117-1 to D-141**, 334–354
- clinodactyly of fifth, **D-123**, 340–341
  - clubbing of, **D-133**, 348
  - congenital syndromes with short middle phalanx of fifth, **D-123**, 340–341
  - gangrene of, **D-130**, 346
  - long, **D-140**, 353
- Fingertips, calcification about, **D-248**, 424
- “Fish” (biconcave) vertebrae, **C-19**, 201–202
- Fistula
- biliary-enteric, **G-139**, 686
  - bladder, **H-108**, 806–807
  - external, from gastrointestinal tract, **G-107**, 670
  - gastrocolic or gastroduodenocolic, **G-33**, 629
  - internal, from gastrointestinal tract, **G-107**, 670
  - rectovaginal, **G-101**, 667
  - ureteral, **H-95**, 800
  - vaginal, **H-168**, 829
- Flaring
- congenital syndromes with, of metaphyses, **D-34-2**, 271–272
  - of metaphyses (including Erlenmeyer flask deformity), **D-34-3**, 272
- Flattened pedicle, **C-40-4**, 211
- Flexion deformity of one or more digits, **D-136**, 349–350
- Floating teeth, **B-67**, 146
- Fluid level in paranasal sinuses, **B-52**, 134
- Focal
- anechoic liver lesions on ultrasound, **G-173**, 704–705
  - hyperdense liver lesions on CT, **G-182**, **G-183**, 708–709
  - hyperechoic liver lesions on ultrasound, **G-148**, **G-175**, 691–692, 705–706
  - hypodense liver lesions on CT, **G-180**, **G-181**, 707–708
  - hypodense mass in liver on nonenhanced CT scan, **G-180**, 707–708
  - hypoechoic liver lesions on ultrasound, **G-147**, **G-174**, 691, 705
  - splenic lesion on ultrasound, **G-206**, **G-207**, 719–720
- Fold pattern, diminished or absent, in duodenum and small bowel, **G-39**, 632
- Fontanelles
- congenital syndromes with large anterior, **A-39**, 33–34
  - delayed closure of, **A-39**, 33–34
  - small anterior, **A-38**, 33
- Foot (see Feet), **D-26**, **D-142**, **D-144**, **D-149-1 to D-153**, 265–266, 354–355, 357, 363–363
- Foramen vertebral
- enlarged, **C-44**, 213
  - small narrow, **C-43**, 212
- Foramen magnum abnormalities, **A-32**, **A-33**, 30
- enlarged, **A-33**, 30
  - irregular, **A-32**, 30
  - small, **A-32**, 30
- Foramen, abnormal, **C-43**, **C-44**, 212, 213
- Forearms, deformity of, **D-164-1**, 370
- Forehead, prominent central, **A-8**, 14–15
- Fourth ventricle
- lesions, **A-80-1**, 69–70
  - outlet, obstruction at, **A-84**, 73
- Fractures
- multiple, **D-108-1 to D-108-4**, 328–329
  - normal skull variants simulating, **A-35-S2**, 31–32
  - pseudofractures, **D-110**, 330
  - stress, **D-111-S**, 331
- Fragile bone disorders, **D-108-1**, 328
- Fragmentation
- metaphyseal, **D-37**, 274
  - of multiple epiphyseal ossification centers, **D-19-1**, 259
  - of odontoid (dens), **C-8**, 195–196
- Fragmented carpal or tarsal bones, **D-157-1**, 364–365
- Fragmented or irregular femoral head, **D-189-3**, 386–387
- Frayed metaphyses, **D-38**, 275
- Frontal bossing, **A-8**, 14–15
- Fused vertebrae, **C-25**, 204
- Fusion
- of cervical spine, **C-10**, 197
  - carpal or tarsal, **D-158**, 366
  - of phalanges in digits, **D-134**, 348
  - of pubic symphysis, **D-197**, 393–394
  - of sacroiliac joints, **C-49-1**, 215–216
- Fuzzy epiphyses, **D-24**, 264–265
- G**ag reflex, depressed, **F-47-S**, 533
- Gallbladder, **G-108 to G-128**, 670–680
- calcification in, **G-114**, 673
  - contracted, **G-109**, 671
  - diseases common to tropics and developing countries, **J-1-S**, 851–855
  - diseases secondary to cystic duct or infundibulum obstruction, **G-113**, 673
  - distended in a child, **G-111**, 672
  - enlarged, **G-110**, 671–672
  - extrinsic deformity or displacement of, **G-125**, 679
  - gas in, **G-128**, 680
  - intraluminal signal abnormality, on MRI, **M-151-1 to M-151-3**, 923–924
  - multiseptate, **G-112**, 672
  - nonshadowing lesion in, on ultrasound, **G-117**, 675
  - nonvisualization of, **G-108**, 670–671
  - opacified, fixed polypoid lesions of filling defects in, **G-116**, 674
  - small, **G-109**, 671
- Gallbladder wall
- hyperechoic focus in, on ultrasound, **G-121**, 677
  - striations in thickened, on ultrasound, **G-124**, 678–679
  - thickening of, on ultrasound, **G-122**, **G-123**, 677, 678
- Gangrene of fingers or toes, **D-130**, 346
- Gas
- abdominal (see Abdominal, gas) **G-239 to G-241**, **G-245**, **G-246**, **H-139**, 734–736, 737, 820

- Gas (*continued*)
- abnormal collection of
    - in left upper quadrant, **G-240**, 735
    - in pelvis, **H-139**, 820
    - in right upper quadrant, **G-239**, 734–735
  - in bladder, **H-107**, 806
  - in bowel wall, **G-70**, 648–649
  - embolism in heart or blood vessels, **E-46**, 477
  - extraperitoneal, **H-132**, 816
  - in gallbladder or biliary tree, **G-128**, 680
  - in intervertebral disks (vacuum disks), **G-63**, 645
  - large abdominal pocket of, **G-241**, 735–736
  - in portal veins, **G-192**, 713
  - soft tissue, **D-269**, 439
  - within bone (especially on CT), **D-116**, 334
- Gastric (see also Stomach), **G-20 to G-34**, 622–630
- antral and duodenal disease, combined, **G-29**, 627
  - folks, large, **G-26**, 625
  - fundus, lesion involving, **G-23**, 623–624
  - remnant, filling defect in, **G-22**, 623
  - ulceration, **G-24**, 624
- Gastritis, erosive, **G-25**, 624–625
- Gastrocolic fistula, **G-33**, 629
- Gastroduodenocolic fistula, **G-33**, 629
- Gastrointestinal study, residual intestinal barium after, **G-75**, 652
- Gastrointestinal tract
- complications of AIDS in, **G-261**, 746
  - external fistula from, **G-107**, 670
  - gamuts, **G-1 to G-107**, 611–670
  - solitary or multiple nodules in, with large central ulceration, **G-105**, 669
- Genitalia, ambiguous external, congenital syndromes with, **H-166**, 828
- Genitourinary tract, **H-1 to H-117**, 755–810
- Genu valgum, **D-186**, 383–384
- Genu varum, **D-185**, 382–383
- Geographic distribution of tropical infectious and parasitic diseases, **J-2-S**, 856–857
- Gigantism, localized accelerated, of bone, digit, or limb, **D-14**, 255
- Globe
- calcification on CT, **B-20**, 114–115
  - lesions, **M-114**, 907
- Glycoprotein storage diseases, **J-4-S**, 858
- Gouge defect, anterior (scalloping) of one or more vertebral bodies, **C-29**, 205–206
- Great toe
- congenital abnormality of, **D-121-1**, 338
  - duplication of (hallucal polydactyly), **D-121-2**, 338
- Great vessels
- abnormalities, **E-51 to E-73-S**, 479–491
  - calcification in, **E-44**, 475–476
  - congenital diseases of, **E-1 to E-26-S**, 447–465
- Grooved defect, of humeral head, **D-168**, 373
- Ground-glass opacities, **F-27**, 516–517
- Growth disorders of bone, **D-1-S to D-17-2**, 239–258
- Growth plate, localized epiphyseal or metaphyseal lesion resulting in premature closing of, **D-29**, 268
- Growth rate, relationship of biologic activity to type of bone margin and periosteal reaction, **D-63-S**, 299
- Gynecological ultrasound, common indications for, **H-169-S**, 829
- Gynecomastia, **I-12**, 845
- “Hair on end”
- pattern in skull, **A-45-1**, 36–37
  - periosteal reactions, **D-91**, 318
- Halo sign or capsule around periphery of breast lesion, **I-3**, 839
- Hallucal polydactyly (duplication of great toe), **D-121-2**, 338
- Handlebar clavicle, **D-172-2**, 375–376
- Hands, **D-142 to D-155**, 354–364
- abnormal tapering of short tubular bones of, **D-149-1**, **D-149-2**, 360
  - amputation or absence of, **D-129-1**, **D-129-2**, 345–364
  - bones, asymmetry in size of, **D-147-1 to D-147-3**, 358–359
  - contracted (claw-hand), **D-145**, 358
  - dense (ivory) epiphyses of, **D-26**, 265–266
  - diseases common to tropics and developing countries, **J-1-S**, 851–855
  - generalized failure of modeling or tubulation in, **D-148**, 359–360
  - generalized short distal phalanges of, **D-125-1**, **D-125-2**, 342
  - large, for age, **D-146**, 358
  - neurotrophic bone changes in, **D-150**, 360–361
  - sclerotic focus in bones of, **D-152**, 362
  - short (see Short, hands and feet), **D-142 to D-144**, 354–357
  - small, square, with shortening of all bones, **D-142**, 354–355
  - spade, **D-142**, 354–355
  - tropical diseases involving, **D-153**, 362–363
  - ulnar deviation in, **D-230**, 414
  - well-defined solitary or multiple lucent defects in bones of, **D-151**, 361–362
- Head
- large, in infants, **A-115-1**, 92–93
  - lesions, **M-127 to M-130**, 912–913
  - and neck, **B-1 to B-123**, 101–181
- Heart (see also Cardiac)
- border
    - blurring of, on PA chest film, **F-63**, 541
    - extra bump along upper left, **E-33**, 468
  - calcification in, **E-44**, 475–476
  - congenital diseases of, **E-1 to E-26-S**, 447–465
  - diseases common to tropics and developing countries, **J-1-S**, 851–855
  - gas embolism in, **E-46**, 477
  - grossly enlarged, **E-41**, 474
  - small, **E-42**, 474–475
- Heart disease
- congenital (see Congenital heart disease)
  - high output, **E-39**, 472
  - ischemic, **E-38**, 472
- Heel pad, thickening of, **D-268**, 439
- Hematoma
- intracerebral, on CT, MRI, or angiography, **A-99**, 82–83
  - intramural, of intestinal tract, **G-104**, 669
  - perinephric, **H-55-3**, 782–783
  - time staging of MRI appearance of cerebral hematoma, **A-99-S**, 83
- Hematopoiesis, intrathoracic extramedullary, **F-100-S**, 574
- Hematopoietic tumors, **G-84-S**, 657
- Hemidiaphragm
- paralyzed or fixed, **F-136**, 596–597

- unilateral elevated, **F-135**, 595–596
- Hemihypertrophy or hemiatrophy (asymmetry in size of bone or limb), localized or generalized, **D-13**, 254–255
- Hemithorax, opacification of one, **F-122**, 588
- Hemorrhage  
intracerebral, on CT, MRI, or angiography, **A-99**, 82–83  
parenchymal, on MRI, **M-4-S1**, 872  
perinephric, **H-55-3**, 782–783  
pulmonary, **F-12**, 506  
stages of, on MRI, **M-4-S2**, 872
- Hepatic (see also Liver)  
vein thromboembolism or obstruction on angiography, **G-189**, 711
- Hernias, nondiaphragmatic, **G-64-S**, 645–646
- High  
density renal cyst on CT, **H-34**, 773  
output heart disease, **E-39**, 472
- Hilar  
displacement, unilateral or bilateral, **F-108**, 579  
enlargement, unilateral, **F-106**, 578–579  
lesions, **F-103 to F-106**, 576–579  
lymph node enlargement, **F-103**, 576–577  
lymphadenopathy, marked, **F-104**, 577  
shadow, unilateral small, **F-107**, 579
- Hilum, mass-like pulmonary infiltrate or lesion radiating from, **F-40**, 528
- Hip  
replacement, local complications of total, **D-222-S1**, 409  
secondary osteoarthritis of, **D-221**, 408
- HIV infection, central nervous system complications of, **A-119**, 94
- Hollow viscus, perforated, in infant, **G-238**, 734
- Honeycomb lung, **F-22**, 512–513
- Humeral head, grooved defect, erosion, or deformity of, **D-168**, 373
- Humerus, erosion of medial aspect of proximal metaphyses of, **D-39**, 275
- Hydrocephalus, **A-114-1**, **A-114-2**, **M-57**, **O-10**, 90–92, 891, 936  
atrophic, **A-114-1**, 90–91  
causes of communicating, **A-114-1**, **M-57**, 90–91, 891  
causes of obstructive, **A-114-1**, **M-57**, 90–91, 891  
congenital syndromes associated with, **A-114-2**, 91–92  
fetal ventriculomegaly, **O-10**, 936  
nonabsorptive, **A-114-1**, 90–91  
obstructive, **A-114-1**, **M-57**, 90–91, 891
- Hydromyelia, causes of, **M-89-S**, 900
- Hydronephrosis, **H-49**, 780  
obstruction of ureter with or without, **H-93**, 799–800
- Hypercalcemia, **D-45-S**, 282–283
- Hypercalcemic hypercalciuria, **H-25-S**, 768
- Hypercalciuria, **D-45-S**, 282–283
- Hyperdense liver lesions, focal, on CT, **G-182**, **G-183**, 708–709
- Hyperechoic  
focus in gallbladder wall on ultrasound, **G-121**, 677  
liver lesions, focal, on ultrasound, **G-147**, 691
- Hyperlucent segment, lobe, or lung, unilateral, **F-53**, 536–537
- Hyperostosis, marked cortical, **D-99**, 323
- Hyperparathyroidism, sites of subperiosteal resorption in primary, **D-41-S**, 277
- Hyperphosphatemia, **D-45-S**, 282–283
- Hypersensitivity pneumonitis, **F-69**, 544–545
- Hypertelorism, **B-3-1**, 101–102  
congenital syndromes with, **B-3-2**, 102–103
- Hypertension, **E-37**, 471  
portal, **G-191**, 712–713  
pulmonary arterial, **E-54**, 481–482  
pulmonary venous, **E-59**, 484–485  
unilateral renal lesion that may cause, **H-59-1 to H-59-2**, 784–785
- Hypertensive cardiovascular disease, **E-37**, 471
- Hypertrophic osteoarthropathy, **D-98**, 322
- Hypervascularity, **A-101**, 84  
generalized pulmonary arterial, **E-51**, 479–480
- Hypocalcemia, **D-45-S**, 282–283
- Hypocalciuria, **D-45-S**, 282–283
- Hypodense  
liver lesions, focal, on CT, **G-180**, **G-181**, 707–708  
(low attenuation) lesion in brain stem on CT, **A-86**, 74  
mass, focal, in liver on nonenhanced CT scan, **G-180**, 707–708
- Hypodontia, **B-64**, 144–145
- Hypoechoic liver lesions, focal, on ultrasound, **G-174**, 705
- Hypopharynx  
diseases common to tropics and developing countries, **J-1-S**, 851–855  
lesions of, **B-111**, 175–176  
retention of barium in, **G-1**, 611
- Hypophosphatemia, **D-45-S**, 282–283
- Hypoplasia  
of base of skull, **A-11**, 16  
of fibula, **D-179**, 379  
odontoid (dens), **C-8**, 195–196  
of radius or thumb, **D-161**, 368–369
- Hypoplastic  
clavicle, **D-172-1**, 375  
pedicle, **C-40-1**, 211  
(spindle-shaped or stubby) terminal phalanges, **D-126**, 342–343
- Hypospadias, congenital syndromes with, **H-166**, 828
- Hypotelorism (decreased interorbital distance), **B-3-1**, 101–102
- Hypovascularity  
generalized pulmonary arterial, **E-58**, 483–484  
pulmonary, **E-57**, 483
- Ileocecal valve, enlargement of, **G-98**, 665
- Iliac horns in infant or child, **D-193-4**, 391
- Iliac veins, obstruction of inferior vena cava or, **E-71**, 490
- ILO 1980 international classification of radiographs of pneumoconioses, **F-71-S**, 546–552
- Immunocompromised patients, pulmonary disease in, **F-77**, 557
- Indentation, extrinsic, on duodenum, **G-35**, 630
- Indistinct  
epiphyses, **D-24**, 264–265  
metaphyses, **D-38**, 275
- Infections of brain identifiable on CT or MRI, **A-93**, 78
- Infectious  
lesion of bone, well-defined, often cyst-like, **D-66**, 300  
and parasitic diseases, tropical, geographic distribution of, **J-2-S**, 856–857
- Inferior vena cava  
abnormal sign in, **M-152**, 924  
anomalies of, **E-72-S**, 491  
or iliac veins, obstruction of, **E-71**, 490



