

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	ABDOMEN	ABDOMEN 01	Large kidneys due to adult polycystic kidney disease. Contrast residue in colonic diverticula (stones are not that dense).
QUIZ	ABDOMEN	ABDOMEN 02	Two cases of splenomegaly with LUQ mass displacing stomach o right.
QUIZ	ABDOMEN	ABDOMEN 03	Pelvic mass due to markedly distended bladder. Note that you cannot identify a bladder beneath the mass as you could if this were a non-bladder mass.
QUIZ	ABDOMEN	ABDOMEN 04	Patient with lung abnormalities, Air-fluid levels in the bowel due to enteritis and a right upper quadrant density which could be a gallstone but actually was do to an accessory nipple. Raised skin lesions show up very well.
QUIZ	ABDOMEN	ABDOMEN 05	Neurofibromatosis with multiple densities overlying the abdomen. On a plain roentgenogram you would never see abdominal masses this small unless they were calcified. Skin lesion, on the other hand, show up very well.
QUIZ	ABDOMEN	ABDOMEN 06	Perforated duodenal ulcer. Pneumoperitoneum well seen on upright chest image and left lateral decubitus view.
QUIZ	ABDOMEN	ABDOMEN 07	Two cases of the "football" sign or air bubble under the anterior abdominal wall in cases of pneumoperitoneum and supine images. The margin of the air bubble is best seen where it crosses the liver.
QUIZ	ABDOMEN	ABDOMEN 08	Large pneumoperitoneum outlining bowel, falciform ligament and dome of liver.
QUIZ	ABDOMEN	ABDOMEN 09	Pneumoperitoneum seen on abdomen upright view but not on the chest. Sometimes angling of the x-ray beam compromises what should be good views, so make sure to look at all available images.

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QUIZ	ABDOMEN	ABDOMEN 10	Pneumoperitoneum showing the three supine image signs: outlining of falciform ligament, visualization of outside of bowel wall (LLQ), and air bubble beneath anterior abdominal wall the margin of which is best seen over the liver.
QUIZ	ABDOMEN	ABDOMEN 11	"Double wall" sign--being able to see the outside of the bowel wall--in a post op case with adynamic ileus and dilated small bowel.
QUIZ	ABDOMEN	ABDOMEN 12	Colon interposition between dome of liver and right hemidiaphragm mimics pneumoperitoneum. However, hemidiaphragm appears too thick and you can see the haustra.
QUIZ	ABDOMEN	ABDOMEN 13	Air in the portal vein branches--tends to be carried to small peripheral branches in contrast to bile duct air which concentrates in the major branches. Portal vein air often means dead bowel.
QUIZ	ABDOMEN	ABDOMEN 14	Air (or other gas) in bile ducts--post sphincterotomy in this case. Any communication with the bowel can cause this as well as infection by gas-producing organisms.
QUIZ	ABDOMEN	ABDOMEN 15	Small bowel obstruction. Dilated small bowel loops with air-fluid levels. "String of pearls" sign. No significant colon air.
QUIZ	ABDOMEN	ABDOMEN 16	Sigmoid volvulus. Lots of dilated colon with large loop of sigmoid arising from pelvis. Differential: distal colon obstruction versus adynamic ileus.
QUIZ	ABDOMEN	ABDOMEN 17	Cecal volvulus. Cecum flipped to left upper quadrant. Only one large focus of dilated colon in contrast to sigmoid volvulus. Second most common volvulus.
QUIZ	ABDOMEN	ABDOMEN 18	"Featureless" bowel--transverse colon without haustra. Usually inflammatory bowel disease or sometimes ischemia. This was ulcerative colitis.

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QUIZ	ABDOMEN	ABDOMEN 19	Two cases of LLL lung infiltrates seen on the upright view of the abdomen. Lower lobe pneumonia can present as abdominal pain and result in abdomen images being ordered. Check the lower lungs.
QUIZ	ABDOMEN	ABDOMEN 20	Small bowel obstruction. Dilated small bowel with air-fluid levels and little colon air. Wire sutures indicate prior surgery so adhesions are a likely cause of the SBO.
QUIZ	ABDOMEN	ABDOMEN 21	RUQ calcification superimposed on contrast-filled gallbladder. Follow up shows RUQ surgery (?cholecystectomy) but calcification is still present. Renal stone. Differential for right upper quadrant calcification includes gallstone and renal stone. Right kidney is posterior to gallbladder.
QUIZ	ABDOMEN	ABDOMEN 22	Nephrocalcinosis in renal tubular acidosis. Calcifications are clustered in the papillae.
QUIZ	ABDOMEN	ABDOMEN 23	Oxalosis with diffuse renal parenchymal calcification.
QUIZ	ABDOMEN	ABDOMEN 24	Small calcifications projected near symphysis in male pelvis are usually prostatic calculi, associated with chronic inflammation.
QUIZ	ABDOMEN	ABDOMEN 25	Pneumoperitoneum seen better on lateral view of the chest. In one study 80 % seen on frontal and 100% on lateral (Woodring)
QUIZ	ABDOMEN	ABDOMEN 26	Two cases of pancreatic calcifications in chronic pancreatitis. Also vascular calcifications and phleboliths. Some phleboliths have radiolucent centers which helps differentiate them from ureteral calculi.

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QUIZ	ABDOMEN	ABDOMEN 27	AVN of femoral heads due to steroid treatment--abnormal radiodensity of heads and irregularity of articular surface, yet joint cartilage is still relatively preserved--this is a primary femoral head process.
QUIZ	ABDOMEN	ABDOMEN 28	Bladder calculi. Note how they conform to bladder location on the decubitus view. May be associated with some foreign matter in the bladder acting as a nidus for calcification.
QUIZ	ABDOMEN	ABDOMEN 29	Calcified gallbladder wall. "Porcelain gallbladder". 100% incidence of chronic inflammation and 25 % incidence of gallbladder cancer.
QUIZ	ABDOMEN	ABDOMEN 30	Large calcified fibroids of the uterus in two patients.
QUIZ	ABDOMEN	ABDOMEN 31	"Staghorn" calculi--usually magnesium ammonium phosphate stones in patient with Proteus infection. Also SBO, intestinal tube.
QUIZ	ABDOMEN	ABDOMEN 32	Scout and postvoid images from IVP in patient with dermoid cyst. Mass is fat density (between soft tissue and air) and has teeth in it.
QUIZ	ABDOMEN	ABDOMEN 33	Calcified vasa. Indicates patient is diabetic.
QUIZ	ABDOMEN	ABDOMEN 34	Calcified spleen in sickle cell disease. Several cases as seen on abdomen and chest images.
QUIZ	ABDOMEN	ABDOMEN 35	Retained sponge after surgery. Note wiggly wire-like marker which corresponds to the colored thread which you can see in OR 4 x 4 pads.
QUIZ	ABDOMEN	ABDOMEN 36	Needle on syringe in "sports" bra.
QUIZ	ABDOMEN	ABDOMEN 37	Perfume sample vials used for "crack". Patient forgot and left them in clothing.
QUIZ	ABDOMEN	ABDOMEN 38	Fleeing police , this individual tried to swallow "crack" vial but aspirated it and got post obstructive pneumonia.

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QUIZ	ABDOMEN	ABDOMEN 39	Two cases demonstrating the appearance of a mass in addition to the urinary bladder which is separated from the mass by fat. The patient with the hemiarthroplasty had an ovarian tumor. The patient with the dynamic hip screw and degenerative arthritis of the other hip had a fibroid uterus.
QUIZ	ABDOMEN	ABDOMEN 40	Laminated bladder calculus.
QUIZ	ABDOMEN	ABDOMEN 41	Pneumoperitoneum better seen on lateral view. Also pleural effusions.
QUIZ	ABDOMEN	ABDOMEN 42	Prostatic calculi. Chronic prostatitis.
QUIZ	ABDOMEN	ABDOMEN 43	Small bowel obstruction. Many markedly dilated loops of small bowel with air-fluid levels(need horizontal beam image to see these) and "string of pearls" sign. No definite colon air.
QUIZ	ABDOMEN	ABDOMEN 44	Small bowel obstruction. Pneumatosis of bowel wall indicating ischemic bowel.
QUIZ	ABDOMEN	ABDOMEN 45	Sigmoid volvulus. Contrast enema shows "bird's beak" termination of contrast column at site of twist.
QUIZ	ABDOMEN	ABDOMEN 46	Laminated fecalith. The size is not unusual, although difficult to understand knowing the normal size of the appendix.
QUIZ	ABDOMEN	ABDOMEN 47	Metastasis to right L2 pedicle from lung cancer.
QUIZ	ABDOMEN	ABDOMEN 48	Psoas hematoma in hemophiliac cause femoral nerve entrapment and lower extremity symptoms. Note enlarged left psoas compared to right.
QUIZ	ABDOMEN	ABDOMEN 49	Patient was shot in groin with shotgun. Several pellets were near region of femoral artery. On a later admission pellets are seen lined up in a distal vessel in the leg to which they had embolized.