- Inferior vena cava (*continued*)  
obstruction of upper, **G-189**, 711
- Infiltration, of skull sutures in infant or child, **A-41**, 35
- Infratemporal fossa lesion, **B-44**, 129
- Infratentorial  
lesions, **A-80-1 to A-80-3**, 69–71  
tumors, **A-53-2**, 46
- Infundibular narrowing or amputation, focal or diffuse, **H-21**, 765–766
- Infundibulum obstruction, gallbladder disease secondary to, **G-113**, 673
- Inner ear anomalies, **B-24**, 117–118
- Inorganic dusts that cause pneumoconiosis, **F-70-S**, 545–546
- Intercondylar notch, enlargement of distal femoral, **D-183**, 381–382
- Interlobar fissure, lobar enlargement with bulging, **F-3**, 500
- Internal auditory canal anomalies, **B-24**, 117–118
- Internal auditory meatus, erosion or widening of, **A-29**, 28–29
- Interorbital distance, decreased, **B-2**, 101
- International Nomenclature of Constitutional Diseases of Bone, **D-1-S**, 239–244
- Interpedicular distance  
increased, **C-58**, 221  
narrow, **C-57**, 220–221
- Interradicular radiolucency in jaws (between roots of teeth), **B-78**, 153–154
- Interstitial  
disease, roentgen patterns of, **F-17-S**, 509  
emphysema of stomach, **G-32**, 628–629  
fibrosis, **F-22**, 512–513  
lung disease, high-resolution CT patterns of chronic, **F-24 to F-26**, 514–516  
markings of soft tissues, swelling of, **D-270**, 439–440  
pneumonitis, usual (see Usual interstitial pneumonitis), **F-23-S1**, **F-23-S2**, 513, 514  
(reticulonodular or small irregular) pattern, diffuse pulmonary disease with, **F-16**, 508–509
- Intervertebral disks, **C-52 to C-56**, 218–220  
calcification of one or more, **C-55**, 219–220  
gas in, **C-56**, 220
- Intervertebral foramen  
enlarged, **C-44**, 213  
small or narrow, **C-43**, 212
- Intestinal  
barium, residual, after gastrointestinal study, **G-75**, 652  
ischemia, infarction, **G-69**, 647–648  
malrotation, congenital syndromes associated with, **G-66**, 646  
obstruction  
in adult, **G-78**, 653–654  
in newborn, **G-76**, 652–653  
in child, **G-77**, 653  
pseudo-obstruction, **G-79**, 654–655  
tract, intramural hematoma of, **G-104**, 669
- Intraarticular calcification, **D-243**, 419–420
- Intracerebral hemorrhage or hematoma on CT, MRI, or angiography, **A-99**, 82–83
- Intraconal mass, in eye, **B-6-1**, 104
- Intracranial (see also Brain)  
arteriovenous shunting and early venous filling on cerebral angiography, **A-104**, 86  
calcification  
curvilinear or ring-like, **A-50**, 40–41  
dense, on MRI, **M-53-S**, 890  
multiple, **A-47**, 38–39  
solitary, **A-46**, 37–38  
cavity to nasopharynx, extension of neoplasm from, **B-43**, 128–129  
fat or air lucency on plain films, CT, or MRI, **A-91-1**, **A-91-2**, 77  
lesions, CT attenuation (density) of various (relative to normal brain), **A-57-1 to A-57-3**, 49–51  
mass  
contrast enhancement patterns of, on CT, **A-58-1 to A-58-4**, 51–52  
neoplastic, **A-55-1**, 47  
nonneoplastic, **A-55-2**, 47–48  
solitary, **A-55-1**, **A-55-2**, 47–48  
pressure, increased, **A-113**, 89–90  
radiologic features of, **A-113-S**, 90  
tumors in infancy and childhood, **A-53-1 to A-53-3**, 45–46
- Intradural extramedullary lesion on myelography, CT, or MRI, **C-61**, 222–223
- Intraductal lesions, on MRI, **M-88**, **M-90**, **M-91**, **M-92**, **M-95 to M-97**, 899, 900–901, 902  
bright on T1, **M-96**, **M-97**, 902  
CSF intensity, **M-88**, 899  
dark on T1, bright on T2, mass effect, **M-91**, 900–901  
dark on T1, bright on T2, no mass effect, **M-90**, 900  
dark on T1, dark on T2, no mass effect, **M-95**, 902  
no mass effect, **M-90**, 900  
widening of spinal cord on myelography, CT, or MRI, **C-59**, 221–222
- Intramural hematoma of intestinal tract, **G-104**, 649
- Intraocular mass, **B-6-1**, 104
- Intraorbital calcification, **B-19**, 114
- Intraparotid lymphadenopathy, **M-129**, 913
- Intrasellar mass on CT or MRI, **A-26**, 26–27
- Intrathoracic extramedullary hematopoiesis, **F-100-S**, 574
- Intratracheal mass  
or nodule, solitary or multiple, **F-81-1**, 559–560  
pedunculated, **F-81-1**, 559–560
- Intrauterine growth retardation, on sonography, **O-5**, 934–935
- Intravascular disease, **M-45**, 888
- Intraventricular  
lesions, **A-80-1**, 69–70  
mass, **M-61 to M-67**, 893–894  
CSF intensity, **M-61**, 893  
dark on T1, dark on T2, **M-64**, 894  
enhancing, **M-63**, 893  
nonenhancing, **M-62**, 893  
signal void, **M-67**, 894  
tumors or cysts, **A-74**, 66–67
- Ischemic heart disease, **E-38**, 472
- Ischemic lesion, extracranial, secondarily involving brain, **A-107**, 87
- Islet cell tumors, types of, **J-5-S2**, 859
- IV urography  
dense or prolonged nephrogram on, **H-14**, 762–763  
diminished concentration of contrast medium in pelvocaliceal system on, **H-17-1**, **H-17-2**, 764  
nonvisualization or nonfunction of calyx or part of kidney on, **H-16-2**, 764  
nonvisualization or nonfunction of one kidney on, **H-16-1**, 763

- Ivory  
epiphyses, of hands and feet, **D-26**, 265–266  
vertebrae, **C-35**, 208–290
- J**-shaped sella turcica, **A-25-1**, 25–26
- Jaundice, diseases common to tropics and developing countries, **J-1-S**, 851–855
- Jaws, **B-56 to B-87**, 136–161  
expansile radiolucent lesions of, including multilocular lesions, **B-81**, 155–156  
generalized osteopenia or osteolysis of, **B-69**, 147–148  
interradicular radiolucency in (between roots of teeth), **B-78**, 153–154  
lytic lesions of (see Lytic lesions of jaws)  
mixed radiolucent and radiopaque lesions of (see Radiolucent and radiopaque lesions of jaw), **B-85-1 to B-85-3**, 157–159  
multiple well-defined lucent lesions of, **B-80**, 155  
normal anatomic radiolucencies in, **B-70-S**, 148  
periapical radiolucency in, **B-76**, 151–152  
pericoronary radiolucency in (around impacted or unerupted tooth), **B-77**, 152–153  
radiopaque lesions of (solitary, multiple, or generalized), **B-87**, 160–161  
well-defined lytic (cyst-like) lesions of, **B-72, B-79**, 149–150, 154–155
- Joint, **D-211 to D-243**, 402–420  
benign synovial lesion involving major, **D-238**, 417  
bone lesions involving both sides of, **D-239**, 417  
calcified loose bodies in, **D-241**, 418  
dislocation or subluxation, congenital syndromes with, **D-213**, 404–405  
effusion, **D-227**, 413  
laxity or hypermobility, congenital syndromes with, **D-212**, 403–404  
mobility, congenital syndromes with limited, **D-211**, 402–403  
multiple filling defects in, on arthrography, **D-240**, 418  
soft tissue mass about, **D-236**, 416  
sternoclavicular (see Sternoclavicular joints) **D-210**, 402
- Joint disease (see also Arthritis)  
diseases common to tropics and developing countries, **J-1-S**, 851–855  
monoarticular, **D-214**, 405  
polyarticular, **D-215**, 406
- Joint space  
narrowed, **D-225**, 412  
widened, **D-226**, 412–413
- Jugular  
canal, enlargement of, **A-67**, 62  
catheterization, complications of central, **E-73-S**, 491  
Juvenile chronic arthritis, classification of, **D-219-S**, 407  
Juxtadiaphragmatic lesions in children, **F-139**, 598
- K**erley lines  
acute: A, B, and C, **F-18**, 509  
chronic: A, B, and C, **F-19**, 509–510
- Kidney (see also Renal), **H-1 to H-81-S**, 755–794  
bilateral large, **H-10**, 760–761  
bilateral small, **H-8**, 758–759  
collecting system, **H-18 to H-22**, 764–766  
congenital syndromes, with renal insufficiency or nephrotomy, **H-2**, 756  
cystic diseases of, **H-30**, 771–772  
diseases common to tropics and developing countries, **J-1-S**, 851–855  
focal or annular calcification in, **H-23**, 767  
malformation or anomaly, congenital syndromes with, **H-1**, 755  
mass displacing, **H-4**, 757  
misplaced or displaced, **H-3**, 756  
nonvisualization or nonfunction of calyx or part of, on IV urography, **H-16-2**, 764  
nonvisualization or nonfunction of one, on IV urography, **H-16-1**, 763  
size, **H-6 to H-11**, 757–761  
unilateral large, **H-9**, 759–760  
unilateral small, **H-7**, 758
- Knee, **D-186, D-222-S1, D-240, M-133-S to M-139**, 383–384, 409, 418, 914–915  
absent bow-tie sign in menisci, on MRI, **M-134**, 914  
bright intramedullary signal of, with intact cortex, **M-135**, 915  
high intramedullary signal of, with disrupted cortex, **M-136**, 915  
Hoffa's fat pad mass in infrapatellar region, **M-139**, 915  
intra-articular mass with low signal on T2, **M-138**, 915  
knock-knees, **D-186**, 383–384  
lesions, **M-133-S to M-139**, 914–915  
marked low signal in marrow (diffuse) on T1 and T2, **M-137**, 915  
meniscus, linear signal in, **M-133-S**, 914  
multiple filling defects in, on arthrography, **D-240**, 418  
pitfalls involving posterior horn of lateral meniscus, on MRI, **M-133-S**, 914
- Knock-knees, **D-186**, 383–384
- Kyphosis, **C-3-1**, 189–190
- L**abor, failure of fetal head to engage during, **O-6**, 935  
Lacrimal gland enlargement, **B-23**, 116–117  
Lamina dura of teeth, loss of, **B-66**, 145–146
- Large  
abdominal gas pocket, **G-241**, 735–736  
destructive bone lesion, **D-69-2**, 302–303  
epiphyses, **D-22-1, D-22-2**, 263–264  
fetal abdomen during last trimester, on sonography, **O-22**, 940  
gastric folds, **G-26**, 625  
hands for age, **D-146**, 358  
heads in infants, **A-115-1**, 92–93  
kidney  
bilateral, **H-10**, 760–761  
unilateral, **H-9**, 759–760  
orbit, **B-5**, 103–104  
soft tissue pelvic mass, **H-133**, 817  
tongue (macroglоссия), **B-108**, 174  
ventricles in infants, **A-115-2**, 93
- Large bowel (see also Colon), **G-64-S to G-80, G-83 to G-94**, 645–655, 656–663  
fistula involving, **G-107**, 670  
localized dilatation of, **G-80**, 655
- Laryngeal tumor, **B-119**, 179

- Larynx, **B-105-1 to B-123**, 172–181  
 lesions of, **B-111**, 175–176
- Late onset dwarfism, **D-4**, 246–247
- Lateral extraconal lesions of eye, **M-118**, 909
- Left
- atrial enlargement, **E-31**, 467
  - ventricle size, in common diseases with left ventricular strain, **E-34-S**, 470
  - ventricular enlargement, **E-34**, 469
  - ventricular strain, pulmonary vasculature in common diseases with, **E-34-S**, 470
- Left to right shunt
- in congenital heart disease, **E-7**, 453
  - differential features of common, **E-7-S**, 453
- Legs, bow, **D-185**, 382–383
- Leptomeningeal lesions, **M-74**, **M-75**, 896–897
- diffuse enhancement, **M-75**, 896–897
  - focal enhancement, **M-74**, 896
- Lesions identifiable on ultrasound examination of infant brain, **A-109**, 87–88
- Lethal forms of dwarfism, **D-3**, 246
- Leukemia, consolidation (alveolar, air space) patterns in patient with, **F-14**, 507
- Leukodystrophies, **M-10-S2**, 877
- Ligament insertions, proliferation of new bone at, **D-106**, 326
- Ligaments, calcification in, **D-246-2**, 422
- Limb
- asymmetry in size of, **D-13**, 254–255
  - localized accelerated maturation, elongation, or overgrowth of, **D-14**, 255
- Linitis plastica pattern of stomach, **G-27**, 626
- Liver (see also Hepatic), **G-141-1 to G-196**, 686–715
- avascular lesions of, on angiography, contrast-enhanced CT, or MRI, **G-171**, 703
  - calcification in, **G-142**, 688
  - congenital enlargement of, **G-141-2**, 687–688
  - cystic disease of, **G-157**, 697
  - diffuse signal abnormality on MRI, **M-145-1 to M-145-3**, 920–921
  - diseases common to tropics and developing countries, **J-1-S**, 851–855
  - enlarged, **G-141-1**, **G-141-2**, 686–688
  - fatty, **G-144**, 689–690
  - focal signal abnormalities in, **M-141-1 to M-141-3**, 916–918
    - bright on T1, **M-141-2**, 917
    - bright on T2, **M-141-1**, 916
    - dark on T2, **M-141-3**, 917–918
  - lesions, **M-141-1 to M-148**, 916–922
    - focal anechoic, on ultrasound, **G-173**, 704–705
    - focal arterial or portal venous enhancement, on MRI, **M-143**, 919
    - focal, central scar, **G-128**, **M-144**, 680, 920
    - focal gadolinium enhancement, on MRI, **M-142-1 to M-142-3**, 918–919
      - focal hyperdense, on CT, **G-182**, **G-183**, 708–709
      - focal hyperechoic, on ultrasound, **G-175**, 705–706
      - focal hypodense, on CT, **G-180**, **G-181**, 707–708
      - focal hypoechoic, on ultrasound, **G-174**, 705
      - generalized high or low attenuation, on nonenhanced CT scan, **G-150**, 692–693
- mass
- categorized by age groups and other factors, **G-155-1 to G-165-S**, 694–701
  - complex, hepatic, on ultrasound, **G-177**, 706
  - neoplasm of, **G-154**, 694
  - vascular lesions of, on angiography, contrast-enhanced CT, or MRI, **G-171**, **G-172**, 703, 704
- Lobar
- air trapping, **F-54**, 537
  - atelectasis, **F-5**, 500–501
  - consolidation, chronic, **F-4**, 500
  - emphysema, infantile, **F-54**, 537
  - enlargement with bulging interlobar fissure, **F-3**, 500
- Localized elevation of hemidiaphragm, **F-138**, 597
- Long
- bones
    - diseases common to tropics and developing countries, **J-1-S**, 851–855
    - erosion of medial aspect of proximal metaphyses of, **D-39**, 275
    - short, with pronounced metaphyseal flaring, **D-35**, 272–273
    - fingers, **D-140**, 353
    - linear or curvilinear shadow in lung, **F-65**, 542
    - rib lesions, **D-207**, 400
  - Loosening and/or infection of joint arthroplasty, radiographic findings, **D-222-S2**, 409–410
  - Looser's zones, **D-110-S**, 331
  - Low attenuation (hypodense) lesion in brain stem on CT, **A-86**, 74
  - Lower extremities, **D-176 to D-197**, 378–394
  - Lucency, intracranial air or fat, on plain films, CT, or MRI, **A-91-1**, **A-91-2**, 77
  - Lucent (see also Radiolucent)
    - defects in bones of hands, wrists, feet, or ankles, **D-151**, 361–362
    - lesions
      - of bone, surrounded by marked sclerotic reaction or rim, **D-64**, 299
      - multiple well-defined, of jaws, **D-53**, 288
- Lumbar myelography, tortuous filling defect on, **C-65**, 224
- Lung (see also Pulmonary and Hilar)
- abscess, predisposing factors for, **F-47-S**, 533
  - bubbly in infants and children, **F-56**, 538
  - combined bone and, disorder, **F-67**, 543–544
  - combined skin and widespread disorder of, **F-66**, 542–543
  - densities in, multifocal ill-defined, **F-15**, 507–508
  - disease
    - common to tropics and developing countries, **J-1-S**, 851–855
    - drugs or chemicals that can induce, **F-73-S**, 553–555
    - interstitial (see Interstitial)
    - unilateral diffuse, **F-60**, 539–540
  - honeycomb, **F-22**, 512–513
  - increased pulmonary arterial circulation to one, **E-52**, 480
  - increased radiolucency of both, **F-52**, 535–536
  - long linear or curvilinear shadow in, **F-65**, 542
  - multiple cavitory lesions of, **F-49**, 534
  - neoplasms, World Health Organization 1982 histologic classification of, **F-35-S**, 524
  - pleural effusion with normal, **F-113**, 582–583
  - sharply defined cavitory lesions of, **F-43-1**, **F-43-2**, 529–531
  - subpleural lesion arising in, **F-64**, 541–542
  - unilateral hyperlucent, **F-53**, 536–537
  - widespread miliary nodules in (see Widespread, miliary nodules in lungs), **F-20-1**, **F-20-2**, 510–511
  - widespread small irregular shadows in, **F-21**, 511–512

- Lymph nodes  
 calcification in, **D-249**, 424  
 filling defect in, on lymphangiogram, **D-274**, 441
- Lymphadenopathy  
 causes of intraparotid, **M-129**, 913  
 diseases common to tropics and developing countries, **J-1-S**, 851–855  
 marked hilar, **F-106**, 578–579  
 metastatic cervical, on CT or MRI, **B-101-S**, 169
- Lymphangiectasia, **D-271**, 440
- Lymphangiogram  
 filling defect in lymph node on, **D-274**, 441  
 lymphatic obstruction on, **D-272**, 440
- Lymphatic  
 ascites, **G-235**, 732–733  
 channel obstruction, roentgen signs of, **D-273-S**, 441  
 obstruction, on lymphangiogram, **D-272**, 440  
 vessels, dysplasia, **D-271**, 440
- Lymphedema, **D-272**, 440
- Lymphoid tumors, **G-84-S**, 657
- Lymphoma, consolidation (alveolar, air space) patterns in patient with, **F-14**, 507
- Lymphothorax, **F-120**, 587
- Lysosomal storage disorders, **J-4-S**, 858
- Lytic lesions, **D-57-1 to D-76**, 292–306  
 of bone  
 containing calcium or bone density or matrix, **D-72**, 303–304  
 epiphyseal or epiphyseal-metaphyseal, **D-58**, 295  
 phalanx, in a, **D-131**, 346–347  
 solitary diaphyseal, **D-60**, 296  
 solitary metaphyseal or diaphyseal, **D-59-1 to D-59-3**, 295–296  
 solitary poorly demarcated, **D-70**, 303  
 solitary well-demarcated, **D-65**, 299–300  
 of jaws  
 ill-defined, **B-83**, 156–157  
 not necessarily involving teeth, **B-79**, 154–155  
 nonodontogenic, **B-71**, 148–149  
 well-defined (cyst-like), **B-72**, 149–150  
 patellar, **D-182**, 381  
 of spine, **C-37**, 209–210
- M**acrocephaly, **A-3-1**, 11–12  
 bone dysplasias with, **A-3-2**, 12–13  
 congenital syndromes with, **A-3-2**, 12–13
- Macrocrania, **A-3-1**, 11–12
- Macrodactyly, **D-139**, 352
- Macroglossia, **B-108**, 174
- Madelung deformity, disorders associated with, **D-164-2**, 371
- Magnetic resonance imaging (see MRI)
- Malabsorption pattern, **G-57**, 641–642
- Malar (zygomatic) hypoplasia, congenital syndromes with, **B-60**, 140
- Mammography, **I-1-1 to I-19-S**, 837–848  
 prominent (dense) ductal pattern on, **I-8**, 843
- Mandible, normal anatomic radiolucencies in, **B-70-S**, 148
- Mandibular periostitis, **B-68**, 146–147
- Mass  
 abdominal (see Abdominal, mass)  
 adnexal, **M-157-1**, **M-157-3**, 928–929  
 adrenal, **M-153-1**, **M-153-3**, 925  
 appendiceal, adjacent to appendix, **G-81**, 655–656  
 brain, **A-51-S1 to A-86**, 41–74  
 cerebellar, **M-26-1**, **M-26-2**, 883  
 cerebellopontine angle, **A-81**, 71  
 cerebellopontine angle cistern, **M-72**, **M-73**, 896  
 clivus or prepontine area, **A-70**, 63–64  
 cystic retroperitoneal, **H-131**, 816  
 diaphragmatic, **F-138**, 597  
 displacing kidney, **H-4**, 757  
 extraaxial, **M-83**, **M-84**, 898–899  
 extraconal or eye muscle, **B-6-4**, 105–106  
 extracranial (see Extracranial mass), **M-85 to M-87**, 899  
 extrapleural, associated with rib lesion, **F-126**, 590–591  
 focal hypodense, in liver on nonenhanced CT scan, **G-180**, 707–708  
 intracranial (see Intracranial mass)  
 intraocular or intraconal, **B-6-1**, 104  
 intratracheal, solitary or multiple, **F-81-1**, 559–560  
 intraventricular (see Intraventricular mass), **M-61 to M-67**, 893–894  
 involving posterior portion of third ventricle, **A-78-2**, 68–69  
 larynx and hypopharynx, **B-111**, 175–176  
 liver  
 categorized by age group, **G-155-1 to G-155-3**, 694–696  
 complex, on ultrasound, **G-177**, 706  
 low density, in spleen on CT, **G-206**, 719–720  
 middle fossa, **A-69**, 63  
 neck, **M-130**, 913  
 orbital, CT characteristics of, in children, **B-7-S**, 107  
 ovarian, in pregnancy, **O-36**, 945  
 pancreatic, echogenicity of, on ultrasound, **G-213 to G-217**, 722–724  
 paranasal sinus, **B-53**, 134–135  
 paraspinal soft tissue, **C-5**, 191–192  
 pedunculated intratracheal, **F-81-1**, 559–560  
 pelvic (see Pelvic mass)  
 pineal area, **A-79**, 69  
 pleural, **F-125-1**, 590  
 porta hepatis, **M-148**, 922  
 posterior fossa on CT, MRI, or ultrasound, **A-83**, 72–73  
 presacral, **C-50**, 217  
 prostate, **M-158-1 to M-158-3**, 930  
 pulmonary (see Pulmonary mass) **F-41**, **F-42**, 528, 529  
 pulmonary cavity, **F-51**, 535  
 pancreas on ultrasound, CT, or MRI, **G-213 to G-221**, 722–725  
 renal **H-33**, **H-38 to H-48**, **H-64 to H-69**, **M-154-1 to M-154-4**, 773, 775–780, 787–790, 925–926  
 on angiography, **H-61**, 786  
 with calcification, **H-47**, 779  
 on CT, **H-48**, 780  
 on CT or ultrasound, **H-33**, **H-43 to H-45**, 773, 778–779  
 on MRI, **M-154-1 to M-154-4**, 925–926  
 on ultrasound, **H-64 to H-68-1**, 787–789  
 pediatric, **H-40**, 776–777  
 neonatal, **H-42**, 777  
 renal collecting system with acoustic shadowing on sonography, **H-69**, 789–790  
 retrobulbar, **M-116**, 908  
 retrosternal, **F-94**, 571–572  
 sacrococcygeal, **C-50**, 217

- Mass (*continued*)
- salivary gland, **B-90**, 162
  - scrotum, **H-160**, 826
  - sinonasal (see Sinonasal mass), **M-122 to M-125**, 910–911
  - soft tissue (see Soft tissue mass)
  - solitary, in small bowel with preserved mucosa, **G-48**, 636–637
  - solitary intrinsic duodenal, **G-37**, 631
  - umbilical cord, **O-33**, 944
  - uterine, **M-155-1**, **M-156-4**, 927, 928–929
    - endometrial, **M-155-1 to M-155-4**, 927–928
    - myometrial, **M-156-1 to M-156-4**, 928–929
- Mass-like pulmonary infiltrate or lesion radiating from hilum, **F-40**, 528
- Mastoid, **B-24 to B-36**, 117–124
- abnormalities, syndromes with, **B-33-1 to B-33-3**, 122–123
  - erosion or destruction of, **B-32**, 121–122
  - increased pneumatization of, **B-33-3**, 123
  - underdevelopment of, **B-33-2**, 122
- Mastoiditis, syndromes with, **B-33-1**, 122
- Matrix-containing lesions of bone, **D-72**, **D-78-S**, 303, 308–309
- Maturation
- localized accelerated, of bone, digit, or limb, **D-14**, 255
  - skeletal (see Skeletal maturation), **D-16 to D-17-2**, 256–258
- Maxilla (see also Jaw), **B-69 to B-87**, 147–161
- normal anatomic radiolucencies in, **B-70-S**, 148
- Maxillary hypoplasia, congenital syndromes with, **B-60**, 140
- Mediastinal
- abscess, **F-102-S**, 576
  - cystic lesions on plain films, CT, or MRI, **F-93**, 570–571
  - lesion, **F-88 to F-110**, 563–581
    - anterior, **F-88**, 563–564
    - CT of, classified according to their density, **F-91-1 to F-91-5**, 566–569
    - middle, **F-89**, 564–565
    - posterior, **F-90**, 565–566
  - lymph node enlargement, **F-103**, 576–577
  - widening
    - acute diffuse, **F-102-1**, 575–576
    - superior, in children, **F-87**, 563
- Mediastinitis, acute, **F-102**, 576
- Mediastinum
- diseases common to tropics and developing countries, **J-1-S**, 851–855
  - shift of, **F-109**, 580
  - widening of, **F-101**, 574–575
- Megacolon, **G-93**, 662–663
- toxic, **G-94**, 663
- Membranous origin of skull and facial bones, **A-34-S**, 30
- MEN (multiple endocrine neoplasia) syndromes, **J-5-S1**, 858–859
- Meninges, diseases common to tropics and developing countries, **J-1-S**, 851–855
- Meniscus sign, **F-51**, 535
- Mesenteric
- lesion, cystic, identified on CT or ultrasound, **G-228**, 728
  - root, solid lesion of, on CT, **G-229**, 729
  - vascular compromise, **G-69**, 647–648
- Mesentery, **G-228 to G-230**, 728–729
- solid lesion of, on CT, **G-229**, 729
- Mesomelic dwarfism (middle segment limb shortening, radius and ulna or tibia and fibula), **D-5-2**, 247
- Mesothelial neoplasms, **F-35-S**, 524
- Metacarpals, short (see Short, metacarpals or metatarsals), **D-141**, **D-143-1 to D-143-3**, 353–354, 355–357
- Metaphyseal
- bands, radiolucent, **D-31**, 269
  - beaks, spurs, or fragmentation, **D-37**, 274
  - cupping, **D-36-1 to D-36-2**, 273–274
  - disorders, **D-31 to D-40-S**, 269–276
  - disturbances, differential diagnosis of, **D-40-S**, 276
  - epiphyseal lesion of bone, **D-6**, 248–249
  - epiphyseal region, gross disruption of, **D-30**, 268
  - flaring, short long bones with pronounced, **D-35**, 272–273
  - lesion, localized, resulting in premature closure and shortened bone, **D-29**, 268
  - lines, dense vertical, **D-33**, 270
  - solitary lytic, lesion of bone, **D-59-1 to D-59-3**, 295–296
- Metaphyses
- congenital syndromes with splaying, flaring, or widening of, **D-34-2**, 271–272
  - Erlenmeyer flask deformity of, **D-34-1**, **D-34-3**, 270–271, 272
  - indistinct frayed, **D-38**, 275
  - proximal, erosion of medial aspect of, of long bones, **D-39**, 275
  - splaying, flaring, or widening of (including Erlenmeyer flask deformity), **D-34-1**, 270–271
  - transverse lines or zones of increased density in, **D-32**, 269–270
- Metastases
- calcified pulmonary, **F-142**, 600
  - drop, to spinal subarachnoid space, sources of, **M-101-S**, 903
  - osteoblastic, **D-85**, 315
  - osteolytic, **D-86**, 315–316
  - rate of frequency of, to bone from various primary carcinomas, **D-87-S1**, 316
- Metastatic
- bone disease, distribution of, **D-87-S2**, 316
  - cervical lymphadenopathy on CT or MRI, **B-101-S**, 169
  - disease, to brain and skull, **A-54-S**, 46
- Metatarsals, short (see Short, metacarpals or metatarsals) **D-141**, **D-143-1 to D-143-3**, 353–354, 355–357
- Microaneurysms, renal, **H-60**, 785–786
- Microcephaly, **A-2**, 10–11
- Microcrania, **A-2**, 10–11
- Micrognathia, **B-59**, 138–139
- Microorganisms, pulmonary pathogenic, **F-74-S**, 555–556
- Middle ear, erosion or destruction of, **B-32**, 121–122
- Middle fossa
- floor, expansion of, **A-69**, 63
  - floor, erosion of, **A-69**, 63
  - mass in, **A-69**, 63
- Miliary nodular, reticular, or interstitial patterns, **F-17-S to F-25**, 509–515
- Miliary nodules in lungs, widespread (see Widespread, miliary nodules in lungs), **F-20-1**, **F-20-2**, 510–511
- Milkman's syndrome, **D-110-S**, 331
- Mimics, abscess, on abdominal CT, **G-244-S**, 737
- Mineralization, malignant bone neoplasm with marked, relative to destruction, **D-84**, 315
- Mirror-image branching with right aortic arch, **E-22**, 462
- Mistakes and pitfalls
- for radiologists and physicians on mammography, **I-18-S**, 847–848
  - for technologists on mammography, **I-19-S**, 848