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QUIZ	ABDOMEN	ABDOMEN 50	Birdshot closely clustered together-- how could this be.. Injury do to "non- lethal" bean-bag round which in this case penetrated the victim.
QUIZ	ABDOMEN	ABDOMEN 51	Tiny shot from pistol/revolver shotshell- maybe useful for shooting rats.
QUIZ	AGRAM	AGRAM01	Normal single contrast hip arthrogram. Knowing where the joint capsule is located helps with injections and aspirations.
QUIZ	AGRAM	AGRAM02	Shoulder arthrogram demonstrating rotator cuff tear. Contrast medium injected into the glenohumeral joint also fills the subdeltoid-subacromial bursa. Axillary recess and subscapular recess (beneath coracoid process) are both well filled. These are favorite gathering spots for loose bodies.
QUIZ	AGRAM	AGRAM03	Shoulder arthrogram showing inflammatory changes with filling defects due to hyperplastic synovium and lymphatic filling with contrast.
QUIZ	AGRAM	AGRAM04	Shoulder arthrogram demonstrating rotator cuff tear. Contrast medium injected into the glenohumeral joint also fills the subdeltoid-subacromial bursa. Scout image shows degenerative change of shoulder joint and superior subluxation of humeral head with decreased distance between head and acromion--this in itself suggests rotator cuff degeneration.
QUIZ	AGRAM	AGRAM05	
QUIZ	AGRAM	AGRAM06	Shoulder arthrogram in adhesive capsulitis. No axillary recess. Lymphatic filling indicating considerable injection pressure. Volume injected only 10cc.(Shoulder usually holds 15-16 cc) The biceps tendon is well seen in the biceps tendon sheath.

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QUIZ	AGRAM	AGRAM07	Shoulder arthrogram demonstrating rotator cuff tear. Contrast medium crossing the humeral neck on the axillary view indicates a tear, not demonstrated on internal and external rotation views. If you rotate the patients hand under fluoro after completing the injection, you will often see the contrast run through the cuff. Don't move arm with needle in.
QUIZ	AGRAM	AGRAM08	Elbow joint single contrast arthrogram. Injection is made between radial head and capitellum. Note dorsal angulation of distal humerus from old, healed supracondylar fracture.
QUIZ	AGRAM	AGRAM09	SI joint contrast injection showing linear joint cavity.
QUIZ	AGRAM	AGRAM10	Knee arthrogram in patient with PVNS. There is a popliteal cyst with filling defects due to the PVNS. Any process with hyperplastic synovium could have this appearance.
QUIZ	AGRAM	AGRAM11	Double contrast knee arthrogram showing tear of lateral meniscus and contrast medium in small meniscal cyst.
QUIZ	AGRAM	AGRAM12	Knee arthrogram (double contrast) in patient too large for MR scanner shows medial meniscus tear and popliteal cyst.
QUIZ	AGRAM	AGRAM13	Knee arthrogram of patient with gout and popliteal cyst filled with tophi. Cyst did not fill well on arthrogram. Ultrasound showed cyst. Both modalities fail to show popliteal cysts in a small percentage of patients (2%).
QUIZ	BT	BT001	Posterior vertebral scalloping due to astrocytoma. If scalloping is localized think of focal lesions rather than the dural ectasia differential.

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QUIZ	BT	BT002	Simple bone cyst. No matrix, well marginated. "Fallen fragment" sign may be present. Over 1/2 present with pathologic fracture. Favored location: Humerus, femur. Ages: 5-20.
QUIZ	BT	BT003	Osteogenic Sarcoma (periosteal). Medullary cavity usually uninvolved. Age range: 10-30. Location: Femur, tibia: diaphysis.
QUIZ	BT	BT004	Soft tissue hemangioma. Calcifications, phlebolith in 40%. Note pressure erosion of adjacent bone, which is typical.
QUIZ	BT	BT005	Liposarcoma: Fat density seen on both plain film and CT scan. (Calcification common) Septa and soft tissue densities within the fat, which enhance with IV contrast are worrisome for malignancy. Lipoma should be pure fat.
QUIZ	BT	BT006	Aneurysmal bone cyst body and pedicle L-3. Wide-eyed dog.
QUIZ	BT	BT007	Osteoid osteoma intertrochanteric portion right femur.
QUIZ	BT	BT008	Erosions of proximal radius due to PVNS. This is not the favorite joint for PVNS. The knee is. MRI shows low signal areas due to hemosiderin. PVNS involves one joint. Not calcified.
QUIZ	BT	BT009	Intraosseous Lipoma: Radiolucent lesion with central calcification. Note fat density and signal properties on CT and MRI. May be asymptomatic or painful. Fibula followed by femur most favored locations. Usually have thin sclerotic rim. May expand bone, but periosteal reaction absent. Central calcification or ossification common.

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QUIZ	BT	BT010	Ewing's Sarcoma humerus. At age 38, metastasis would have been a more likely bet. Other primary possibilities include: MFH, fibrosarcoma, telangectatic osteosarcoma, and primary lymphoma of the bone.
QUIZ	BT	BT011	Osteoid osteoma of tibia. Note: Nidus and cortical thickening. DDX for cortical thickening includes stress fracture and sclerosing osteomyelitis.
QUIZ	BT	BT012	Giant cell tumor. Expansile. Extends to bone end. No matrix calcification. Age range: 20-40. Most common location: femur and tibia.
QUIZ	BT	BT013	Giant cell tumor. Tibia. 24 year old female.
QUIZ	BT	BT014	Giant cell tumor tibia. Expansile eccentric lesion extending right up to the articular surface. Well-defined margin. No matrix calcification on plain film. Age usually 20-40 years. Dr. Frassica often treats these with meticulous curettage and filling with bone cement with excellent results.
QUIZ	BT	BT015	Chondrosarcoma acetabulum. CT shows cartilage matrix calcification and cortical disruption.
QUIZ	BT	BT016	Chondrosarcoma. Pain and enlargement make malignancy very possible. Cartilage matrix. Differential with osteochondroma. Age range: 30-55. Most common location: Femur, innominate bone.
QUIZ	BT	BT017	Chondroblastoma patella. Well-defined lytic lesion with sclerotic margin. Patella behaves like apophysis/epiphysis hence is a site for this lesion.
QUIZ	BT	BT018	Osteogenic sarcoma left ilium. Age range: 10-25. Bone pain and swelling is the most common clinical presentation. Knee region most common.

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QUIZ	BT	BT019	Enchondroma of distal femur with typical stippled cartilage type matrix calcification
QUIZ	BT	BT020	Low grade chondrosarcoma left femur. Pain may be a clue to differentiate from enchondroma.
QUIZ	BT	BT021	Osteochondroma of tibia. Note how cortex is contiguous with that of the tibia. Points away from joint. MRI could evaluate cartilage cap thickness.
QUIZ	BT	BT022	Osteosarcoma femur. Aggressive bone destruction, soft tissue mass and calcification.
QUIZ	BT	BT023	Osteogenic sarcoma femur.
QUIZ	BT	BT024	Enchondroma tibia. This is a nice example of cartilage matrix calcification. Remember that tiny pieces of bone graft placed in a lesion after curettage can have a somewhat similar appearance.
QUIZ	BT	BT025	Enchondroma with pathologic fracture. Lobulated, expansile lesion. No matrix, but could have cartilage calcifications. Most common lytic lesion in phalanges. Age range: 15-35. Most common location: Hand.
QUIZ	BT	BT026	Giant Cell tumor. Lytic lesion extending up to articular surface in 36 year old. No matrix calcification, eccentric expansile.
QUIZ	BT	BT027	Osteochondroma proximal fibula. Note how cortex is continuous into lesion.
QUIZ	BT	BT028	Ewings sarcoma with pathologic fracture. Permeative bone destruction. Fever, leukocytosis, anemia common. Soft tissue mass common. Usually diaphyseal, but metaphyseal in 25%. Age range: 10-20. Favored locations: Innominate, bone, femur and humerus.
QUIZ	BT	BT029	Low grade chondrosarcoma. Difficult to make specific diagnosis without calcified matrix. DDX: GCT, ABC fibrous dysplasia, cyst, met, and myeloma.

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QUIZ	BT	BT030	Chondrosarcoma tibia. Aggressive lesion with cartilage-type matrix calcification.
QUIZ	BT	BT031	Plasmacytoma left iliac bone. Metastasis and myeloma should always be in the differential diagnosis of a lytic lesion in an older person (over 40 years). Myeloma can occur as a solitary lesion with or without the typical serum abnormalities. Many cases of plasmacytoma eventually develop multiple lesions. Solitary lesions are most common in the spine and pelvis.
QUIZ	BT	BT032	Osteofibrous dysplasia, tibia and fibula. This is a favored location for this lesion, following the jaw, the real favorite. Distinguished from fibrous dysplasia by osteoblasts rimming trabeculae. Also called ossifying fibroma.
QUIZ	BT	BT033	Maffucci's Syndrome: Multiple enchondromas and hemangiomas (note phleboliths). Malignant transformation more common in the bone than in vascular lesions.
QUIZ	BT	BT034	Synovial sarcoma. Soft tissue mass with calcifications near a joint. Age range: 30-50. Amorphous calcification in 25%.
QUIZ	BT	BT035	PVNS elbow. Pigmented villonodular synovitis is more common in the knee, but lytic lesion on both sides of a joint should suggest the diagnosis. Usually one joint is affected. No calcifications. Note soft tissue mass.
QUIZ	BT	BT036	Paget's Disease of the bone. Large contiguous, but not round areas of bone involved by sclerosis, enlargement and coarse trabeculation. Alkaline phosphatase often very high. Osteosarcoma (and other neoplasms) a possible complication.

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QUIZ	BT	BT037	Blastic metastases from prostate cancer. Note the round areas of involvement, always suggestive of metastases. Elevated PSA. May produce "super scan" appearance on radionuclide bone scan if sufficiently extensive.
QUIZ	BT	BT038	Well-defined adamantinoma. The mid tibia is the favorite location for adamantinoma. DDX might include fibrous dysplasia and osteofibrous dysplasia.
QUIZ	BT	BT039	Hemangioma of soft tissues with some bone changes in the forearm bones. Phleboliths are seen in 40% of hamangiomas.
QUIZ	BT	BT041	Metadiaphyseal portion of long bones. Pathologic fracture usual cause for symptoms. (3/4 between 10 and 20 years old - in contrast to fibrous cortical defect, usually <5 yrs.
QUIZ	BT	BT042	Stress Fracture of Tibia. DDX: Osteoid osteoma, chronic sclerosing osteomyelitis.
QUIZ	BT	BT043	"Tumoral calcinosis" in chronic renal failure.
QUIZ	BT	BT044	Hemangioendothelioma: multiple lytic lesions some of which have a somewhat unique cortical location. Lower extremity location common. Age: 30-50. Multiplicity common (38%).
QUIZ	BT	BT045	Giant Cell Tumor 2nd Metacarpal. Expansile, lytic lesion extending to end of bone. Differential diagnosis includes aneurysmal bone cyst and enchondroma.
QUIZ	BT	BT046	Aneurysmal bone cyst. DDX: Includes aggressive benign lesion such as ABC and malignancy.
QUIZ	BT	BT047	"Methymethacryloma" Bone cement used to fill metastatic lesion.

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QUIZ	BT	BT048	Subchondral degenerative cyst, also called "geode". Note cartilage narrowing and osteophytes medial knee joint. Sometimes a degenerative cyst precedes obvious radiographic signs of osteoarthritis.
QUIZ	BT	BT049	Brown Tumor of hyperparathyroidism. Few months post parathyroidectomy.
QUIZ	BT	BT050	Giant Cell tumor proximal fibula. Expansile lesion extending to the end of the bone. Age is appropriate (20-40yrs). GCT is usually eccentric, but when in a small bone, or when it gets very large in a large bone. May occupy the entire end of the bone. F:M = 3:1. No matrix calcification.
QUIZ	BT	BT051	Myositis ossificans near left hip. Lesion decreased somewhat in size over 8 month interval. Periphery of lesion ossified. Patient presented with pain. No good trauma history in this case.
QUIZ	BT	BT052	Enchondroma proximal fibula. Note matrix calcification.
QUIZ	BT	BT053	Giant cell tumor of radius. Lytic expansile lesion extending to end of bone. No matrix. Age 16 years is bit young. Consider also ABC.
QUIZ	BT	BT054	Chondroblastoma right proximal femur epiphysis. Location specific. Other possibilities: EG, Chronic infection, ABC, clear cell chondrosarcoma.
QUIZ	BT	BT055	Expansile lytic metastasis C2 from renal cell carcinoma.
QUIZ	BT	BT056	51 year old with 2 cm lytic lesion distal tibia. No matrix calcification. Subchondral location compatible with giant cell tumor. Age usually 20-40 years.
QUIZ	BT	BT057	Giant cell tumor. Injury to wrist 1954 with progressive swelling.
QUIZ	BT	BT058	Chondrosarcoma right pubic bone.

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QUIZ	BT	BT059	Myeloid metaplasia with myelofibrosis and myelosclerosis. Big spleen and dense bones: DDX: includes the above, mastocytosis and possibly lymphoma. Check for splenomegaly in cases of bony sclerosis to refine the differential.
QUIZ	BT	BT060	Soft tissue hemangioma with phleboliths. Pressure deformity of adjacent bone.
QUIZ	BT	BT061	Osteogenic sarcoma femur: aggressive lesion penetrating posterior cortex of distal metaphysis of femur. Lesion has cloud-like calcified matrix (bony matrix). Large soft tissue mass. Age appropriate for osteosarcoma (10-25 yrs). M:F = 2:1.
QUIZ	BT	BT062	Solitary bone cyst humerus. Proximal femur and proximal humerus are the favorite locations. 4-15 yrs, male predilection. DX: ABC.
QUIZ	BT	BT063	Chondroblastoma humerus. Classically this lesion involves the epiphysis. Sometimes there is matrix calcification. This case is difficult because there is also a large metaphyseal component.
QUIZ	BT	BT064	Unicameral bone cyst femur. This is a common location for this lesion. Fibrous dysplasia and ABC might be considered in the differential diagnosis.
QUIZ	BT	BT065	Simple bone cyst humerus with pathologic fracture and "fallen fragment" sign.
QUIZ	BT	BT066	Giant cell tumor. Apophysis tibia. 2 month history of knee pain.
QUIZ	BT	BT067	Chondrosarcoma (degenerative of exostosis) femur.
QUIZ	BT	BT068	Bone cyst calcaneus.
QUIZ	BT	BT069	Myeloma acetabulum and proximal femur.
QUIZ	BT	BT070	Ewings Sarcoma. Permeative lesion 3rd metatarsal.
QUIZ	BT	BT071	Ewings Radius

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QUIZ	BT	BT072	Fibrosarcoma Ilium - Metastasis to skull.
QUIZ	BT	BT073	Plasmacytoma.
QUIZ	BT	BT074	Aneurysmal bone cyst.
QUIZ	BT	BT075	Hodgkins lymphoma with bone involvement.
QUIZ	BT	BT076	Sarcomatous degeneration of enchondroma. 4 1/2 month history of pain in thigh.
QUIZ	BT	BT077	Eosinophilic granuloma ilium
QUIZ	BT	BT078	Osteogenic Sarcoma pelvis
QUIZ	BT	BT079	Giant cell tumor; Tibia
QUIZ	BT	BT080	Enchonchroma; finger with pathologic fracture.
QUIZ	BT	BT081	Ewing sarcoma fibula. Differential diagnosis for this expansile lytic lesion includes ABC and GCT.
QUIZ	BT	BT082	Giant cell tumor; femur.
QUIZ	BT	BT083	Chondrosarcoma; ilium.
QUIZ	BT	BT084	Osteoid Osteoma: femur.
QUIZ	BT	BT085	Osteoid Osteoma; femur.
QUIZ	BT	BT086	Probably enchondroma.
QUIZ	BT	BT087	Metastasis to tibia in patient with TKR. History: Heard pop.... Pain in knee.
QUIZ	BT	BT088	Parasteal ossifying lipoma.
QUIZ	BT	BT089	Enchondroma of femur. Lobulated (cartilage grows in lobules). Well-defined. Calcified matrix in cartilage pattern common. High signal on T2. Usually central metaphyseal location. Humerus is common location, so they may be incidental finding on chest radiography. Age of discovery usually 20-40 years. May undergo transformation to chondrosarcoma.
QUIZ	BT	BT090	Multiple lytic lesions due to myeloma("raindrops"). Metastases are also in the differential diagnosis. Lesions of myelooma tend to be more well-defined than metastases.

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QUIZ	BT	BT091	Giant cell tumor calcaneus. Tuberosity of calcaneus is former apophysis, hence typical although uncommon location for GCT. Age range 20-40 years. Eccentric, expansile. No calcified matrix.
QUIZ	BT	BT092	Synovial sarcoma involving soft tissue and underlying 1st metatarsal. Calcification is more dense than is typical for synovial sarcoma (25% have soft tissue calcification, 1/3 have bone erosion, 30-50 years of age).
QUIZ	BT	BT093	Intraosseous lipoma. Typical location for lucent lesion, typical calcification. Note that there is normally a paucity of trabeculae in this location.
QUIZ	BT	BT094	Lytic metastasis from synovial sarcoma with "missing pedicle". Empirically, a "missing pedicle" is more likely due to metastasis than to myeloma.
QUIZ	BT	BT095	Hemangioendothelioma: Multiple relatively well-defined, slightly expansile lytic lesions involving several bones. Multiple lesions in up to 50% of cases. Long bones of lower extremities most often involved. (AKA angiosarcoma, hemangioendothelial sarcoma)
QUIZ	BT	BT096	Clear cell chondrosarcoma. Radiographically this can look like chondroblastoma with epiphyseal location.
QUIZ	BT	BT097	Osteoid osteoma left tibia. DDX: Stress fracture or chronic osteomyelitis.
QUIZ	BT	BT098	Neurilemmoma with mucoid degeneration: maybe the mucoid element has calcified. One would have to consider synovial sarcoma also.
QUIZ	BT	BT099	Osteogenic Sarcoma; femur. Pulmonary metastases appearing over 4 months.
QUIZ	BT	BT100	Osteogenic Sarcoma. Hit by falling tree. Sometime later developed right hip pain.