- involving posterior horn of lateral meniscus of knee, on MRI, **M-133-S**, 914
- Mitral insufficiency, **E-32**, 468
- Modeling disorders of bone, **D-1-S to D-17-2**, 239–258
- Monoarticular joint disease, **D-214**, 405
- Moth eaten osteolytic lesion, **D-71**, 303
- Mouth, diseases common to tropics and developing countries, **J-1-S**, 851–855
- MRI
- avascular lesions of liver on, **G-171**, 703
  - cerebral infarction (stroke) on CT or angiography, **A-98**, 81–82
  - cystic or necrotic mass in posterior fossa as seen on CT or ultrasound or, **A-83**, 72–73
  - deformity and dimensional changes in eyeballs on CT or, **B-18**, 113–114
  - enlargement of rectus muscles of eyes on CT or, **B-16**, 111–112
  - extradural lesion on myelography or CT or, **C-63**, 223–224
  - fatty liver on, **G-144**, 689–689
  - infections of brain identifiable on CT or, **A-93**, 78
  - intracerebral hemorrhage or hematoma on CT, angiography, or, **A-99**, 82–83
  - intracranial fat or air lucency on plain films, CT, or, **A-91-1**, **A-91-2**, 77
  - intradural extramedullary lesion on myelography, CT, or, **C-61**, 222–223
  - intramedullary lesion on, **C-59**, 221–222
  - intrasellar or parasellar mass on, **A-26**, 26–27
  - mass in pancreas on, **G-213**, **G-214**, **G-223**, 722, 723, 726–727
  - metastatic cervical lymphadenopathy on CT or, **B-101-S**, 169
  - optic nerve enlargement on CT or, **B-14**, 110–111
  - posterior fossa tumors on, **A-82**, 72
  - soft tissue tumors with prominent fluid-fluid levels on CT or, **D-263**, 433
  - soft tissue tumors with prominent visible vascularity on CT or, **D-264**, 434
  - spinal block on, **C-64**, 224
  - subdural empyema on CT or, **A-87**, 74
  - various brain patterns seen on, **A-60 to A-86**, 54–74
  - vascular lesions of liver on, **G-171**, **G-172**, 703, 704
  - white matter disease of brain on CT or, **A-95-1 to A-95-2**, 79–80
  - widening of spinal cord on myelography or CT or, **C-59**, 221–222
- Mucoid impaction in bronchus, **F-79**, 558
- Mucopolipidoses, **J-4-S**, 858
- Mucopolysaccharidoses, **J-4-S**, 858
- Mucosa, preserved, solitary mass in small bowel with, **G-48**, 636–637
- Mucosal destruction of small bowel with or without stricture, **G-53**, 639–640
- Mucosal folds
- pattern
    - normal, small bowel dilatation with, **G-60**, 643
    - thickened, small bowel dilatation with, **G-59**, 643
    - transverse, in esophagus, **G-15**, 619
- Multilocular radiolucent lesions of jaw, **B-74**, 150–151
- Multiple endocrine neoplasia (MEN) syndromes, **J-5-S1**, 858–859
- Muscle mass, **B-6-4**, 105–106
- Muscle to fat ratio, diseases affecting, **D-267-1 to D-267-4**, 437–438
- Muscles, calcification in, **D-245-1**, **D-245-2**, 420–422
- Musculoskeletal lesions on MRI, **M-131 to M-140-S**, 914–916
- Mutilation of digits, self, **D-129-3**, 346
- Myelography
- extradural lesion on CT or MRI or, **C-63**, 223–224
  - intradural extramedullary lesion on CT or MRI or, **C-61**, 222–223
  - lumbar, tortuous filling defect on, **C-65**, 224
  - spinal block on, **C-64**, 224
  - widening of spinal cord on CT or MRI or, **C-59**, 221–222
- Myocardial infarction, complications of, requiring radiological evaluation, **E-38-S**, 472
- Myocardioathy, **E-40-1**, 473
- congenital syndromes with, **E-40-2**, 474
- “Napkin ring” lesion of colon, **G-85**, 657–658
- Narrow
- disk spaces, **G-60**, 643
  - interpedicular distance, **G-64-S**, 645–646
  - intervertebral foramen, **G-47**, 636
  - spinal canal, syndromes with, **G-64-S**, 645–646
- Narrowed joint space, **D-225**, 412
- Narrowing
- of antrum of stomach, **G-28**, 626–627
  - diffuse tracheal, **F-83**, 560–561
  - distal bile duct, **G-137**, 684–685
  - duodenal, **G-42**, 634
  - localized, of esophagus, **G-12**, 617–618
  - and renal infundibular, focal or diffuse, **H-21**, 765–766
  - segmental, of colon, **G-86**, 658
  - subglottic tracheal, **B-122**, 180–181
- Nasal cavity, **B-37 to B-55**, 124–136
- deformity, asymmetry, or opacification of, **B-37**, 124–125
  - tumors and tumor-like lesions of, **B-41-1**, 126–127
- Nasopharyngeal
- lesion, **B-44**, 129
- Nasopharynx, **B-41-1 to B-44**, 126–129
- diseases common to tropics and developing countries, **J-1-S**, 851–855
  - tumors and tumor-like lesions of, **B-41-1**, 126–127
- Neck, **B-99**, **B-104-1**, **B-104-2**, **M-130**, **O-14**, 167–168, 171, 913, 937
- lesions on MRI, **M-130**, 913
  - mass in, on MRI, **M-130**, 913
  - soft tissue mass in, **B-99**, 167–168
- Necrosis
- avascular (see Avascular necrosis), **D-48**, **D-48-S**, 284–285
  - papillary, **H-20**, 765
- Necrotic mass in posterior fossa as seen on CT, MRI, or ultrasound, **A-83**, 72–73
- Neonatal respiratory distress, **F-55**, 537–538
- Neoplasm
- bone (see Bone, neoplasms), **D-77-S1 to D-88**, 306–316
  - cardiac or pericardial, **E-43**, 475
  - extension of, from intracranial cavity to nasopharynx, **B-41-1**, 126–127
  - features useful in CT identification of various types of, **A-59-S**, 53
  - involving temporal bone, **A-31**, 29–30
  - of liver, **G-154**, 694
  - lung, World Health Organization 1982 histologic classification of, **F-35-S**, 524
  - mesothelial, **F-35-S**, 524
  - ovarian, in child, **H-183**, 834
  - periosteal or parosteal, **D-88**, 316

- Neoplasm (*continued*)  
 salivary gland, **B-91**, 163  
 Neoplasm-like lesions, **F-35-S**, 524  
 Neoplastic intracranial mass, **A-55-1**, 47  
 Nephrocalcinosis, **H-27**, 769–770  
 Nephrogram  
 dense or prolonged, on IV urography, **H-14**, 762–763  
 focal defect in, **H-13**, 762  
 Nephropathy, congenital syndromes with, **H-2**, 755–756  
 Nerve roots, on MRI, **M-104**, **M-105**, 904  
 Nerves, calcification in, **D-246-3**, 423  
 Neural arches  
 abnormal, **C-43** to **C-46-2**, 212–214  
 posterior, defective or destroyed, **C-45-1**, **C-45-2**, 213–214  
 Neurogenic bladder, **H-98**, 802  
 Neurotrophic arthropathy, **D-223**, 410  
 Neurotrophic bone changes, **D-150**, 360–361  
 Nodular patterns in lungs, **F-21**, 511–512  
 Nonabsorptive hydrocephalus, **A-114-1**, 90–91  
 Nondiaphragmatic hernias, **G-64-S**, 645–646  
 Nonenhanced CT scan  
 focal hypodense mass in liver on, **G-180**, 707–708  
 increased density within basilar cisterns on, **A-90-1**, 76  
 Nonepithelial tumor, **G-84-S**, 657  
 Noneruption, of teeth, **B-61-1**, **B-61-2**, 141–142  
 Nonneoplastic intracranial mass, **A-55-2**, 47–48  
 Nonneoplastic (tumor-like) lesions of bone, **G-84-S**, 657  
 Nonodontogenic radiolucent lesions, **B-71**, 148–149  
 Nonspinal conditions, associated with vertebral anomalies, **C-2-S**, 189  
 Nonvisualization, of gallbladder, **G-108**, 670–671  
 Normal skull variants, **A-35-S1**, 31  
 simulating a fracture, **A-35-S2**, 31–32  
 Notching on urinary tract, **H-90**, 798
- O**bstetrical ultrasound, common indications for, **O-1-S**, 933  
 Obstruction  
 at fourth ventricle outlet, **A-84**, 73  
 intestinal (see Intestinal obstruction), **G-66** to **G-78**, 646–654  
 gastric outlet, **G-30**, 627–628  
 upper airway, in a child, acute or chronic, **B-123**, 181  
 Obstructive hydrocephalus, **A-114-1**, 90–91  
 Occiput  
 flat, in infants, **A-6**, 14  
 prominent, in infants, **A-7**, 14  
 Odontogenic radiolucent lesions of jaws, **B-71**, 148–149  
 Odontoid (dens) absence, hypoplasia, or fragmentation, **C-8**, 195–196  
 Oesophagus (see Esophagus)  
 Ogilvie syndrome, **G-79**, 654–655  
 Oligohydramnios on sonography, **O-26**, 941–942  
 Oligosaccharidoses, **J-4-S**, 858  
 Omega sella, **A-25-3**, 26  
 Opacification  
 complete, of one hemithorax, **F-122**, 588  
 early venous, renal angiography, **H-62**, 786  
 of nasal cavity, **B-37**, 124–125  
 of one or more paranasal sinuses, **B-51**, 133–134  
 Opportunistic  
 organisms, **F-75-S**, 556  
 pulmonary infection, conditions that predispose to, **F-76-S**, 556–557  
 Optic canal  
 enlargement, **B-13**, 109–110  
 localized bony defect or erosion about, **B-12**, 109  
 small, **B-4**, 103  
 Optic nerve  
 distinct, with perineural enhancement on CT, **B-15**, 111  
 enlargement on CT or MRI, **B-14**, 110–111  
 lesions, **M-115**, 908  
 sheath lesions, **M-115**, 908  
 “tram-track” sign (distinct optic nerve with perineural enhancement on CT), **B-15**, 111  
 Orbital  
 lesions, **B-6-1** to **B-8**, **M-114** to **M-121**, 104–108, 907–910  
 masses in children, CT characteristics of, **B-7-S**, 107  
 roof or walls, sclerosis and thickening of, **B-9**, 108  
 (sphenoidal) fissure, **B-10**, **B-11**, 108, 109  
 enlarged superior, **B-11**, 109  
 narrowed superior, **B-10**, 108  
 wall lesions, **M-121**, 910  
 Orbits, **B-1** to **B-23**, 101–117  
 bony defect, erosion, or radiolucent lesion of, **B-8**, 107–108  
 large, **B-5**, 103–104  
 lesions involving, **B-6-1** to **B-6-6**, 104–106  
 malformation of, **B-1**, 101  
 small, **B-4**, 103  
 Organic dust disease, **F-69**, 544–545  
 Oropharynx, lesions of, **B-106**, 173–174  
 Osseous lesions, preferential site within bone of various, **D-57-1** to **D-57-4**, 292–293  
 Ossification  
 centers, epiphyseal (see Epiphyseal ossification centers) **D-19-1**, **D-19-2**, 259–260  
 cranial, delayed or defective, **A-37**, 32–33  
 incomplete, of sutures, **A-40**, 34–35  
 pubic, congenital syndromes with delayed or defective, **D-195**, 392–393  
 soft tissue, **D-244**, 420  
 soft tissue tumor with associated, **D-261**, 432–433  
 Osteoarthritis  
 of hip, secondary, **D-221**, 408  
 premature, **D-220**, 407–408  
 Osteoarthropathy, hypertrophic, **D-98**, 322  
 Osteoblastic metastases, **D-85**, 315  
 Osteolysis, **D-76**, 306  
 generalized, of jaws, **B-69**, 147–148  
 Osteolytic  
 lesion, moth eaten or permeative, **D-71**, 303  
 lesion, solitary skull, **A-23-1**, 23–24  
 metastases, **D-86**, 315–316  
 Osteomalacia, **D-44**, **D-44-S**, 280–282  
 bone and soft tissue neoplasms associated with, **D-44-S**, 282  
 Osteopenia, **B-69**, **C-36**, 147–148, 209  
 generalized, of jaws, **B-69**, 147–148  
 spinal (loss of density), **C-36**, 209  
 Osteoporosis, **D-42** to **D-43-2**, **D-228**, **D-229**, 277–280, 413, 414  
 arthritis with little or no, **D-229**, 414  
 arthritis with some, **D-228**, 413  
 generalized, **D-43-1** to **D-43-2**, 278–280

- localized or regional, **D-42**, 277–278
- Osteosarcoma, types of, **D-81-S2**, 312
- Osteosclerosis, **D-55-1 to D-56-S**, 289–292
- congenital syndromes with generalized or widespread, **D-55-2**, 290–291
  - generalized
    - classification based on its location within bone, **D-56-S**, 291–292
    - or widespread, **D-55-1**, 289–290
- Osteosclerotic bone lesions
- multiple, **D-54**, 288–289
  - solitary, **D-53**, 288
- Otosclerosis, bone disorder associated with, on tomography or CT, **B-25**, 118
- Ovarian neoplasm or cyst in child, **H-183**, 834
- Overconstriction or overtubulation (narrow diaphysis, long thin bones), **D-10**, 251–252
- Overgrowth
- generalized or widespread, of skeleton, **D-15**, 255
  - localized accelerated, of bone, digit, or limb, **D-14**, 255
- P**A chest film, blurring of heart border on, **F-63**, 541
- Pachymeningeal lesions, **M-76, M-77**, 897
- enhancing, **M-77**, 897
  - nonenhancing, **M-76**, 897
- Pancreas, **G-213 to G-227**, 722–728
- cystic lesion in, on CT or ultrasound, **G-214**, 723
  - diseases common to tropics and developing countries, **J-1-S**, 851–855
- Pancreatic
- angiographic abnormality, **G-224**, 727
  - calcification, **G-218**, 724–725
  - masses, echogenicity of, on ultrasound, **G-215 to G-217**, 723–724
- Papilla of Vater, enlarged, **G-138**, 685–686
- Papillary necrosis, **H-20**, 765
- “Paralytic ileus,” **G-61**, 643–644
- Paralyzed or paretic vocal cord, **B-121**, 180
- Paranasal sinuses, **B-41-1, B-50 to B-53, M-126**, 126–127, 133–135, 911
- fibro-osseous lesion of, on MRI, **M-126**, 911
  - fluid level in, **B-52**, 134
  - hypoplastic or absent, **B-50**, 133
  - masses in, **B-53**, 134–135
  - opacification of one or more, **B-51**, 133–134
  - osteogenic lesion of, on MRI, **M-126**, 911
  - tumors and tumor-like lesions of, **B-41-1**, 126–127
- Paraplegia, diseases common to tropics and developing countries, **J-1-S**, 851–855
- Pararenal space abscess, right anterior, **G-243**, 736
- Parasellar
- calcification, **A-48**, 39–40
  - lesions, visual estimation of CT attenuation and enhancement in various, **A-65-S**, 61
  - mass on CT or MRI, **A-26**, 26–27
- Parasitic disease, geographic distribution of tropical infectious and, **J-2-S**, 856–857
- Paraspinal soft tissue mass, **C-5**, 191–192
- Parenchymal disease, **M-1 to M-55**, 871–891
- mass effect, **M-1, M-4, M-6**, 871, 872, 874
  - enhancing, **M-6**, 874
  - nonenhancing, **M-1, M-4**, 871, 872
  - no mass effect, **M-2, M-3**, 871
  - enhancing, **M-3**, 871
  - nonenhancing, **M-2**, 871
  - nonspecific location, on MRI, **M-1 to M-4**, 871–872
- Paretic or paralyzed vocal cord, **B-121**, 180
- Parosteal neoplasm or tumor-like lesion, **D-88**, 316
- Patella
- abnormal position of, **D-181-1, D-181-2**, 380–381
  - alta, **D-181-1**, 380–381
  - baja, **D-181-2**, 381
  - congenital syndromes with absent, hypoplastic, dysplastic, bipartite, or dislocated, **D-180**, 380
- Patellar lesion, lytic, **D-182**, 381
- Pathogenic microorganisms, pulmonary, **F-74-S**, 555–556
- Pattern analysis, of cerebral vessels on angiography, **A-101**, 84
- Patterns of bone destruction, **D-61-S1**, 297
- Pear-shaped bladder, **H-99**, 802–803
- Pectus carinatum, congenital syndromes with, **F-129**, 592–593
- Pediatric renal tumors, **H-40 to H-42**, 776–777
- Pedicles
- abnormal, **C-40-1 to C-42**, 211–212
- Pedunculated intratracheal mass, **F-81-1**, 559–560
- Pelvic
- calcification, **H-138**, 819
  - configuration, types of abnormal, in infant or child, **D-193-1 to D-193-5**, 390–391
  - lesions of uterus on MRI, **M-155-1, M-156-4**, 927, 928–929
  - mass
    - on CT or sonography, **H-134 to H-136**, 817–818
    - large soft tissue, **H-133**, 817
    - lower, in infant or child, **H-137**, 818–819
  - ureter, displacement of, **H-84**, 795–796
- Pelvis, **D-191 to D-197, H-133 to H-139, H-166, H-168, H-170 to H-176**, 388–394, 817–820, 828, 829–832
- abnormal gas collection in, **H-139**, 820
  - congenital syndromes with abnormal, **D-192**, 389–390
  - crenated iliac crests in infant or child, **D-193-2**, 390
  - iliac horns in infant or child, **D-193-4**, 391
  - narrow, in infant or child, **D-193-3**, 390
  - retarded ossification of, **D-195**, 392–393
  - small sacroiliac notches in infant or child, **D-193-1**, 390
  - trident (triradiate acetabulum) in infant or child, **D-193-5**, 391
  - Type A (small, squared iliac wings and irregular acetabular roofs), **D-194-1**, 391
  - Type B (iliac wings outwardly flared and more tapered than square), **D-194-2**, 392
- Pelvicociceal system on IV urography, diminished concentration of contrast medium in, **H-17-1, H-17-2**, 764
- Pencil-pointing of outer end of clavicle, **D-175**, 377–378
- Pencil-pointing (vascular deossification of bone), **D-113**, 332
- Penis, diseases common to tropics and developing countries, **J-1-S**, 851–855
- Perforated hollow viscus in infant, **G-238**, 734
- Periapical
- lesions, **B-71**, 148–149
  - mixed, **B-85-1**, 157–158
  - radiolucency in jaws, **B-76**, 151–152
- Periarticular calcification, **D-243**, 419–420