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QUIZ	BT	BT101	Giant cell tumor. CLL, Wrist pain.
QUIZ	BT	BT102	Blastic metastases from prostate cancer.
QUIZ	BT	BT103	Chondrosarcoma ilium
QUIZ	BT	BT104	Chondrosarcoma
QUIZ	BT	BT105	Osteosarcoma distal right radius. One month history of pain and swelling. Metastases would be a strong possibility at this age.
QUIZ	BT	BT106	Parosteal osteosarcoma tibia. Densely ossified lesion. Posterior distal femur and proximal tibia favored locations. Older age range. Relatively good prognosis. Invasion of medullary canal does not necessarily worsen prognosis. Tend to ossify centrally rather than peripherally as does myositis ossificans.
QUIZ	BT	BT107	Osteoid osteoma affecting scottie dog's eye. This sort of lesion can cause painful scoliosis in children. Idiopathic scoliosis is usually not painful so look for underlying lesion in painful scoliosis.
QUIZ	BT	BT108	Osteosarcoma distal femur and proximal humerus.
QUIZ	BT	BT109	Parosteal chondroma. Cartilage matrix calcification and scooping of cortex are characteristic radiographic features. Often present with pain and swelling. Age range same as for enchondroma.
QUIZ	BT	BT110	Bone cyst with fracture with "fallen fragment signs"
QUIZ	BT	BT111	Myeloma
QUIZ	BT	BT112	Osteosarcomatosis. Multiple sclerotic metaphyseal lesions. Controversy as to whether lesions are metastases to bone from one tumor or multicentric primary tumors.

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QUIZ	BT	BT113	Synovial sarcoma. Note: Calcifications. PVNS never has calcification. 25% of synovial sarcomas have amorphous calcification. Age Range: 40-60. common location: knee, hip and ankle.
QUIZ	BT	BT114	Osteoid Osteoma. Joint effusion, sclerosis distal to hip joint capsule and nidus. Age range: 10-20. Most common location: Femur. Treatments: Removal of nidus or NSAIDS.
QUIZ	BT	BT115	1.5 cm radiolucent lesion proximal epiphysis of humerus in patient with shoulder pain. Chondroblastoma. ABC, EG and infection might have similar appearance.
QUIZ	BT	BT116	Brown tumors of right femur and tibia.
QUIZ	BT	BT117	Aneurysmal bone cyst. Expansile thin shell of cortex. Up to 1/2 have precursor lesion, usually benign. Age helps in differential diagnosis from GCT. Age range: 10-30. Favored locations: Femur, tibia, humerus and innominate bone.
QUIZ	BT	BT118	Fibrous Dysplasia. Sclerotic Rim = "rind sign". Proximal femur is common location for monostatic fibrous dysplasia.
QUIZ	BT	BT119	Diffuse prostate cancer metastases: Unusually uniform on CXR. Focal round areas of sclerosis on CT help confirm metastases and rule out renal osteodystrophy Paget's etc.
QUIZ	BT	BT120	Posterior scalloping of vertebrae due to spongioblastoma of ependyma.

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QUIZ	BT	BT121	Non-Hodgkins lymphoma fibula. Very aggressive lesion with moth-eaten destruction of fibula (where it isn't gone entirely). DDX: certainly includes Ewings and osteogenic sarcoma in this 17 year old. Metastasis would be high on the list in an older patient. An aggressive infection might do this also.
QUIZ	BT	BT122	Marked thickening of anteromedial cortex of proximal-mid tibia. DDX: for this finding: osteoid osteoma, healing stress fracture, chronic infection. CT nicely demonstrates nidus of osteoid osteoma.
QUIZ	BT	BT123	Malignant fibrous histiocytoma tibia.
QUIZ	BT	BT124	Osteogenic sarcoma tibia. Not very well-defined sclerotic lesion in metaphysis. How many time have you disregarded densities like this?
QUIZ	BT	BT125	Metastasis tibia. Permeative lytic lesion in proximal tibia of patient with known adenocarcinoma.
QUIZ	BT	BT126	Aneurysmal bone cyst. Lytic, expansile lesion with no matrix calcification. 10-30 years. Equal sex incidence. Often engrafted on other pre-existing lesion. May grow very rapidly.
QUIZ	BT	BT127	Osteogenic sarcoma fibula. Aggressive periosteal reaction (sunburst?). Lesion is quite dense suggesting it is forming bone. Age commonly 10-25 years. Distal femur and proximal tibia most common lcoations. M:F - 2:1. Ewings sarcoma is in the differential also, especially for a fairly long lesion extending into the diaphysis.
QUIZ	BT	BT128	Chondrosarcoma
QUIZ	BT	BT129	Non-ossifying Fibroma and healing fracture.

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QUIZ	BT	BT130	Osteogenic sarcoma tibia. Soft tissue extension with osteoid matrix calcification. Without CT (not yet invented) it is difficult to tell the exact involvement of the tibia and relationship to the soft tissue mass.
QUIZ	BT	BT131	Giant cell tumor 5th metarsal. One year history of swollen tender foot.
QUIZ	BT	BT132	Liposarcoma femur.
QUIZ	BT	BT133	Chondromyxoid fibroma femur
QUIZ	BT	BT134	Prostate Cancer response to therapy.
QUIZ	BT	BT135	Hemangioendothelial Sarcoma. Low grade sarcoma most often multiple lesions in a lower extremity.
QUIZ	BT	BT136	Parosteal osteosarcoma: the MRI show the tumor does not invade the medullary canal. The knee region is the favorite location for this tumor.
QUIZ	BT	BT137	Osteoid Osteoma. CT demonstrates nidus.
QUIZ	BT	BT138	Chondrosarcoma rib. Anterior location is typical. Matrix calcification permits identification of cartilage lesion (40-60 years would be a more typical age than this patient).
QUIZ	BT	BT139	Lymphangioma of the humerus. Children and adolescents affected. Rare. Multiloculated appearance, like hemangioma.
QUIZ	BT	BT140	Dysplasia epiphysealis hemimelica. AKA Trevor's disease. Irregular, calcified mass projecting from epiphysis. Age range: 2-4. Location: Ankle and knee.
QUIZ	BT	BT141	Hand - Myeloma
QUIZ	BT	BT142	Supposedly giant cell tumor distal phalanx. Wrong age, etc so other diagnoses should be considered (epidermoid inclusion cyst, glomus tumor and enchondroma).

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	BT	BT143	Chondroblastoma. Favors epiphysis/apophysis. Calcification in 1/3 to 1/2. Associated with ABC in 15%. Age range: 10-20. Favored location: Femur, humerus and tibia.
QUIZ	BT	BT144	Degenerative cyst (geode) patella. Appearance could mimic chondroblastoma, chronic infection, tb, fungal infection and DDP.
QUIZ	BT	BT145	Multiple myeloma. Multiple well-defined lesions in skull. Note destruction of C2 with pathologic fracture of odontoid with considerable posterior displacement of odontoid on body of C2 (Call about findings like this!!!)
QUIZ	BT	BT146	Bone Infarcts. Patient with sarcoid treated with steroids.
QUIZ	BT	BT147	Healing nonossifying Fibroma. Note that it heals by ossifying-makes you wonder about the appropriateness of the name.
QUIZ	BT	BT148	Multiple myeloma. With multiple lytic lesions in the hands, myeloma is more likely than metastasis.
QUIZ	BT	BT149	Fibroanthoma (fibrous histiocytoma) of the right tibia. Benign tumor histologically similar or identical to NOF. Different clinical history; older patients, painful, may involve diaphysis or epiphysis. DDX: NOF, fibrous dysplasia, bone cyst, enchondroma, chondromyxoid fibroma, osteoblastoma and EG.
QUIZ	BT	BT150	Myelofibrosis and myelosclerosis. Hugh spleen.
QUIZ	BT	BT151	Periosteal chondroma. Soft tissue mass with punctate calcification in 50% with smooth erosion of subjacent bone. Age range: 15-35. Favored location: humerus, femur and hand.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	BT	BT152	Parosteal osteosarcoma proximal tibia. Well differentiated tumor arising from the surface of the bone. Most common in third decade. 22% involve medullary canal. Dedifferentiation bad prognostic sign.
QUIZ	BT	BT153	Osteosarcoma clavicle secondary to radiation therapy. Note radiation changes in the lung (Radiation and Paget's disease are the big underlying factors in older people with sarcoma.)
QUIZ	BT	BT154	Chondrosarcoma: lytic lesion in former epiphysis treated as chondroblastoma had recurred and was diagnosed as chondrosarcoma. Geode, chronic infection and healed AVN might be considered in this 27 year old.
QUIZ	BT	BT155	NOF
QUIZ	BT	BT156	Multiple myeloma. Included in DDX of marked osteoporosis, especially if not compatible with patient's age and sex. "Fish vertebrae" in L-spine. Note bowel gas in hernia on AP pelvis view.
QUIZ	BT	BT157	Lytic lesions C5 and C6 in myeloma. DDX: Metastases.
QUIZ	BT	BT158	Metastatic renal cell carcinoma. Aggressive lytic lesion could easily be another type of metastasis. Myeloma should be considered but is often more well-defined. Metastases and myeloma are much more common than primary bone tumors. Danger of pathologic fracture.
QUIZ	BT	BT159	Non-ossifying fibroma. Lobulated, sclerotic margin, slightly expansile, eccentric, diaphyseal, 3/4 between 10 and 20 years of age.
QUIZ	BT	BT160	Metastatic breast cancer. This is most likely diagnosis for multiple blastic lesions in a 60 year old female.

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QUIZ	BT	BT161	Metastasis to patella from lung cancer. Note also, periosteal reaction due to HPO. Metastases, even solitary, are much more common than primary bone tumors. Peripheral metastases are often from lung primary. 10% of metastases to bone are solitary at presentation.
QUIZ	BT	BT162	Lytic metastasis from renal cell cancer. High risk for pathologic fracture because of size and amount of cortical destruction. Make sure clinician is aware of fracture risk. Prophylactic fixation is often indicated especially in lower extremity.
QUIZ	BT	BT163	Metastases from breast cancer with "missing pedicle". This sign is more common with metastases than with myeloma.
QUIZ	BT	BT164	Classic bone infarcts with calcified serpiginous margin and central medullary location without expansion.
QUIZ	BT	BT165	Nonossifying fibroma with healing pathologic fracture. Eccentric, slightly expansile lytic lesion with scalloped, sclerotic margin in diaphyseal portion of bone. Children and young adults.
QUIZ	BT	BT166	Solitary bone cyst femur. This has moved toward the diaphysis with growth of the patient. Periosteal new bone due to healed fracture? DDX: Nonossifying fibroma and fibrous dysplasia.
QUIZ	BT	BT167	Aneurysmal bone cyst. Metatarsal.
QUIZ	BT	BT168	Osteosarcoma of rib

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	BT	BT169	Periosteal osteosarcoma of femur: Periosteal reaction, calcification in soft tissue mass. MRI shows soft tissue mass. Typically in 10-30 year old patient, diaphysis of femur or tibia, spiculated periosteal reaction, prominent chondroblastic component histologically. Medullary canal usually not involved.
QUIZ	BT	BT170	Lipoma; thigh
QUIZ	BT	BT171	"Particle Disease," hips. Histiocytic reaction to particulate material (HDPE wear particles, cement and metal fragments, etc.). Note the wear of the acetabular liner on the right (asymmetry). Lytic lesions around both components. Severe acetabular protrusion on left will be challenging to repair.
QUIZ	BT	BT172	Fibrous dysplasia: proximal femur is a common location. Lesion has thick and sclerotic margin "rind" which also may occur in fibrous dysplasia. Ground glass appearance in central portion lesion.
QUIZ	BT	BT173	Myositis ossificans: Peripheral rather than central calcification favors this diagnosis over neoplasm. This is a manifestation of the "zonal" phenomenon seen histologically.
QUIZ	BT	BT174	Aneurysmal bone cyst, capitata. 10-30 years age range. May be underlying lesion in 1/4 to 1/2 cases. Eccentric, expansile and often rapidly enlarging, thin rim of bone. Metaphyseal location, but can occasionally cross growth plate.
QUIZ	BT	BT175	Solitary bone cyst intertrochanteric portion left femur. Common age 4-15 years. Proximal humerus most favored location M>F.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	BT	BT176	Multiple myeloma. Expansile lytic lesion in an 85 year old man. DDX: includes metastasis, myeloma, brown tumor, MFH, telangectatic osteosarcoma.
QUIZ	BT	BT177	Multiple myeloma. Sclerosis on left due to radiation therapy. Now with new large lesion on right. Much better seen on CT.
QUIZ	BT	BT178	Metastatic primary splenic angiosarcoma. Note large spleen. Multiple lytic lesions. DDX: Myeloma and metastasis more reasonable.
QUIZ	BT	BT179	Hemophilic pseudotumor of femur
QUIZ	BT	BT180	Hemangioma left ilium. Possibly the coarse trabecular pattern in the lower portion of the lesion is a clue.
QUIZ	BT	BT181	Bone infarcts tibia, calcaneus with typical serpiginous calcified rim.
QUIZ	BT	BT182	Langerhans Cell Histiocytosis: (EG) expansile lytic lesion with well-defined margin, periosteal reaction. Some cells contain Langerhans granule or X Bodies in cytoplasm. Usually in children or young adults. DDX: chronic osteomyelitis.
QUIZ	BT	BT183	Infantile myofibromatosis: Multiple lytic bone lesions in this case.. Can also lead to solitary lesions. One of the fibromatoses. May have visceral involvement also which has bad prognosis.
QUIZ	BT	BT184	Nonossifying fibroma of tibia. Typically lytic, expansile, eccentric, well-defined lobulated. Incidental finding or discovered due to pathologic fracture (large lesions). Same histology less than 2 cm diameter is fibrous cortical defect. Very common. May cause hypophosphatemic rickets/osteomalacia. Multiple in Jaffe-Campanacci Syndrome.

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QUIZ	BT	BT185	Chondroblastoma: lytic lesion in greater trochanter (apophysis) with cartilagenous matrix type calcifications.
QUIZ	BT	BT186	Bone Island. In this case, the hip was painful and the sclerotic lesion showed increased uptake on bone scan. Diagnosis established by biopsy.
QUIZ	BT	BT187	Intraosseous lipoma; left shoulder
QUIZ	BT	BT188	Liposarcoma of thigh. Second most common soft tissue malignancy behind MFH - fibrosarcoma. Calcification/ossification is common. The lesion may cause pressure erosion of adjacent bone.
QUIZ	BT	BT189	Sclerotic lesion in POEMS syndrome. (Polyneuropathy, organomegaly, endocrinopathy, M-Protein and skin changes).
QUIZ	BT	BT081	Ewings Sarcoma; fibula.
QUIZ	CHEST	CHEST001	Normal chest, PA and lateral views. Use windo adjustments to look through the heart on the frontal view as well as study the lung markings. On lateral note sharp CP angles and shape and density of normal vertebrae. Examples of compression fractures and a sclerotic metastasis are included.
QUIZ	CHEST	CHEST002	Another example of a compression fracture seen on lateral view. This is probably the most common bone abnormality on the lateral. The spine should have a smooth curve. Abrupt kyphosis should lead to closer inspection.

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QUIZ	CHEST	CHEST003	Abnormal vertebral shapes. The biconcave vertebrae result from osteoporosis or occasionally myeloma or osteomalacia. These have been likened to the shape of fish vertebrae--hake vertebrae are shown for comparison. Rectangular central impressions in the endplates give the "Lincoln log" appearance seen in Sickle cell disease.
QUIZ	CHEST	CHEST004	Heart shapes you should recognize. Left ventricular enlargement as in aortic insufficiency enlarges to the left. On the lateral the LV extends more than 1.8 cm posterior to the back wall of the IVC. Frontal view of LA enlargement shows "double density", enlarged left atrial appendage, and splaying of the main bronchi. Pericardial effusion gives "water bottle" shape enlarged to both sides. Dilated cardiomyopathy can also have this shape.
QUIZ	CHEST	CHEST005	Patient with lymphoma demonstrating mediastinal widening due to adenopathy, splenic enlargement with displacement of stomach medially, and small left pleural effusion seen only on lateral- view--always check CP angles on lateral. CT shows the splenomegaly and bilateral effusions (more sensitive than the lateral view)
QUIZ	CHEST	CHEST006	Hiatus hernia. Mass behind heart with air-fluid level. Very common. More difficult if no air-fluid level. You must make looking through the heart part of your routine to avoid missing this.
QUIZ	CHEST	CHEST007	Bilateral pleural effusions seen only on lateral view. Lateral decubitus view shows that the fluid is free-moving.

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QUIZ	CHEST	CHEST008	Right middle lobe atelectasis. Easy to detect on lateral view as dense white triangle overlying the heart. Very hard to see on frontal view. Often caused by endobronchial lesion: mucous plug, cancer, foreign body. Middle lobe bronchus can also be compressed by adjacent lymph nodes.
QUIZ	CHEST	CHEST009	Absence of right pectoralis major muscle and breast in patient with Poland syndrome. Note rib anomalies also. Most often this appearance is due to mastectomy and should make you look carefully for evidence of metastases. If not noticed, you can make up nonexistent infiltrates on the contralateral side.
QUIZ	CHEST	CHEST010	Left lower lobe atelectasis--dense white triangle behind heart on frontal view with shift of mediastinum to left and elevation of left hemidiaphragm. Also pneumoperitoneum. After finding one abnormality always continue a thorough search for others.
QUIZ	CHEST	CHEST011	Two cases of thyroid enlargement due to goiter. Note mass in lower neck-upper mediastinum with deviation + or - narrowing of the trachea. Older female patient would be typical.
QUIZ	CHEST	CHEST012	Lateral view of chest showing coronary artery calcification indicating significant coronary disease. Also hemidiaphragm eventration of no significance.
QUIZ	CHEST	CHEST013	Left ventricular "aneurysms". Scarred myocardium due to prior infarction. One case shows calcification, the other contour abnormality.