- Pericardial  
 abnormalities, **E-47, E-48**, 477, 478  
 calcification, **E-45**, 476  
 effusion, **E-49**, 478–479  
   diseases common to tropics and developing countries, **J-1-S**, 851–855  
   neoplasm or cyst, **E-43**, 475
- Pericarditis, constrictive, **E-48**, 478
- Pericolic abscess, **G-89**, 660–661
- Pericoronaral  
 mixed lesions of jaws, **B-85-2**, 158  
 radiolucency in jaws (around impacted or unerupted tooth), **B-77**, 152–153
- Perinephric  
 abscess, **H-55-2**, 782  
 hemorrhage or hematoma, **H-55-3**, 782–783
- Perineural enhancement on CT, distinct optic nerve with, **B-15**, 111
- Periosteal  
 neoplasm or tumor-like lesion, **D-88**, 316  
 new bone formation in a child, **D-94**, 320–321
- Periosteal reactions  
 Codman triangle, **D-90**, 318  
 diagram of various, **D-89-S**, 317  
 involving clavicle, **D-174-2**, 377  
 localized, **D-92**, 318–319  
 malignant bone neoplasm with gross destruction and little or no, **D-82**, 314  
 malignant bone neoplasm with marked, **D-83**, 315  
 parallel spiculated (“hair-on-end”) or divergent spiculated (“sunray”), **D-91**, 318  
 relationship of biologic activity (growth rate) to type of bone margin and, **D-63-S**, 299  
 sclerosis of bone with, **D-97**, 322  
 thick, solid, wavy, or ballooned, involving shaft of bone, **D-99**, 323  
 widespread or generalized, usually layered, **D-93**, 319–320
- Periostitis  
 arthritis associated with, **D-232**, 415  
 mandibular, **B-68**, 146–147
- Peripelvic extravasation, **H-56**, 783
- Peripheral arteries and veins, diseases common to tropics and developing countries, **J-1-S**, 851–855
- Peripheral nerves, diseases common to tropics and developing countries, **J-1-S**, 851–855
- Perirenal space, lesions involving, **H-54**, 781–782
- Peritoneal  
 ascites, **G-81, G-82-S**, 655–656  
 disease, **G-231**, 729–730  
 fluid, in infant or child, **G-234**, 732
- Peritonitis  
 pneumoperitoneum with, **G-237**, 733–734  
 spontaneous pneumoperitoneum without, **G-236**, 733
- Periventricular disease, on MRI, **M-9, M-10-S1, M-11, M-12**, 876–878  
 in AIDS, **M-10-S1**, 877  
 mass effect  
   enhancing, **M-12**, 877–878  
   nonenhancing, **M-11**, 877  
 no mass effect  
   enhancing, **M-10**, 876  
   nonenhancing, **M-9**, 876
- Permeative osteolytic lesion, **D-71**, 303
- Petrous bone, erosion or destruction of tympanic portion of, **B-32**, 121–122
- Petrous ridge, erosion of, **A-28**, 28
- Phalangeal  
 band-like destruction or erosion of midportion of a terminal, **D-127-3**, 344  
 tufts, erosion of multiple terminal, **D-127-1**, 343–344
- Phalanges  
 amputation or absence of, **D-129-1, D-129-2**, 345–346  
 band-like destruction or erosion of midportions of terminal, **D-127-3**, 344  
 congenital syndromes with one or more short middle, **D-124**, 341  
 cyst-like lesions in, **D-131**, 346–347  
 fusion of, in digits, **D-134**, 348  
 generalized short distal, of hand, **D-125-1, D-125-2**, 342  
 hypoplastic (spindle-shaped or stubby) terminal, **D-126**, 342–343
- Pharynx, **B-41-1, B-43, B-44, B-49-1 to B-49-5, B-105-1 to B-106, B-114, B-123**, 126–127, 128–129, 132, 172–174, 177, 181  
 abnormalities of, **B-49-1 to B-49-5**, 132  
 Phosphorus concentrations, causes of altered, **D-45-S**, 282–283  
 Phrenic nerve involvement, **F-137**, 597  
 Physis (epiphyseal plate), wide, **D-28-1, D-28-2**, 267  
 Pigeon breast, **F-129**, 592–593  
 Pin-stripe (vertical) trabeculation, increased, of one or more vertebral bodies, **C-33**, 207–208
- Pineal area mass, **A-79**, 69
- Pineal region tumor, **M-32**, 884–885
- Pinna (ear cartilage), calcification in, **B-36**, 124
- Pituitary lesion, small nonenhancing, **M-31**, 884
- Pituitary stalk, enlarged, **M-29**, 884
- Placenta  
 hypoechoic lesions, on sonography, **O-31**, 944  
 mass, retroplacental, on sonography, **O-32**, 944  
 mass, solid, on sonography, **O-30**, 933  
 thickened, on sonography, **O-29**, 933  
 thin, on sonography, **O-28**, 933
- Plaques, esophageal, **G-17**, 620
- Platyspondyly, congenital, **C-15**, 199–200
- Pleural  
 calcification, **F-124**, 589  
 conditions, **F-111, F-112, F-120, F-126**, 581–582, 587, 590–591  
 diseases common to tropics and developing countries, **J-1-S**, 851–855  
 disorder, combined skin and widespread lung or, **F-66**, 542–543  
 fluid, containing eosinophils, **F-118-S1**, 585–586  
 mass, **F-125-1**, 590  
 thickening, **F-123-1**, 588–589
- Pleural effusion  
 associated with abdominal disease, **F-117**, 585  
 with enlarged heart, **F-116**, 585  
 massive, **F-121**, 587–588  
 with normal lung, **F-113**, 582–583  
 with radiographic evidence of other disease in chest, **F-114**, 583–584  
 small, with subsegmental atelectasis, **F-115**, 584
- Pneumatocele, causes of, **F-48**, 533
- Pneumatosis intestinalis, **G-70**, 648–649
- Pneumocephalus, **A-91-2**, 77

- Pneumoconiosis  
 ILO 1980 international classification of radiographs of, **F-71-S**, 546–552  
 inorganic dusts that cause, **F-70-S**, 545–546
- Pneumomediastinum, **F-110**, 580–581
- Pneumonia  
 chronic aspiration, in child, **F-7**, 502  
 recurrent, **F-6**, 501–502
- Pneumonitis  
 hypersensitivity, **F-69**, 544–545  
 usual interstitial (see Usual interstitial pneumonitis), **F-23-S1**, **F-23-S2**, 513, 514
- Pneumopericardium, **E-47**, 477
- Pneumoperitoneum  
 with peritonitis, **G-237**, 733–734  
 spontaneous, without peritonitis, **G-236**, 733
- Pneumothorax, **F-111**, 581–582
- Pointed bones, **D-150**, 360–361
- Polyarticular joint disease, **D-215**, 406
- Polydactyly, **D-138-1**, 351  
 hallucal (duplication of great toe), **D-121-2**, 338
- Polyhydramnios on sonography, **O-27-1**, **O-27-2**, 942, 943
- Polyostotic bone lesions, **D-107-1** to **D-107-3**, 326–328
- Polypoid lesions, fixed, in opacified gallbladder, **G-116**, 674
- Polyposis syndromes, **G-106**, 669–670
- Popliteal (Baker's) cyst, **D-237**, 416–417
- Porta hepatis, masses in, **M-148**, 922
- Portal  
 hypertension, **G-191**, 712–713  
 vein thrombosis, **M-146**, 921  
 veins, gas in, **G-192**, 713
- Postbulbar duodenal ulceration, **G-41**, 633
- Posterior fossa  
 CSF intensity lesion, **M-38**, 886  
 cystic or necrotic mass in, as seen on CT, MRI, or ultrasound, **A-83**, 72–73  
 lesions, **A-80-1**, **M-80**, 69–70, 898  
 tumors in children on CT or MRI, **A-82**, 72
- Posterior neural arches, defective or destroyed, **C-45-1**, **C-45-2**, 213–214  
 acquired defects or destruction, **C-45-2**, 213–214  
 congenital defects, **C-45-1**, 213
- Precursor lesions of aneurysmal bone cyst, **D-80-S3**, 311
- Preferential site of osseous lesions, **D-57-1** to **D-57-4**, 292–293
- Premature closure of growth plate, and shortened bone, **D-29**, 268
- Premature craniosynostosis, **A-1-1**, 9
- Prepontine area, mass in, **A-70**, 63–64
- Presacral mass, **C-50**, 217
- Pressure deformity, extrinsic, of bladder, **H-96**, 801
- Prevertebral (retropharyngeal) space (see Retropharyngeal (prevertebral) space) **B-105-1**, **B-105-2**, 172, 173
- Prognathism, **B-57-1**, 137  
 congenital syndromes with, **B-57-2**, 137–138
- Prominent  
 central forehead (frontal bossing), **A-8**, 14–15  
 occiput in an infant, **A-7**, 14
- Prominent ascending aorta or aortic arch, **E-62**, 486
- Proptosis (unilateral exophthalmos), **B-17**, 112–113
- Prostate, diseases common to tropics and developing countries, **J-1-S**, 851–855
- Prosthetic valve regurgitation, **E-36-S**, 471
- Proton density-weighted image, increased signal in supraspinatus tendon on, **M-131**, 914
- Protrusion acetabuli, **D-191**, 388
- Proximal radioulnar dislocation, **D-165**, 371–372
- Pseudarthrosis, **D-112**, 331–332
- Pseudodiverticulum, small bowel, **G-51-2**, 638
- Pseudoepiphyses, **D-18**, 258–259
- Pseudofractures, **D-110**, 330  
 sites of, **D-110-S**, 331
- “Pseudokidney” sign in abdomen on ultrasound, **G-259**, 745
- Pseudotumor, renal, **H-37**, 775
- PTA syndrome, **J-5-S1**, 858–859
- Pterygopalatine (sphenomaxillary) fossa, lesions of, **B-45**, 129–130
- Pubic ossification, congenital syndromes with delayed or defective, **D-195**, 392–393
- Pubic symphysis  
 bridging or fusion of, **D-197**, 393–394  
 widening of, **D-196**, 393
- Pulmonary (see also Lung and Hilar and Pulmonary artery)  
 cavity, mass in, **F-51**, 535  
 conditions, miscellaneous, **F-52** to **F-77**, 535–557  
 cystic or cavitory lesions, **F-43-1** to **F-51**, 529–535  
 edema, **F-10-1**, 504–505  
 unilateral, **F-10-2**, 505  
 hemorrhage, **F-12**, 506  
 hypovascularity, **E-58**, 483–484  
 infection, conditions that predispose to opportunistic, **F-76-S**, 556–557
- infiltrate  
 extensive, with cavitation, **F-50**, 534–535  
 localized chronic, **F-59**, 539  
 mass-like, radiating from hilum, **F-40**, 528
- lesion  
 cyst-like, **F-44**, 531  
 solitary cavitory  
 with shaggy outline, **F-46**, 532  
 with sharp outline, **F-45**, 532
- mass  
 multiple discrete, **F-42**, 529  
 shaggy, solitary or multiple, **F-41**, 528  
 solitary, **F-41**, 528
- metastases, calcified, **F-142**, 600
- nodules  
 or masses, **F-33** to **F-42**, 521–529  
 solitary, **F-37**, 525–526
- pathogenic microorganisms, **F-74-S**, 555–556
- valve obstruction, **E-57**, 483
- vascular shunt, systemic to, on angiography, **E-60**, 485
- vascularity  
 acyanotic congenital heart disease with increased, **E-16**, 460  
 acyanotic congenital heart disease with normal, **E-15**, 459  
 cyanotic congenital heart disease with increased, **E-17**, 460  
 vasculature, in common diseases with left ventricular strain, **E-34-S**, 470  
 venous obstruction, **E-59**, 484–485  
 venous return connections, anomalous, **E-25-S**, 464  
 vessels, localized enlargement of, **E-56**, 482–483
- Pulmonary artery  
 “aneurysm,” **E-55**, 482

- Pulmonary artery (*continued*)  
 catheterization, complications of central, **E-73-S**, 491  
 circulation, to one lung, increased, **E-52**, 480  
 diseases common to tropics and developing countries, **J-1-S**, 851–855  
 hypertension, **E-54**, 481–482  
 hypervascularity, generalized, **E-51**, 479–480  
 hypovascularity, generalized, **E-58**, 483–484  
 obstruction, main, **E-57**, 483  
 segment  
   in congenital heart disease, flat or concave, **E-20**, 461  
   prominence of main, **E-53**, 480–481  
 vascularity  
   in common congenital heart disease, **E-14**, 458–459  
   congenital heart diseases with decreased, **E-19**, 461
- Pulmonary disease, **F-47-S**, 533  
 in AIDS or other immunocompromised patients, **F-77**, 557  
 bilateral basilar, **F-61**, 540  
 diffuse, with mixed alveolar and interstitial pattern, **F-16**, 508–509  
 with eosinophilia, **F-68**, 544
- Pyramid, erosion of petrous, **A-28**, 28
- R**adial head hypoplasia, **D-165**, 371–372  
 Radiologic features, of increased intracranial pressure, **A-113-S**, 90  
 Radiological signs of intrauterine pregnancy (first trimester), **O-34-S**, 945
- Radiolucencies  
 increased, of both lungs, **F-52**, 535–536  
 interradiolar, in jaws (between roots of teeth), **B-78**, 153–154  
 normal anatomic, in jaws, **B-70-S**, 148  
 periapical, in jaws, **B-76**, 151–152  
 pericoronal, in jaws (around impacted or unerupted teeth), **B-77**, 152–153
- Radiolucent  
 metaphyseal bands, **D-31**, 269  
 urinary tract calculi, **H-106**, 806
- Radiolucent lesions (see also Lucent)  
 of bone, multiple, **D-74**, 304–305  
 of jaw, expansile, including multilocular lesions, **B-81**, **B-82**, 155–156  
 nonodontogenic, **B-71**, 148–149  
 of orbits, **B-8**, 107–108  
 and radiopaque lesions of jaw, mixed  
   not necessarily in contact with teeth, **B-85-3**, 158–159  
   periapical, **B-85-1**, 157–158  
   pericoronal, **B-85-2**, 158  
 in skull, solitary or multiple, **A-23-2**, 24–25
- Radiopaque lesions of jaws (multiple or generalized), **B-87**, 160–161
- Radiolunar  
 dislocation, proximal, **D-165**, 371–372  
 synostoses, **D-163**, 370
- Radius, hypoplasia or aplasia of, **D-161**, 368–369
- Rectal disease, on barium study, **G-100**, 666–667
- Rectosigmoid junction, anterior indentation on, **G-99**, 666
- Rectovaginal fistula, **G-101**, 667
- Rectum, **G-99 to G-102**, 666–668  
 diseases common to tropics and developing countries, **J-1-S**, 851–855
- Rectus muscles of eyes, enlargement of, on CT or MRI, **B-16**, 111–112
- Recurrence rates from common soft tissue sarcomas, **D-266-S**, 437
- Renal (see also Kidney)  
 aneurysms or microaneurysms, **H-60**, 785–786  
 calyces, clubbing or destruction of, **H-19**, 765  
 collecting system, mass in, with acoustic shadowing on sonography, **H-69**, 789–790  
 compression, **H-59-1 to H-59-2**, 784–785  
 cyst, high density, on CT, **H-34**, 773  
 insufficiency, congenital syndromes with, **H-2**, 755–756  
 ischemia, **H-58**, 784  
 lesions, unilateral, that may cause hypertension, **H-59-1 to H-59-2**, 784–785  
 margin, depression or scar in, **H-35-2**, 774  
 mass, **M-154-1**, **M-154-4**, 925–926  
   avascular, **H-61**, 786  
   on CT, cystic or solid, **H-43 to H-48**, 778–780  
   echo-free, on sonography, **H-64**, 787  
   multilocular or complex, on sonography, **H-68-1**, 788–789  
   neonatal, **H-42**, 777  
 outline  
   localized bulge of, **H-36**, 774–775  
   unilateral absence or blurring of, **H-5**, 757  
 parenchymal disease, **H-59-2**, 785  
 pelvis, infundibulum, or calyx, filling defect in, **H-22**, 766  
 pseudotumor, **H-37**, 775  
 transplantation, complications of, **H-81-S**, 794  
 tubular acidosis, **H-25-S**, 768  
 tumors, pediatric, **H-40 to H-42**, 776–777  
 vein thrombosis, **H-63**, 786–787
- Renal angiography  
 avascular renal mass, **H-61**, 786  
 early venous opacification, **H-62**, 786  
 renal aneurysms or microaneurysms, **H-60**, 785–786  
 renal ischemia, **H-58**, 784  
 renal vein thrombosis, **H-63**, 786–787  
 unilateral renal lesion that may cause hypertension, **H-59-1 to H-59-2**, 784–785
- Resorption  
 of inner cortical margin, **D-104**, 325  
 subperiosteal bone, **D-41**, 276–277
- Respiratory distress, neonatal, **F-55**, 537–538
- Respiratory distress syndrome, **F-11-1 to F-11-2**, 505–506
- Respiratory tract, diseases common to tropics and developing countries, **J-1-S**, 851–855
- Reticular  
 densities, acute diffuse free, **F-18**, 509  
 patterns in lungs, **F-21**, 511–512  
 “Reticulation” of soft tissues, **D-270**, 439–440
- Reticulonodular pattern  
 diffuse pulmonary disease with, **F-16**, 508–509  
 in lungs, **F-21**, 511–512
- Retrobulbar mass, **M-116**, 908
- Retrocardiac lesion, **F-62**, 540–541
- Retroduodenal space, increased, **G-34**, 629–630
- Retrogastric space, increased, **G-34**, 629–630
- Retroperitoneal  
 fibrosis, **H-128**, 814  
 mass, cystic, **H-131**, 816

- Retroperitoneum, **H-127 to H-132**, 814–816
- Retropharyngeal (prevertebral) space, increased  
in adult, **B-105-2**, 173  
in infant or child, **B-105-1**, 172
- Retrorectal space, increased, **G-102**, 667–668
- Retrosternal soft tissue mass, **F-94**, 571–572
- Reverse butterfly pattern, **F-13**, 507
- Rheumatoid-like arthritis, **D-218**, 407
- Rhinorrhea, cerebrospinal fluid, **A-118**, 94
- Rhizomelic dwarfism (proximal limb shortening, humerus, femur),  
**D-48**, 284–285
- Rib, **D-198-1 to D-208**, 394–400  
congenital syndromes with eleven pairs of, **D-198-1**, 394  
congenital syndromes with thirteen pairs of, **D-198-2**, 394  
enlargement, flaring, or cupping, multiple symmetrical anterior,  
**D-202**, 397  
lesions, **D-205 to D-208**, 398–400  
in child, **D-205**, 398–399  
extrapleural mass associated with, **F-126**, 590–591  
long, **D-207**, 400  
multiple expanding, **D-208**, 400  
short, **D-206**, 399  
margins, resorption or notching of superior, **D-204**, 398  
notching, classification of, **D-203**, 397–398  
short, **D-201**, 396  
thickened, **D-200**, 395–396  
thin, ribbon-like, or twisted, **D-199**, 394–395  
wide, **D-200**, 395–396
- Ribbon-like ribs, **D-199**, 394–395
- Rickets, **D-44**, 280–282
- Right  
atrial enlargement, **E-27**, 465–466  
ventricle, filling defect in, on angiocardiography, **E-30**, 467  
ventricular enlargement, **E-29**, 466–467
- Right to left shunt  
at atrial level, **E-10**, 456  
at ductus level, **E-13**, 458  
at ventricular level, **E-11**, 457  
in congenital heart disease, **E-8**, 454
- Ring-enhancing lesion on CT, **A-61**, 54
- Ring epiphyses, **D-25**, 265
- Ring-like intracranial calcification, **A-50**, 40–41
- Round cell lesions  
of bone, **D-81-S4**, 313  
of soft tissue, **D-257-S**, 430
- Round vertebrae, **C-23**, 203
- Rugger jersey spine, **C-31**, 207
- S**  
Saccular lesions, of bile ducts, **G-133-1**, **G-133-2**, 682–683
- Sacral agenesis or deformity, **C-47**, **C-48-1**, 214–215
- Sacrococcygeal mass, **C-50**, 217
- Sacroiliac joint abnormalities, **C-49-2**, 216–217
- Sacroiliac joint disease  
asymmetrical bilateral, **D-224-2**, 411  
erosion, widening, sclerosis and fusion, **C-49-1**, 215–216  
symmetrical bilateral, **D-224-1**, 411  
unilateral, **D-224-3**, 411
- Sacroiliac notches, small, in infant or child, **D-193-1**, 390
- Sacrum, **C-47 to C-51**, 214–218  
curved or sickle-shaped, **C-48-1**, 215
- Salivary duct stricture on sialography, **B-89**, 161–162
- Salivary gland, **B-88 to B-96**, 161–166  
abnormality, syndromes with, **B-88**, 161  
enlargement, **B-90**, 162  
lesions, **M-128**, 912–913  
neoplasm, **B-91**, 163
- “Salt and pepper” skull, **A-20**, 22
- Sandwich vertebrae, **C-32**, 207
- Scalloping  
(anterior gouge defect) of one or more vertebral bodies, **C-29**,  
205–206  
anterior and posterior, **C-28**, 205  
elevation of hemidiaphragm, **F-138**, 597  
(exaggerated concavity) of posterior surface of one or more  
vertebral bodies, **C-30**, 206  
of inner cortical margin, **D-104**, 325
- Scalp, localized bulge of, **A-10**, 16
- Scapula  
congenital syndromes with abnormal (usually hypoplasia), **D-169**,  
373–374  
lesion of, in infant or child, **D-170**, 374
- Sclerosing dysplasias of bone, classification of, **D-2-S**, 245
- Sclerosis  
of bone with periosteal reaction, **D-97**, 322  
diffuse or widespread increased, of calvarium, **A-15-1**, 18–19  
focal area of, in vertebrae, **C-34**, 208  
generalized increased, of base of skull, **A-17**, 20–21  
localized increased  
of base of skull, **A-16**, 20  
of calvarium, **A-14**, 17–18  
of orbital roof or walls, **B-9**, 108  
and periosteal reaction involving clavicle, **D-174-2**, 377  
in sacroiliac joint disease, **C-49-1**, 215–216  
of sternomanubrial synchondrosis or sternoclavicular joints, **D-210**,  
402  
terminal phalangeal (acro-osteosclerosis), **D-128**, 345  
vertebral pedicle, **C-42**, 212
- Sclerotic  
carpal or tarsal bones, **D-157-1**, 364–365  
reaction or rim, lucent lesion of bone surrounded by marked, **D-64**,  
299  
vertebrae, dense, solitary or multiple, **C-35**, 208–209
- Sclerotic focus  
in bones of hands or feet, **D-152**, 362  
in infants and children, **D-52**, 287
- Scoliosis, **C-4**, 190–191
- Scooped sella, **A-25-3**, 26
- Scrotum  
calcification in, **H-164**, 827  
mass in, **H-160**, 826
- Segmental  
atelectasis, **F-5**, 500–501  
elevation of hemidiaphragm, **F-138**, 597  
lesion, in bile ducts on cholangiography, **G-134**, 683  
narrowing of colon, **G-86**, 658
- Self-mutilation of digits, **D-129-3**, 346
- Sella region  
disease, **M-48**, **M-51**, **M-55**, 888–891

- Sella region (*continued*)  
 lesions, **M-28 to M-30**, 883–884
- Sella turcica, **A-24 to A-26**, 25–27  
 dysplastic, **A-25-4**, 26  
 elongated or stretched, **A-25-2**, 26  
 enlarged, eroded, or destroyed, **A-26**, 26–27  
 J-shaped, **A-25-1**, 25–26  
 omega or scooped, **A-25-3**, 26  
 small, **A-24**, 25
- Sellar  
 calcification, **A-48**, 39–40  
 configuration, abnormal, **A-25-1 to A-25-4**, 25–26  
 lesions, visual estimation of CT attenuation and enhancement in various, **A-65-S**, 61
- Semicircular canal anomalies, **B-24**, 117–118
- Seminal vesicles  
 calcification in, **H-149**, 823  
 diseases common to tropics and developing countries, **J-1-S**, 851–855
- Sentinel loop (localized dilatation of small or large bowel), **G-80**, 655
- Separation of skull sutures in infant or child, **A-41**, 35
- Septum pellucidum, widening of, **A-76**, 67
- Sequestrum, button, of skull, **A-22**, 22–23
- Sequestrum, bone lesion with, **D-51**, 287
- Short  
 distal phalanx of the thumb, **D-119-1 to D-119-2**, 337–338  
 fourth metacarpals, **D-143-3**, 357  
 hands and feet  
   acquired diseases causing, **D-144**, 357  
   congenital syndromes with, **D-142**, 354–355  
 limb  
   congenital syndromes with, **D-6**, 248–249  
   dwarfism, major syndromes of, **D-5-1 to D-5-3**, 247–248  
   long bones, with pronounced metaphyseal flaring, **D-35**, 272–273  
   metacarpals or metatarsals, **D-141**, 353–354  
     congenital syndromes with, **D-143-1 to D-143-3**, 355–357  
   proximal phalanx of the thumb and/or other digits, acquired or congenital, **D-120**, 338  
 rib lesions, **D-206**, 399  
 ribs, **D-201**, 396  
 squat bones, **D-7**, 249
- Shoulder lesions on MRI, **M-131**, **M-132**, 914
- Shoulders, **D-169 to D-175**, 373–378
- Shunting, intracranial arteriovenous, on cerebral angiography, **A-104**, 86
- Sialography, salivary duct stricture on, **B-89**, 161–162
- Signal void  
 extramedullary, intradural, **M-103**, 904  
 intraventricular, **M-67**, 894  
 nonspecific location, **M-52**, 890  
 sella region, **M-55**, 891  
 subarachnoid space, **M-71**, 895  
 subependymal, **M-54**, 890
- “Silhouette sign” on sonography, **H-174**, 831
- Sinonasal mass  
 vascular, with flow voids, **M-125**, 911  
 without bone changes, **M-122**, 910  
 with bony erosion, **M-124**, 911  
 with bony remodeling without erosion, **M-123**, 911
- Sinus (see also Fistula)  
 leakage, **H-56**, 783
- Sinuses (see also Paranasal sinuses)  
 disease, **M-122 to M-126**, 910–911
- Sipple syndrome, **J-5-S1**, 858–859
- Skeletal  
 dysplasias with predominant bone fragility, **D-108-1**, 328  
 fractures, **D-108-1 to D-108-4**, 328–329
- Skeletal maturation  
 generalized accelerated, **D-16**, 256  
 generalized retarded, **D-17-1**, 256–257  
 retarded, congenital syndromes with, **D-17-2**, 257–258
- Skeleton  
 diseases common to tropics and developing countries, **J-1-S**, 851–855  
 generalized or widespread overgrowth or elongation of, **D-15**, 255  
 scattered areas of decreased and increased bone density in, **D-47**, 283–284
- Skin  
 thickening over breast, **I-13**, 845  
 and widespread lung or pleural disorder, combined, **F-66**, 542–543
- Skull (see also Cranium), **A-1-1 to A-45-2**, 9–37  
 abnormal density or thickness, **A-14 to A-19**, 17–22  
 abnormal size or shape, **A-1-1 to A-13**, 9–17  
 base of, **A-27 to A-33**, 27–30  
   generalized increased density, sclerosis, or thickening of, **A-17**, 20–21  
   hypoplasia of, **A-11**, 16  
   localized increased density, sclerosis, or thickening of, **A-16**, 20  
   lesions, **M-127**, 912  
 bones of membranous origin, **A-34-S**, 30  
 button sequestrum of, **A-22**, 22–23  
 congenital conditions with increased density or thickening of, **A-15-2**, 19–20  
 decreased or absent convolutional markings, **A-42**, 36  
 destruction, **A-20 to A-23-2**, 24–25  
 diffuse or widespread demineralization or destruction of, **A-20**, 22  
 diseases common to tropics and developing counties, **J-1-S**, 851–855  
 erosion of inner table of, **A-21**, 22  
 “hair on end” patterns in, **A-45-1**, 36–37  
 increased convolutional markings, **A-43**, 36  
 increased size of vascular grooves of, **A-44**, 36  
 lesion, solitary osteolytic, **A-23-1**, 23–24  
 metastatic disease to, **A-54-S**, 46  
 radiolucent lesion or bone defect in, solitary or multiple, **A-23-2**, 24–25  
 “salt and pepper,” **A-20**, 22  
 “sunburst” patterns in, **A-45-2**, 37  
 sutures, separation or infiltration of, in infant or child, **A-41**, 35  
 Tam-O’-Shanter, **A-13**, 17  
 thinning of, generalized, **A-19**, 21–22  
 thinning of, localized, **A-18**, 21  
 variants, normal, **A-35-S1**, 31  
   simulating fractures, **A-35-S2**, 31–32  
 vault, thickening of, with basilar invagination, **A-13**, 17
- Slipped capital femoral epiphysis, **D-190**, 387–388
- Small  
 anterior fontanelle, **A-38**, 33  
 ascending aorta or aortic arch, **E-61**, 485–486  
 carpals, congenital syndromes with, **D-157-2**, 365