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QUIZ	CHEST	CHEST014	A films show top normal heart or minimal cardiomegaly. B films show development of congestive heart failure. Note increased heart size, blunted CP angles due to pleural effusion, thickened fissures, Kerley lines, diffuse increase in pulmonary markings on both views.
QUIZ	CHEST	CHEST015	Interstitial infiltrates-diffuse increase in lung markings in a linear pattern. Normal heart size. This has a wide differential diagnosis.
QUIZ	CHEST	CHEST016	RLL alveolar infiltrate due to bacterial pneumonia. Homogeneous opacification, sometimes air bronchogram. Note "spine sign" on lateral. Lower spine is usually blacker than the upper spine but not in this case. Also note how infiltrate obscures adjacent structures such as the right hemidiaphragm and posterior wall of IVC.
QUIZ	CHEST	CHEST017	Two views of the same patient at only slightly different times, one supine and one upright. Note that the cavitory nature of the mass lesion in the right lower lung is only appreciated on the upright view. A horizontal x-ray beam is the essential factor to enable detection of air-fluid levels.
QUIZ	CHEST	CHEST018	Hyperinflation of the lungs, in this case due to emphysema. Note how many posterior ribs you can see (normal is 10). See the slips of diaphragmatic muscle curving up into the chest wall on the frontal view. Anterior clear space in front of heart and AP diameter of chest are increased. Aorta and left pulmonary artery are well seen on lateral view due to lung folding around them. Flat hemidiaphragms on lateral. Sometimes the angles look blunted--do not overcall pleural effusion.

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QUIZ	CHEST	CHEST019	Bullous emphysema. Huge cystic spaces in the upper lungs with compression of the lower lung. Obviously difficult to exclude an infiltrate in the lower lungs in such a case.
QUIZ	CHEST	CHEST020	Calcified pleural plaques bilaterally on hemidiaphragms and chest wall. "En face" plaques show "holly leaf" or "rolled leaf" appearance. Bilateral pleural calcification is often due to prior asbestos exposure. Unilateral calcification is often post infection (Tb empyema). Plaques obscure the lung. CT necessary to examine the lungs thoroughly.
QUIZ	CHEST	CHEST021	Extensive unilateral pleural calcification due to old tb empyema.
QUIZ	CHEST	CHEST022	Mesothelioma--rare pleural tumor often associated with prior asbestos exposure. Note calcified plaque on plain images and CT. Tumor encases the lung. It tends not to metastasize widely, but will invade biopsy tracts. Bumpy nature of thickened pleura differentiates this from an empyema, which would be smooth.
QUIZ	CHEST	CHEST023	Endotracheal tube in right main bronchus causing collapse of left lung. Lung reinflates after repositioning of tube. The right upper lobe can also be collapsed if the side of the tube blocks the right upper lobe bronchus.
QUIZ	CHEST	CHEST024	Bilateral pneumothorax in stabbing victim.
QUIZ	CHEST	CHEST025	Bilateral pneumothorax, large on left and small on right, after removal of pleural tubes in cardiac surgery patient. Adjust windows and magnify to search for small pneumothoraces.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	CHEST	CHEST026	Feeding tube placed into pleural space through right bronchus causing pneumothorax after tube is removed. There is a protocol to avoid this.
QUIZ	CHEST	CHEST027	NG tube misplaced in right bronchus. Tubes are more apt to go down the right side than the left due to the lesser angle of take off of the right bronchus.
QUIZ	CHEST	CHEST028	"Skin fold" overlying right lung, mimicking pneumothorax. Lung markings are still present in the periphery helping to avoid misdiagnosis. Old shoulder injury.
QUIZ	CHEST	CHEST029	Stabbing victim. Arrows mark wounds. Casette was wrapped in plastic garbage bag which created artifact over the right lung mistaken for pneumothorax.
QUIZ	CHEST	CHEST030	Right venous catheter properly placed. Patient returned for chemotherapy. Catheter had changed position to right jugular vein. Valsalva maneuver can alter pressures enough to sometimes flip catheters. One good reason to check the current catheter position before initiating another round of chemotherapy.
QUIZ	CHEST	CHEST031	Initial chest radiograph shows probable pneumoperitoneum in patient with left lung pneumonia and pleural tube. Perforated stress ulcer was suspected. To confirm the diagnosis an NG tube was placed and injected with watersoluable contrast material (Gastrografin) - to show site of extravasion in the abdomen prior to surgery. Unfortunately, NG tube was in the left lung and contrast medium was coughed into both lungs.
QUIZ	CHEST	CHEST032	Alveolar infiltrate medial RLL due to bacterial pneumonia, partially "hiding" behind the heart.

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QUIZ	CHEST	CHEST033	Upper lobe alveolar infiltrates, right greater than left. Upper lung involvement should always raise suspicion of tuberculosis as was the diagnosis in this case.
QUIZ	CHEST	CHEST034	
QUIZ	CHEST	CHEST035	
QUIZ	CHEST	CHEST036	Bilateral hilar adenopathy in sarcoid. The lateral view helps in confirming hilar enlargement. Enlarged pulmonary arteries and enlarged lymph nodes are the two things which enlarge the hila. Contrast enhanced CT and MRI can definitively distinguish these if necessary.
QUIZ	CHEST	CHEST037	Achalasia with dilated, food and secretion-filled esophagus. Often the stomach bubble is not seen. Abnormal contours on the right side of the mediastinum often turn out to be due to the esophagus.
QUIZ	CHEST	CHEST038	Right apex mass lesion. Masses can "hide" behind clavicle and first rib. This one is not hiding very well. Always double check the apices and behind the heart.
QUIZ	CHEST	CHEST039	"Dense" and slightly enlarged left hilum due to superimposed infiltrate in the upper lobe anterior to the hilum.
QUIZ	CHEST	CHEST040	"Dense" right hilum due to mass or focal infiltrate anterior to the hilum.
QUIZ	CHEST	CHEST041	"Dense" right hilum due to hilar mass.
QUIZ	CHEST	CHEST042	Left apex mass partially hidden by clavicle and overlying scapula.
QUIZ	CHEST	CHEST043	
QUIZ	CHEST	CHEST044	Left atrial enlargement--equate to mitral valve disease.
QUIZ	CHEST	CHEST045	Barium contrast medium aspiration.

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QUIZ	CHEST	CHEST046	Patient actually admitted with "lung mass". Density was proven by spot films taken at fluoroscopy to be prominent costochondral junction ossification at anterior end of first rib. This can both mimic masses and hid masses.
QUIZ	CHEST	CHEST047	LUL bronchoalveolar carcinoma partially "hiding" near anterior end of first rib. Air bronchogram within mass on CT can be seen in bronchoalveolar carcinoma and in lymphoma.
QUIZ	CHEST	CHEST048	Severe sarcoid with cystic spaces in the upper lung occupied by fungus balls. Air-fluid level due to hemorrhage. Hemorrhage can be life-threatening.
QUIZ	CHEST	CHEST049	"Alveolar" sarcoid with hilar adenopathy and ill-defined masses.
QUIZ	CHEST	CHEST050	Sarcoid with diffuse small rounded opacities. Differential diagnosis includes tuberculosis, fungal disease, Langerhans Cell Histiocytosis, silicosis/CWP, and metastases.
QUIZ	CHEST	CHEST051	
QUIZ	CHEST	CHEST065	Ascites. Levine shunt
QUIZ	CHEST	CHEST066	Hernia or pleural lipoma in posterior CPA. Both fat and calcium are very useful in the diagnosis of chest lesions and are identified with certainty by CT
QUIZ	CHEST	CHEST067	LV aneurysm. Rim calcification and change in cardiac contour. Either appearance is highly diagnostic
QUIZ	CHEST	CHEST068	Marfan Syndrome. Tall. Narrow AP chest. Dilated Aorta. LV heart configuration.
QUIZ	CHEST	CHEST069	Absent right pulmonary artery. Right PA absence much more common in the left. Small lung and shift of mediastinum toward affected side.. Artery shadow absent. Bronchial circulation pattern.

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QUIZ	CHEST	CHEST070	Steroid spine. Osteoporosis, codfish vertebrae, but also rather thick end plates attributed to hyperplastic callus healing many microfractures.
QUIZ	CHEST	CHEST071	Air in anterior mediastinum in colon used to replace esophagus. Colon interposition surgery. Now the stomach pull-up seems to be more popular.
QUIZ	CHEST	CHEST072	Scleroderma. Interstitial fibrosis with areas of "honeycomb" lung. Note air esophagram superimposed over trachea on frontal view - a clue to the etiology.
QUIZ	CHEST	CHEST073	Soft tissue calcification with renal failure.
QUIZ	CHEST	CHEST074	Ebstein's anomaly: low-set tricuspid valve which is incompetent resulting in large right atrium, thin walled RV. Predominant right sided cardiac enlargement.
QUIZ	CHEST	CHEST075	Rounded atelectasis both lower lungs. Pleural effusion on right. Remember that an exudative pleural effusion is involved in the formation of rounded atelectasis.
QUIZ	CHEST	CHEST076	Primary pulmonary hypertension. Enlarged PA's = Pulmonary hypertension. No definite lung disease. DDX includes left -to-right shunt, almost always an ASD in an adult patient.
QUIZ	CHEST	CHEST0077	Aortic Stenosis and insufficiency. Valve calcification - stenosis. Large LV = insufficiency. Calcification in AO valve almost always best seen on lateral view.
QUIZ	CHEST	CHEST078	Catheter in azygos Vein
QUIZ	CHEST	CHEST079	Bronchogenic cyst in 54 year old smoker. He was worried for a while. On CT attenuation varies with protein content. Water density would be highly suggestive of diagnosis.
QUIZ	CHEST	CHEST080	Wegners Granulomatosis
QUIZ	CHEST	CHEST081	Langerhans Cell Histiocytosis of rib with pathologic fracture.

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QUIZ	CHEST	CHEST082	Calcified mitral valve. Also enlarged LA, calcified granuloma, calcified nodes, etc.
QUIZ	CHEST	CHEST083	Radiodensity overlying T-spine on lateral view of chest not seen on frontal projection. Lung mass could not be excluded. CT demonstrates that density is due to osteophytes of costovertebral joint.
QUIZ	CHEST	CHEST084	Scleroderma. Basilar linear fibrosis. Air esophagram.
QUIZ	CHEST	CHEST085	Acupuncture residue
QUIZ	CHEST	CHEST086	Colon in Morgagni Hernia mimics lung disease. Fat is the most common tissue to herniate. Rarest of congenital hernias-less than 10%. Hiatus>Bochdalek>Morgagni. Morgagni usually on right side.
QUIZ	CHEST	CHEST087	Large osteochondroma scapula, pressure deformity adjacent ribs, deformity proximal left humerus in multiple Hereditary exostoses. Associated "reverse Madelung" forearm deformity.
QUIZ	CHEST	CHEST088	Myeloma with "missing vertebra" at L1. Kyphosis should alert you to look closely. Note one set of posterior elements has no corresponding vertebral body - not good.
QUIZ	CHEST	CHEST089	Chondrosarcoma of rib. Anterior end of rib is typical location
QUIZ	CHEST	CHEST090	Lung cancer. Hemopneumothorax (due to biopsy). Ankylosing spondylitis. Note how abdominal radiograph helps confirm AS diagnosis with fused SI joint and syndesmophytes L-Spine.
QUIZ	CHEST	CHEST091	Hill-Sacks deformity of right shoulder. Deformity results when anteriorly-dislocated humeral head impacts on the anterior glenoid rim. Defect is on posterior aspect of humeral head and is seen laterally on internal rotation view of shoulder.

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QUIZ	CHEST	CHEST092	Marginal, male pattern of ossification of costal cartilages. Sometimes they obscure the lower lungs or are misinterpreted as infiltrate. You would never do that.
QUIZ	CHEST	CHEST093	Luxatio erecta left shoulder and fracture. Left hemidiaphragm elevation. Overlying foreign matter.
QUIZ	CHEST	CHEST094	Bilateral first rib resection
QUIZ	CHEST	CHEST095	Discitis-osteomyelitis lower T-spine. Involvement of disc and adjacent vertebrae very suggestive of infection.
QUIZ	CHEST	CHEST096	Thinning of ribs-especially superior margins and soft tissue calcification in Scleroderma.
QUIZ	CHEST	CHEST097	Neurofibromatosis (again) Rib notching. Masses along ribs and along mediastinum. Remember you also could see posterior scalloping of vertebrae also and thoracic scoliosis.
QUIZ	CHEST	CHEST098	Many small wires are residue of Korean Acupuncture. Healed rib fracture and linear scar/discoid atelectasis on right.
QUIZ	CHEST	CHEST099	Nice "wagging tongue" style of ossification in costal cartilage, typical of females. Useless information.
QUIZ	CHEST	CHEST100	Paget's disease left clavicle. Compare cortical thickness to right. Also pacer, healed rib fractures.
QUIZ	CHEST	CHEST101	2.5 cm mass posterior right lower lung due to "rounded atelectasis." Small right pleural effusion. Anterior chest surgery.
QUIZ	CHEST	CHEST102	Right aortic Arch. Tortuous ascending aorta. In adults, most are non-mirror image arches not associated with congenital heart disease, in contrast to the pediatric situation.
QUIZ	CHEST	CHEST103	Right aortic arch, probably with diverticulum to left from which left subclavian originates. Usually NO associated cardiac abnormality.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	CHEST	CHEST104	Misdirected feeding tube in right pleural space. This is not hard to do. When you remove the feeding tube follow up radiography shows pneumothorax. Treat feeding tubes with respect.
QUIZ	CHEST	CHEST105	Primary pulmonary hypertension. Cardiomegaly with right ventricular prominence. Enlarged pulmonary arteries=pulmonary hypertension. No definite lung disease.
QUIZ	CHEST	CHEST106	Exuberant pseudocallous formation on rib fractures in a patient on steroids for asthma.
QUIZ	CHEST	CHEST107	Pulmonary involvement from laryngotracheal papillomatosis. About 1% have this complication. Lesions spare the segmental bronchi. Probably due to cells shed or displaced from proximal lesions which get distal to mucociliary protection. Associated with Human Papilloma virus - 6C
QUIZ	CHEST	CHEST108	Typical sternal insufficiency fracture associated with osteoporosis, kyphosis. How many of these do you suppose you have missed? THE ORPHAN BONE
QUIZ	CHEST	CHEST109	Paget's disease right clavicle.
QUIZ	CHEST	CHEST110	Venous Catheter with a mind of its own changes position between one visit and the next. This can happen with valsalva maneuver.
QUIZ	CHEST	CHEST111	Right side heart enlargement with Ebstein's anomaly
QUIZ	CHEST	CHEST112	Intended venous line inadvertently placed intra-arterially. Course is too far to the left for usual venous location.
QUIZ	CHEST	CHEST113	Tetralogy of Fallot with shunt into right PA resulting in greater flow on right with development of PA hypertension and calcification of PA. Right aortic arch.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	CHEST	CHEST114	Multiple hereditary exostoses. Also Tracheostomy, healed rib fractures on right, ?minimal CPA-blunting.
QUIZ	CHEST	CHEST115	Pyogenic T-spine infection; destruction of disc and adjacent vertebral bodies. Soft tissue extent better seen on CT.
QUIZ	CHEST	CHEST116	Reservoir for right venous catheter mimics lung mass lateral to right hilum.
QUIZ	CHEST	CHEST117	Cushings syndrome secondary to exogenous steroid treatment. "Steroid Spine" with fish vertebrae having rather thick end plates from microfracture repair.
QUIZ	CHEST	CHEST118	Tall skinny vertebral bodies known as "dog vertebrae". These are seen in people who do not spend much time upright. They also have valgus femoral necks. In this case Susan B is a dog.
QUIZ	CHEST	CHEST119	Renal Osteodystrophy. Erosion of distal clavicles. Faint "rigger jersey" spine on lateral. Could it be anything else? NO
QUIZ	CHEST	CHEST120	Soft tissue calcifications in Dermatomyositis. Distinguishing between calcification and ossification usually helps you get into the correct differential diagnosis to avoid looking like a total fool.
QUIZ	CHEST	CHEST121	Eisenmenger Syndrome: reversed shunt with pulmonary hypertension. This is probably "marked" enlargement of the pulmonary arteries.
QUIZ	CHEST	CHEST122	"Bell shaped thorax" This patient had a congenital myopathy. This abnormal shape is seen with deficient musculature or easily deformed bone.
QUIZ	CHEST	CHEST123	Scleroderma. Dramatic thinning of ribs with loss of superior margins most striking - may be due to lack of muscle pull.
QUIZ	CHEST	CHEST124	Heart Shape of mitral valve disease. Pulmonary vein varix at junction with LA.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	CHEST	CHEST125	Scleroderma with interstitial lung disease and "air esophagram".
QUIZ	CHEST	CHEST126	LV enlargment. On true lateral view with good inspiration the lower heart border extends more than 1.8 cm posterior to the posterior margin of the IVC 2 cm cephalad to their crossing. (Hoffman and Rigler, 1965)
QUIZ	CHEST	CHEST127	Probable silicotuberculosis. DDX: Pneumoconiosis, Langerhans Cell Histiocytosis, sarcoid, fungus, tuberculosis. This is a long time coal miner.
QUIZ	CHEST	CHEST128	Cystic Bronchiectasis. The cysts communicate with the bronchial tree, fill with contrast on bronchography, expand with inspiration, and collapse with expiration.
QUIZ	CHEST	CHEST129	Ossification costal cartilage. Can obscure lower portion of lungs. Female pattern of ossification, likened to "wagging tongues." (Felson)
QUIZ	CHEST	CHEST130	Anterior mediastinal mass seen on lateral view.
QUIZ	CHEST	CHEST131	Superior rib notching on left in quadriplegic, probably due to pressure from overlying scapula. Similar changes can be seen in RA and scleroderma.
QUIZ	CHEST	CHEST132	Hemorrhage around the tip of a Swan Ganz catheter. This can be fatal.
QUIZ	CHEST	CHEST133	Thalassemia intermedia. Expanded ribs due to marrow hyperplasia. Minimal cardiomegaly.
QUIZ	CHEST	CHEST134	Aortic rupture into mediastinum. Note loss of all mediastinal detail on lateral view and the left apical pleural cap and mediastinal widening.
QUIZ	CHEST	CHEST135	Hemopneumothorax showing difficulty of recognition on supine view. Lateral decubitus makes it easy. Subcutaneous emphysema should be a clue to pneumothorax.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	CHEST	CHEST136	Multiple pulmonary fibroleiomyomas. History of uterine leiomyomata (could be low grade sarcoma) Centrally located lesions may obstruct airways.
QUIZ	CHEST	CHEST137	Ewing's Sarcoma left 3rd rib. These tend to enlarge into the thorax rather than outward - apparently the path of least resistance.
QUIZ	CHEST	CHEST138	Agenesis of LUL bronchus. This is the most common bronchus to suffer this fate. Mass due to secretions accumulated at site of atresia. Hyperinflation distally due to collateral ventilation.
QUIZ	CHEST	CHEST139	Scleroderma: interstitial lung disease. Air esophagram. Air-fluid level in esophagus indicating obstruction, probably due to stricture. Patients get short esophagus, reflux and stricture. Possible acute process left lower lung. Surgical clips abdomen.
QUIZ	CHEST	CHEST140	Pleural tube in major fissure. Sometimes it works fine, but not in this case where a pneumothorax remains. Need lateral view to prove location of pleural tube.
QUIZ	CHEST	CHEST141	"Drooping shoulder" on left due to stroke.
QUIZ	CHEST	CHEST142	Combination of T-spine anterior wedging fractures and sternal fracture: in this case in a patient with metastatic breast cancer.
QUIZ	CHEST	CHEST143	Kniest Dysplasia: AD inheritance. Association with deafness, retinal detachment. Large painful joints. Dumbell appearance of long bones. Scoliosis, platyspondyly.
QUIZ	CHEST	CHEST144	Anterior mediastinal mass. Syphilitic aortic aneurysm. Patient referred for work up of suspected TB or lung cancer.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	CHEST	CHEST145	Osteoma of the clavicle. This is rare. The common location for this lesion is the paranasal sinuses. The DDX for the clavicle lesion includes parosteal osteosarcoma and osteoid osteoma.
QUIZ	CHEST	CHEST146	Bleeding post left venous catheter placement and removal.
QUIZ	CHEST	CHEST147	Pneumatoceles in Staph pneumonia in child with CHD. Penumoatoceles in a child with acute pneumonia indicates Staph pneumonia. 90% will also have pleural effusion. Pneumatoceles appear in one week, disappear in 6 weeks few months.
QUIZ	CHEST	CHEST148	Minimal lung fibrosis with rheumatoid arthritis.
QUIZ	CHEST	CHEST149	Single ventricle with BT shunt on right. This results in large right pulmonary artery and rib notching on the right.
QUIZ	CHEST	CHEST150	Rib anomlies, Sprengel's deformity and scoliosis in patient with the Basal cell nevus syndrome (Gorlin). Other features include odontogenic keratocysts, falx and tentorial calcification and flame- shaped areas of sclerosis in phalanges.
QUIZ	CHEST	CHEST151	Hyperparathyroidism. Brown tumors giving multiple lytic expansile lesions. Bell-shaped thorax. "Rugger jersey" spine.
QUIZ	CHEST	CHEST152	Hemophiliac arthritis. Another cause of unusually severe shoulder arthritis.
QUIZ	CHEST	CHEST153	Rheumatoid arthritis. Shoulder changes. Pointed clavicle. Also note probable rheumatoid lung
QUIZ	CHEST	CHEST154	Achalasia. Food and secretion-filled esophagus mimics mass/infiltrate in right upper lung.
QUIZ	CHEST	CHEST155	Mycotic pulmonary artery aneurysm. Also septic emboli, bullae.
QUIZ	CHEST	CHEST156	Synovial osteochondromatosis. Note location in subscapular (beneath the acromion) and axillary recesses of shoulder joint