- Small (*continued*)
- cord (spinal)
    - diffusely, **M-93**, 901
    - focally, **M-94**, 901
  - cranium, unilateral, **A-5**, 14
  - epiphyses, **D-21-1**, **D-21-2**, 262–263
  - foramen magnum, **A-32**, 30
  - gallbladder, **G-109**, 671
  - heart, **E-42**, 474–475
  - hilar shadow, unilateral, **F-107**, 579
  - intervertebral foramen, **C-43**, 212
  - kidney
    - bilateral, **H-8**, 758–759
    - unilateral, **H-7**, 758
  - nonenhancing pituitary lesion, **M-31**, 884
  - orbit and/or optic canal, **B-4**, 103
  - pleural effusion with subsegmental atelectasis, **F-115**, 584
  - sella turcica, **A-24**, 25
  - sulci, enlarged ventricles, **M-57**, 891
  - sulci, small ventricles, **M-56**, 891
  - thoracic cage, congenital syndromes with, **F-131**, 593–594
  - thymus in infant, **F-96**, 572
  - ventricles, small sulci, **M-56**, 891
- Small bowel, **G-46 to G-63**, 635–645
- aphthoid ulcers in, **G-67**, 646–647
  - dilatation with normal mucosal fold pattern, **G-60**, 643
  - dilatation with thickened mucosal fold pattern, **G-59**, 643
  - diminished or absent fold pattern in, **G-39**, 632
  - diseases common to tropics and developing countries, **J-1-S**, 851–855
- distention
- acute nonobstructive, **G-61**, 643–644
  - chronic nonobstructive, **G-62**, 644–645
- diverticulum or pseudodiverticulum, **G-51-1**, **G-51-2**, 638
- fistula involving, **G-107**, 670
- innumerable tiny nodules in, **G-68**, 647
- localized dilatation of, **G-80**, 655
- loops
- abnormal position of, **G-46**, 635–636
  - separation or displacement of, **G-47**, 636
- mucosal destruction of, with or without stricture, **G-53**, 639–640
- multiple intraluminal, mucosal, or intramural defects in, **G-50**, 637–638
- solitary mass in, with preserved mucosa, **G-48**, 636–637
- tumors of, **G-49-S1 to G-49-S2**, 637
- Smooth colon, **G-91**, 661
- Soft tissue, **D-244 to D-274**, 420–441
- calcification in, diseases common to tropics and developing countries, **J-1-S**, 851–855
  - density, **F-91-3**, 567–568
  - diseases common to tropics and developing countries, **J-1-S**, 851–855
  - emphysema or gas, **D-269**, 439
  - nodules
    - arthritis with, **D-235**, 415–416
    - without obvious calcification, diseases common to tropics and developing countries, **J-1-S**, 851–855
  - ossification, **D-244**, 420
  - “reticulation” of, **D-270**, 439–440
  - swelling of interstitial markings of, **D-270**, 439–440
  - tumors
    - benign, **D-255**, 429
    - by location, **D-259-1 to D-259-4**, 431–432
    - “cystic,” on CT or MRI, **D-262**, 433
    - classification of, **D-254-S**, 426–428
    - common, by age, **D-258-1 to D-258-3**, 430–431
    - malignant, **D-256**, 429
    - multifocal, **D-260**, 432
    - with associated calcification or ossification, **D-261**, 432–433
    - with prominent fluid-fluid levels on CT or MRI, **D-263**, 433
    - with prominent visible vascularity on CT or MRI, **D-264**, 434
  - union between adjacent digits, **D-137**, 350–351
- Soft tissue mass
- adjacent to bone, solitary large calcified, **D-250**, 424–425
  - about joints, **D-236**, 416
  - in neck, **B-99**, 167–168
  - paraspinal, **C-5**, 191–192
  - pelvic, large, **H-133**, 817
  - retrosternal, **F-94**, 571–572
  - with underlying bone erosion or destruction, **D-251**, 425
- Sonography (see also Ultrasound)
- echo-free renal mass, **H-64**, 787
  - fetal abnormalities, **O-1-S to O-27-2**, 933–943
  - fetal ascites, **O-23**, 940–941
  - indefinite uterus sign, **H-174**, 831
  - intrauterine growth retardation, **O-5**, 934–935
  - large fetal abdomen during last trimester, **O-22**, 940
  - mass in renal collecting system with acoustic shadowing, **H-69**, 789–790
  - multilocular or complex renal mass, **H-68-1**, 788–789
  - oligohydramnios, **O-26**, 941–942
  - pelvic mass, **H-134 to H-136**, 817–818
  - polyhydramnios, **O-27-1**, **O-27-2**, 942, 943
  - prominence of central uterine echo, **H-175**, 831
  - thickened placenta, **O-29**, 943
  - uterine enlargement, **H-171**, 830
- Sound conducting system, anomalies of, **B-24**, 117–118
- Spade hands, **D-142**, 354–355
- Sphenoid wing, erosion of, **A-27**, 27–28
- Sphenoidal fissure (see Orbital (sphenoidal) fissure) **B-10**, **B-11**, 108, 109
- Sphenomaxillary (pterygopalatine) fossa, lesions of, **B-45**, 129–130
- Spina bifida aperta, **C-46-2**, 214
- Spina bifida occulta, **C-46-1**, 214
- Spinal
- block on myelography, CT, or MRI, **C-64**, 224
  - canal
    - and cord, **C-57 to C-65**, 220–224
    - syndromes with narrow, **C-57**, 220–221
    - wide, **C-58**, 221
  - cord
    - atrophy, **C-60**, 222
    - widening of, on myelography, CT, or MRI, **C-58**, 221
  - osteopenia (loss of density), **C-36**, 209
  - stenosis, **C-57**, 220–221
  - subarachnoid space, sources of drop metastases to, **M-101-S**, 903
- Spindle-shaped or stubby (hypoplastic) terminal phalanges, **D-126**, 342–343
- Spindled bones, **D-150**, 360–361

- Spine (see also Spinal and Vertebrae)
- abnormal density or destruction of vertebrae, **C-31 to C-39**, 207–210
  - abnormal pedicles, foramina, or neural arches, **C-40-1 to C-46-2**, 211–214
  - abnormal size, shape, or height of vertebrae, **C-11 to C-30**, 197–206
  - cervical, **C-6-S1 to C-10**, 192–197
  - diseases common to tropics and developing countries, **J-1-S**, 851–855
  - lesions, **M-88 to M-113**, 899–907
  - lytic lesions of, **C-37**, 209–210
  - rugger jersey, **C-31**, 207
  - straight fetal, **O-13**, 937
- Splaying
- congenital syndromes with, of metaphyses, **D-34-2**, 271–272
  - of metaphyses (including Erlenmeyer flask deformity), **D-34-1**, 270–271
- Spleen, **G-197 to G-212**, 715–722
- diseases common to tropics and developing countries, **J-1-S**, 851–855
  - low density mass in, on CT, **G-206**, 719–720
  - solitary lesion of, **G-205**, 719
- Splenic
- arteriography, abnormality on, **G-211**, 721
  - calcification
    - multiple, **G-204**, 718–719
    - solitary, **G-203**, 718
  - lesion, focal, on ultrasound, **G-206**, **G-207**, 719–720
  - vein obstruction on angiography, **G-212**, 722
- Splenomegaly
- classification of, **G-197**, 715–716
  - congenital syndromes with, **G-198**, 716–717
  - with decreased echogenicity on ultrasound, **G-200**, 717
  - with increased echogenicity on ultrasound, **G-201**, 717–718
- “Split” cortex, **D-103**, 325
- Spool-shaped vertebrae (anterior and posterior scalloping), **C-28**, 205
- Spurs, metaphyseal, **D-37**, 274
- “Squaring” of one or more vertebral bodies, **C-27**, 205
- Staging
- musculoskeletal tumors, **D-265-S1 to D-265-S3**, 434–437
  - time of MRI appearance of cerebral hematoma, **A-99-S**, 830
- Stellate lesion of breast, **I-5**, 840
- Step-like vertebrae, **C-19**, 201–202
- Sternal abnormality, congenital, **D-209-1 to D-209-3**, 401–402
- Sternoclavicular joints, erosion, sclerosis, or fusion of, **D-210**, 402
- Sternomanubrial synchondrosis, erosion, sclerosis, or fusion of, **D-210**, 402
- Sternum, **D-209-1 to D-210**, **F-129**, **F-130**, 401–402, 592–593
- Stippled epiphyses, **D-19-1**, 259
- Stomach (see also Gastric), **G-20 to G-34**, 622–630
- abnormal position of, **G-20**, 622
  - dilatation of, without obstruction, **G-31**, 628
  - diseases common to tropics and developing countries, **J-1-S**, 851–855
  - filling defect in, solitary or multiple, **G-21**, 622–623
  - interstitial emphysema of, **G-32**, 628–629
  - linitis plastica pattern of, **G-27**, 626
  - narrowing or deformity of antrum of, **G-28**, 626–627
  - obstruction of, **G-30**, 627–628
- Stones, calcium, of urinary tract, classification of, **H-25-S**, 768
- Straight fetal spine, **O-13**, 937
- Stress fracture, **D-111-S**, 331
- Stretched sella, **A-25-2**, 26
- Stroke (cerebral infarction) on CT, MRI, or angiography, **A-98**, 81–82
- Subarachnoid space
- signal void, **M-71**, 895
  - spinal, sources of drop metastases to, **M-101-S**, 903
- Subarachnoid space lesions, **M-68 to M-73**, 895–896
- cerebellopontine angle cistern, **M-72**, **M-73**, 896
  - hyperintense to brain on flair, **M-68**, 895
  - hyperintense to brain on T1, **M-69**, 895
  - isointense to CSF, **M-70**, 895
- Subchondral zones of vertebrae, increased bands of density in, **C-31**, 207
- Subclavian catheterization, complications of central, **E-73-S**, 491
- Subclavian steal syndrome, **A-108**, 87
- Subcortical disease
- mass effect
    - enhancing, **M-16**, 879
    - nonenhancing, **M-15**, 878–879
  - no mass effect
    - enhancing, **M-14**, 878
    - nonenhancing, **M-13**, 878
- Subcutaneous tissues, calcification in, **D-245-1**, **D-245-2**, 420–422
- Subdural empyema on CT or MRI, **A-87**, 74
- Subependymal disease
- enhancing, **M-8**, 875
  - nonenhancing, **M-7**, 875
- Subependymal tumor spread, **M-8-S**, 875
- Subglottic tracheal narrowing, **B-122**, 180–181
- Subluxation, atlantoaxial, **C-7-1**, 194
- congenital syndromes with, **C-7-2**, 194–195
- Subperiosteal bone resorption, **D-41**, 276–277
- sites of, in primary hyperparathyroidism, **D-41-S**, 277
- Subpleural lesion arising in lung, **F-64**, 541–542
- Subsegmental atelectasis, small pleural effusion with, **F-115**, 584
- Sudeck’s atrophy, **D-42**, 277–278
- Sulci
- enlarged, enlarged ventricles, **M-59**, 892
  - small, enlarged ventricles, **M-57**, 891
  - small, small ventricles, **M-56**, 891
- “Sunburst” pattern in skull, **A-45-2**, 37
- “Sunray” periosteal reactions, **D-91**, 318
- Superior mesenteric artery syndrome, **G-44**, 635
- Superior ophthalmic vein
- enlarged, **M-119**, 909
  - thrombosis of, **M-120**, 909
- Superior orbital (sphenoidal) fissure
- enlarged, **B-11**, 109
  - narrowed, **B-10**, 108
- Superior sulcus lesion, **F-39**, 527–528
- Superior vena caval dilatation, **E-70**, 489–490
- Supraspinatus tendon, increased signal in
- on proton density-weighted image, **M-131**, 914
  - on T2, **M-132**, 914
- Supratentorial tumors
- in infancy and childhood, **A-53-1**, 45
  - or cysts, midline, **A-72**, 65–66

## Surface

- enhancement of brain on CT, **A-88-1 to A-88-3**, 74–75
- lesion of bone, **D-88**, 316
- Sutural bones, multiple, **A-36**, 32
- Sutures
  - delayed closure or incomplete ossification of, **A-40**, 34–35
  - separation or infiltration of, in infant or child, **A-41**, 35
- “Swan-neck” deformity, arthritis with, **D-231**, 414
- Symphalangism, **D-134**, 348
- Syndactyly, **D-137**, 350–351
- Synostosis
  - radioulnar, **D-163**, 370
  - of tubular bones, **D-115**, 333
- Synovial lesion, benign, involving major joints, **D-238**, 417
- Syringomyelia, causes of, **M-89-S**, 900
- Systemic to pulmonary vascular shunt on angiography, **E-60**, 485

## TAG syndrome, **J-5-S1**, 858–859

Tall vertebrae, **C-24**, 203–204

Tam-O’-Shanter skull, **A-13**, 17

Tapering of short tubular bones of hands and feet, **D-149-1**, **D-149-2**, 360

Tarsal, **D-156 to D-160-S**, 364–368

bones, fragmented, irregular, or sclerotic, **D-157-1**, 364–365

fusion, **D-158**, 366

ossicles, congenital syndromes with accessory, **D-156**, 364

Teardrop bladder, **H-99**, 802–803

Teeth, **B-61-1 to B-67**, 141–146

congenital syndromes with multiple missing, **B-64**, 144–145

delayed eruption or noneruption of, **B-61-1**, **B-61-2**, 141–142

floating, **B-67**, 146

interradicular radiolucency in jaw between roots of teeth, **B-78**, 153–154

loss of lamina dura of, **B-66**, 145–146

mixed radiolucent and radiopaque lesion of jaw not necessarily in contact with, **B-85-3**, 158–159

pericoronar radiolucency in jaw around impacted or unerupted, **B-77**, 152–153

well-defined lytic lesion of jaw not necessarily involving, **B-79**, 154–155

Temporal bone, **B-24 to B-28**, 117–120

congenital abnormalities of, **B-24**, 117–118

lesion

dense, **A-30**, 29

of facial canal in, on tomography or CT, **B-26**, 118

neoplasm involving, **A-31**, 29–30

Temporal horn, enlarged, on MRI, **M-58-2**, 892

Temporomandibular joint disease, **B-56**, 136–137

Tendon insertions, proliferation of new bone at, **D-106**, 326

Tendons, calcification in, **D-246-2**, 422

Terminal ileum lesion, **G-63**, 645

Thickened

clavicle, **D-174-1**, 376–377

folds in duodenum, **G-40**, 632–633

gallbladder wall, striations in, **G-124**, 678–679

mucosal fold pattern, small bowel dilatation with, **G-59**, 643

placenta on sonography, **O-29**, 943

ribs, **D-200**, 395–396

## Thickening

- congenital conditions with increased, of skull, **A-15-2**, 19–20
- cortical (see Cortical thickening), **D-100**, **D-101**, 323, 324
- diffuse or widespread increased, of calvarium, **A-15-1**, 18–19
- of gallbladder wall on ultrasound, **G-122**, **G-123**, 677, 678
- generalized increased, of base of skull, **A-17**, 20–21
- of heel pad, **D-268**, 439
- of large bowel wall, **G-71-1**, 649
- localized increased
  - of base of skull, **A-16**, 20
  - of calvarium, **A-14**, 17–18
  - of orbital roof or walls, **B-9**, 108
  - pleural, **F-123-1**, 588–589
  - skin, over breast, **I-10**, 844
  - of skull vault with basilar invagination, **A-13**, 17
- of small bowel wall, **G-52**, **G-71-1**, 638–639, 649

Thin

clavicle, **D-172-1**, 375

epiphyses, **D-23**, 264

ribs, **D-199**, 394–395

Thinning

cortical (see Cortical thinning), **D-102**, 324

of skull, generalized, **A-19**, 21–22

of skull, localized, **A-18**, 21

Third ventricle, mass involving posterior portion of, **A-78-2**, 68–69

Thoracic

aorta, positional anomalies of, **E-23-S**, 463

cage, short, narrow, congenital syndromes with, **F-131**, 593–594

calcification, **F-140 to F-143**, 598–600

multiple or widespread, **F-141**, 599

solitary, **F-140**, 598–599

esophagus, extrinsic impression on, **G-6**, 614

paraspinal line, displacement of, **F-99**, 574

Thorax, anomalous arterial communication in, **E-24**, 463–464

Thromboembolism, hepatic vein, on angiography, **G-189**, 711

Thrombosis

portal vein, **M-146**, 921

superior ophthalmic vein, **M-120**, 909

Thumb

absent, short, wide, enlarged, ectopic, or triphalangeal, **D-117-1 to D-117-6**, 334–336

appearance in various syndromes, **D-118-S**, 337

broad distal phalanx of, **D-121-2**, 338

congenital abnormalities of, **D-117-1 to D-117-6**, 334–336

hypoplasia or aplasia of, **D-161**, 368–369

short distal phalanx of, **D-119-1**, **D-119-2**, 337, 338

short proximal phalanges of, **D-120**, 338

“Thumbprinting” of colon, **G-103**, 668

Thymic enlargement, **F-95**, 572

Thymus, small or absent, in infant, **F-96**, 572

Tibia, erosion of medial aspect of proximal metaphyses of, **D-39**, 275

Tibial bowing, isolated, **D-177**, 378–379

Tibiotalar tilt, **D-176**, 378

Toes, **D-117-1 to D-141**, 334–354

clubbing of, **D-133**, 348

gangrene of, **D-130**, 346

great, congenital abnormalities of, **D-122-1**, 339

Tomography

bone disorder associated with otosclerosis on CT or, **B-25**, 118

lesion of facial canal in temporal bone on CT or, **B-26**, 118



- Tongue, large (macroglossia), **B-108**, 174
- Tortuous filling defect on lumbar myelography, **C-65**, 224
- Toxic megacolon, **G-94**, 663
- Trabeculation
  - increased vertical (pin-stripe), of one or more vertebral bodies, **C-33**, 207–208
  - widespread or generalized demineralization with coarse, **D-46**, 283
- Trachea
  - anterior displacement of, **F-84**, 561
  - diseases common to tropics and developing countries, **J-1-S**, 851–855
  - narrowing
    - diffuse, **D-61-S**, 297
    - subglottic, **B-122**, 180–181
  - stripe, widening of right, **F-85**, 562
  - upper, lesions of, **B-111**, 175–176
- Tracheobronchial conditions, **F-78 to F-85**, 557–562
- Tracheoesophageal fistula, **G-8**, 615
- “Tram-track” sign, optic nerve (distinct optic nerve with perineural enhancement on CT), **B-15**, 111
- Transit time, on cerebral angiography
  - decreased, and early venous filling, **A-101**, 84
  - prolonged, **A-101**, 84
- Transverse
  - duodenum, bandlike constriction of, **G-44**, 635
  - lines or zones of increased density in metaphyses, **D-32**, 269–270
- Tricuspid insufficiency, **E-28**, 466
- Trident pelvis (triradiate acetabulum) in infant or child, **D-193-S**, 391
- Tropical infectious and parasitic diseases, geographic distribution of, **J-2-S**, 856–857
- Tropics, diseases common to, and developing countries, listing of, based on body system and organ involved, **J-1-S**, 851–855
- Tropical diseases involving hands and feet, **D-153**, 362–363
- Tubular bones, synostosis of, **D-115**, 333
- Tumor-like lesions
  - age range of highest incidence of various, **D-77-S1**, 306–307
  - benign, of bone, **D-79**, 309
  - colonic, classification of, **G-84-S**, 657
  - periosteal or parosteal, **D-88**, 316
- Tumor matrix, bone neoplasms classified by, **D-78-S**, 308–309
- Tumors
  - bone (see Bone, tumors)
  - bladder, **H-103**, 804
  - brain (see Brain, tumors)
  - colonic, classification of, **G-84-S**, 657
  - external auditory canal, **B-35**, 123–124
  - infratentorial, **A-53-2**, 46
  - intracranial, in infancy and childhood, **A-53-1**, **A-53-3**, 45–46
  - intraventricular, **A-74**, 66–67
  - laryngeal, **B-119**, 179
  - midline supratentorial, **A-72**, 65–66
  - musculoskeletal, staging of, **D-265-S1 to D-265-S3**, 434–436
  - of nasopharynx, nasal cavity, and paranasal sinuses, **B-51**, 133–134
  - pediatric renal, **H-40 to H-42**, 776–777
  - pineal region, **M-32**, 884–885
  - posterior fossa, on CT or MRI, **A-82**, 72
  - skull base, **M-127**, 912
  - of small bowel, **G-49-S1**, **G-49-S2**, 637
  - soft tissue (see Soft tissue tumors)
  - subependymal spread, **M-8-S**, 875
  - supratentorial, **A-53-1**, 45
  - types of islet cell, **J-5-S2**, 859
  - Wilms’, congenital anomalies associated with, **H-41**, 777
- Twisted
  - bones, **D-9**, 251
  - ribs, **D-199**, 394–395
- Tympanic portion of petrous bone, middle ear, or mastoid, erosion or destruction of, **B-32**, 121–122
- U**lceration
  - esophageal, solitary or multiple, **G-14**, 619
  - gastric, **G-24**, 624
  - postbulbar duodenal, **G-41**, 633
  - solitary or multiple nodules in gastrointestinal tract with large central, **G-105**, 669
- Ulcers, aphthoid, in small bowel or colon, **G-67**, 646–647
- Ulnar deviation in hands, **D-230**, 414
- Ultrasound (see also Sonography)
  - breast lesions on, **I-13 to I-15**, 845–846
    - anechoic, **I-13**, 845
    - hypoechoic, **I-14**, 846
    - hypoechoic or mixed echogenicity, **I-15**, 846
  - complex liver mass on, **G-177**, 706
  - cystic abdominal mass in fetus or newborn on, **G-254**, 742
  - cystic lesion in pancreas, on CT or, **G-214**, 723
  - cystic mesenteric lesion identified on, **G-228**, 728
  - cystic or necrotic mass in posterior fossa as seen on CT or MRI or, **A-83**, 72–73
  - fatty liver on, **G-144**, 689–690
  - fetal anomalies detectable by, **O-2**, 933–934
  - fetal cystic abdominal masses, **O-20-1 to O-20-2**, 939–940
  - focal splenic lesion on, **G-206**, **G-207**, 719–720
  - generalized or multifocal decreased or increased echogenicity of liver on, **G-147**, **G-148**, 691–692
  - gynecological, common indications for, **H-169-S**, 829
  - hyperechoic focus in gallbladder wall on, **G-121**, 677
  - lesions identifiable on, examination of infant brain, **A-109**, 87–88
  - liver lesion on, **G-173 to G-176**, 704–706
    - anechoic, **G-173**, 704–705
    - hyperechoic, **G-175**, 705–706
    - hypoechoic, **G-174**, 705
    - isoechoic, **G-176**, 706
  - nonshadowing lesion in gallbladder on, **G-117**, 675
  - obstetrical, common indications for, **O-1-S**, 933
  - placental abnormalities, **O-28 to O-32**, 943–944
  - “pseudokidney” or “bull’s-eye” sign in abdomen on, **G-259**, 745
  - splenomegaly with decreased echogenicity on, **G-200**, 717
  - splenomegaly with increased echogenicity on, **G-201**, 717–718
  - striations in thickened gallbladder wall on, **G-124**, 678–679
  - thickening of gallbladder wall on, **G-122**, **G-123**, 677, 678
- Umbilical cord enlargement or mass, **O-33**, 944
- Underconstriction or undertubulation (wide diaphysis), localized or generalized, **D-11**, 252–253
- Upper airway
  - infection, **F-47-S**, 533
  - obstruction in child, acute or chronic, **B-123**, 181
- Upper extremities, **D-161 to D-168**, 368–373
- Upper trachea, lesions of, **B-111**, 175–176

- Ureter, **H-82 to H-95**, 794–800  
 diseases common to tropics and developing countries, **J-1-S**, 851–855  
 displacement of pelvic, **H-84**, 795–796  
 lateral deviation of upper, **H-83**, 795  
 medial deviation of upper, **H-82**, 794–795  
 obstruction of, with or without hydronephrosis, **H-93**, 799–800
- Ureteral  
 calcification, **H-85**, 796  
 defect  
   multiple, **H-89**, 797–798  
   solitary, **H-86, H-87**, 796, 797  
 extravasation or fistula, **H-95**, 800
- Ureterectasis, segmental or diffuse, **H-91**, 798–799
- Urethral  
 diseases common to tropics and developing countries, **J-1-S**, 851–855  
 filling defect, intrinsic or extrinsic, **H-115**, 809–810  
 outpouching, **H-116**, 810
- Urinary tract  
 calculi, causes of, **H-106**, 806  
 classification of calcium stones in, **H-25-S**, 768  
 obstruction, below bladder in child, **H-111**, 808  
 vascular impressions on, **H-90**, 798
- Urography  
 dense or prolonged nephrogram on, **H-14**, 762–763  
 IV (see IV urography), **H-12 to H-18, H-57**, 761–765, 783  
 striated nephrogram on, **H-15**, 763
- Usual interstitial pneumonitis  
 entities that can produce histologic changes similar to, **F-23-S2**, 514  
 synonyms for idiopathic or, **F-23-S1**, 513
- Uterine  
 echo, prominence of central, on sonography, **H-175**, 831  
 enlargement, on sonography, **H-171**, 830  
 mass, **M-155-1 to M-156-4**, 927–929
- Uterus sign, indefinite, on sonography, **H-174**, 831
- V**acuum disks, **C-56**, 220
- Vagina, diseases common to tropics and developing countries, **J-1-S**, 851–855
- Vaginal fistula, **H-168**, 829
- Vapors, noxious, that cause pulmonary damage, **F-72-S**, 553
- Varices, esophageal, **G-18**, 621
- Vas deferens, calcification in, **H-149**, 823
- Vascular  
 calcification, **D-247**, 423  
 deossification of bone, **D-113**, 332  
 filling on cerebral angiography, lack of, **A-101**, 84  
 grooves of skull, increased size of, **A-44**, 36  
 impression  
   extrinsic, on esophagus, **G-7**, 614  
   on urinary tract, **H-90**, 798  
 lesions, of liver on angiography, contrast-enhanced CT, or MRI, **G-172**, 704  
 redistribution, **E-59**, 484–485  
 ring, **E-21-S**, 462  
 sinonasal mass with flow voids, **M-125**, 911
- Vasculitis, causes of, **M-4-S4**, 873–874
- Vater, enlarged papilla of, **G-138**, 685–686
- Venous  
 catheterization, complications of central, **E-73-S**, 491  
 filling, early  
   decreased transit time and, **A-101**, 84  
   with intracranial arteriovenous shunting, **A-104**, 86  
 opacification, early, renal angiography, **H-62**, 786  
 vascularity, increased pulmonary, **E-59**, 484–485
- Ventricles, **M-56 to M-60**, 891–892  
 enlarged, enlarged sulci, **M-59**, 892  
 enlarged, small sulci, **M-57**, 891  
 large, in infants, **A-115-2**, 93  
 lateral, asymmetrically enlarged, on MRI, **M-58-1**, 891  
 mass involving posterior portion of third, **A-78-2**, 68–69  
 small, small sulci, **M-56**, 891
- Ventricular  
 configuration, abnormal, **M-60**, 892  
 level, right to left shunt at, **E-11**, 457  
 margins, enhancing, on CT, **A-89**, 75–76  
 wall nodules, **A-75**, 67
- Vertebrae (see also Spine)  
 abnormal density or destruction of, **C-31 to C-39**, 207–210  
 abnormal size, shape, or height of, **C-11 to C-30**, 197–206  
 beaked, in child, **C-21**, 202–203  
 biconcave (“fish”), **C-19**, 201–202  
 block, **C-25**, 204  
 bone-in-bone, **C-32**, 207  
 coronal cleft, **C-13**, 198  
 cuboid, **C-22**, 203  
 lesion of body and appendages of, with expansile remodeling, **C-39**, 210  
 dense sclerotic, solitary or multiple, **C-35**, 208–209  
 enlargement of one or more, **C-26**, 204–205  
 focal area of sclerosis in, **C-34**, 208  
 fused, **C-25**, 204  
 increased bands of density in subchondral zones of, **C-31**, 207  
 ivory, **C-35**, 208–209  
 multiple collapsed, **C-18**, 201  
 plana, **C-17**, 200  
 round, **C-23**, 203  
 sandwich, **C-32**, 207  
 solitary collapsed, **C-17**, 200  
 spool-shaped, **C-28**, 205  
 step-like, **C-19**, 201–202  
 supernumerary, absent, partially formed, or block, **C-11**, 197–198  
 tall, **C-24**, 203–204  
 wedged, **C-20**, 202
- Vertebral  
 abnormality, congenital syndromes with, **C-1**, 187–189  
 anomalies, nonspinal conditions associated with, **C-2-S**, 189  
 malsegmentation (supernumerary, absent, partially formed, or block vertebrae), **C-11**, 197–198
- Vertebral bodies  
 anterior gouge defect (scalloping) of one or more, **C-29**, 205–206  
 exaggerated concavity (scalloping) of posterior surface or one or more, **C-30**, 206  
 increased vertical (pin-stripe) trabeculation of one or more, **C-33**, 207–208  
 prominent anterior canal (central vein groove) of, **C-14**, 199  
 “squaring” of one or more, **C-27**, 205

Vertebral body abnormalities, **M-108 to M-113**, 906–907  
diffuse, on MRI, **M-111 to M-113**, 907  
focal  
    with decreased signal, **M-108**, 906  
    with high signal, **M-109, M-110**, 906  
Vertebral pedicles  
    abnormal size or shape of, **C-40-1 to C-40-4**, 211  
    absent or hypoplastic, **C-40-1**, 211  
    dysplastic, **C-40-3**, 211  
    enlarged, **C-40-2**, 211  
    erosion or destruction of, **C-41**, 212  
    flattened, **C-40-4**, 211  
    sclerosis, **C-42**, 212  
Vertical (pin-stripe) trabeculation, increased, of one or more vertebral bodies, **C-33**, 207–208  
Vesicoureteral reflux, **H-92**, 799  
Vessel walls, contour irregularity of cerebral, **A-101**, 84  
Vestibular aqueduct anomalies, **B-24**, 117–118  
Viscus, perforated hollow, in infant, **G-238**, 734  
Visual estimation, of CT attenuation and enhancement in various sellar and parasellar lesions, **A-65-S**, 61  
Vocal cord, paralyzed or paretic, **B-121**, 180  
VSD, cardiovascular anomalies associated with, **E-12-S1**, 457–458

**W**ater density, mediastinal lesions, on CT, **F-91-2**, 567  
Wedge vertebrae, **C-20**, 202  
Wermer syndrome, **J-5-S1**, 858–859  
Whiskering, bony (proliferation of new bone at tendon and ligament insertions), **D-106**, 326  
White matter disease of brain on CT or MRI, **A-80-1 to A-80-2**, 69–70  
Wide  
    diametaphysis, **D-11**, 252–253  
    diaphysis, **D-12**, 253  
    disk spaces, **C-53**, 219  
    epiphyseal plate (physis), **D-28-1, D-28-2**, 267  
    ribs, **D-200**, 395–396

Widened joint space, **D-226**, 412–413  
Widening  
    acute diffuse mediastinal, **F-102-1**, 575–576  
    congenital syndromes with, of metaphyses, **D-34-2**, 271–272  
    of duodenal loop, **G-36**, 630–631  
    of internal auditory meatus, **A-29**, 28–29  
    of mediastinum, **F-101**, 574–575  
    of metaphyses (including Erlenmeyer flask deformity), **D-34-1**, 270–271  
    of orbital (sphenoidal) fissure, **B-11**, 109  
    of pubic symphysis, **D-196**, 393  
    of right tracheal stripe, **F-85**, 562  
    of sacroiliac joints, **C-49-1**, 215–216  
    of septum pellucidum, **A-76**, 67  
    of spinal cord on myelography, CT, or MRI, **C-59**, 221–222  
    superior mediastinal, in children, **F-87**, 563  
Widespread  
    abdominal calcification, **G-252**, 741  
    areas of bone destruction, **D-75**, 305  
    irregular or nodular esophageal mucosa, **G-16**, 620  
    lung or pleural disorder, combined skin and, **F-66**, 542–543  
    miliary nodules in lungs, **F-20-1**, 510–511  
        of newborn, **F-20-2**, 511  
    osteosclerosis, **D-55-1 to D-56-S**, 289–292  
    small irregular shadows in lungs, **F-21**, 511–512  
Wilms' tumor, congenital anomalies associated with, **H-41**, 777  
World Health Organization 1982 histologic classification of lung neoplasms, **F-2**, 499–500  
Wormian bones, multiple, **A-36**, 32  
Wrists, well-defined solitary or multiple lucent defects in bones of, **D-151**, 361–362

**X**anthomatous lesions of bone, **D-80-S2**, 311

**Z**ygomatic (malar) hypoplasia, congenital syndromes with, **B-60**, 140