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QUIZ	CHEST	CHEST157	Nodular pulmonary amyloid. (again). This is somewhat more typical, being in a male patient. Nodules can be solitary or multiple.
QUIZ	CHEST	CHEST158	Atelectatic pseudotumor right anterior upper lung. This location is somewhat unusual.
QUIZ	CHEST	CHEST159	Left lower lobe pneumonia. Cervical aortic arch.
QUIZ	CHEST	CHEST160	Posterior dislocation left clavicle. Use of lordotic view to differentiate anterior and posterior dislocation. Posterior much more likely to have associated injury to great vessels.
QUIZ	CHEST	CHEST161	Mesothelioma. DDX: Spread of thymoma, metastatic adenocarcinoma. Radiographic progression. Old AC injury on right.
QUIZ	CHEST	CHEST162	AVM in Osler- Weber-Rendu syndrome.
QUIZ	CHEST	CHEST163	Calcific pericarditis due to tuberculosis. Cardiomegaly. Right pleural effusion/fibrosis.
QUIZ	CHEST	CHEST164	Pacer wire through VSD into LV
QUIZ	CHEST	CHEST165	Large opacities of silicosis/CWP somewhat symmetrical masses in mid-upper lung with a background of small nodules. Often TB is present and sometimes a similar appearance may be due to TB alone.
QUIZ	CHEST	CHEST166	"Steroid Spine". Patient on steroid therapy for ITP. Osteoporosis with vertebral deformities secondary to osteoporosis (concave end plates, loss of height). The end plates are relatively thick and fuzzy because of many healing microfractures. The thick endplates differ from those typically seen in osteoporotic, elderly individuals.
QUIZ	CHEST	CHEST167	Osteomyelitis clavicle (cryptococcus)
QUIZ	CHEST	CHEST168	Atelectatic pseudotumor.

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QUIZ	CHEST	CHEST169	Renal osteodystrophy. Sclerotic bones. Erosion of distal clavicles due to secondary hyperparathyroidism. Cardiomegaly and/or pericardial effusion. Tiny right cervical rib.
QUIZ	CHEST	CHEST170	Limbus vertebra. Old herniation during childhood of disk between ring apophysis and ossification center for body. Apophysis remains a separate center.
QUIZ	CHEST	CHEST171	Hiatus hernia. OK ,so you got one correct.
QUIZ	CHEST	CHEST172	Nice example of inverted hemidiaphragm with large pleural effusion. Remember that CT cuts through this could be confusing if you are using the diaphragm to separate chest structures from abdomen on axial cuts.
QUIZ	CHEST	CHEST173	? High attenuation pleural effusion, hemothorax.
QUIZ	CHEST	CHEST174	Double exposure. "Conjoined twins" Joined at the waist, they had to spend most of the time talking to one another.
QUIZ	CHEST	CHEST175	Calcification in LA wall. Chronic mitral valve disease. Cardiomegaly, surgery, CPA-blunting etc.
QUIZ	CHEST	CHEST176	Large left pleural effusion in patient with fistula from pancreatic duct to pleural space. Note inversion of hemidiaphragm which leads to "pendeluft" = pendulum ventilation.
QUIZ	CHEST	CHEST177	Left lung atelectasis secondary to placement of ET tube in right main bronchus. One other common result of this ET position is RUL atelectasis.
QUIZ	CHEST	CHEST178	Varicella pneumonia. Alveolar nodules. 2 days after rash appears. More severe during pregnancy. Leaves multiple small calcifications.

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QUIZ	CHEST	CHEST179	Atelectatic pseudotumor posterior RLL. It is in the most favored location and shows the "comet" or "vacuum cleaner" sign= markings swirl into it. On CT there is always associated pleural thickening. RUL density:scar versus cancer.
QUIZ	CHEST	CHEST180	Fibrous dysplasia. Multiple expansile rib lesions with cortical thinning. ?ground glass density. DDX: includes multiple myeloma, hyperparathyroidism with brown tumors.
QUIZ	CHEST	CHEST181	Achalasia
QUIZ	CHEST	CHEST182	Myelofibrosis and myelosclerosis and extramedullary hematopoiesis. Posterior mediastinal mass. Sclerotic bones. Splenomegaly.
QUIZ	CHEST	CHEST183	Pacemaker wire in branch of coronary sinus. This is why portable lateral views are sometimes ordered to check placement. "one view is no view"
QUIZ	CHEST	CHEST184	Metastatic calcification in chronic renal failure. Venous catheter: tip in low position in RA. The dreaded cervical ribs.
QUIZ	CHEST	CHEST185	Double aortic arch. Note how right is superior to left. Usually presents in small child with problem related to vascular ring.
QUIZ	CHEST	CHEST186	Wegener's granulomatosis. Multiple thick-walled cavities. Bronchocentric granulomatous lesions with cavitation 1/3 to 1/2 of the time. Sinus and renal disease.
QUIZ	CHEST	CHEST187	Erdheim Chester Disease. Interstitial lung disease, end-stage pre lung transplant. This disorder is a histiocytosis, also seen are sclerotic bone lesions.
QUIZ	CHEST	CHEST188	Lung fibrosis associated with ankylosing spondylitis.

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QUIZ	CHEST	CHEST189	Silicotuberculosis. Egg shell calcification in hilar nodes. Mid-upper lung small nodular background. Apical infiltrates are probably TB. Minimal left CPA-blunting - fibrosis versus effusion.
QUIZ	CHEST	CHEST190	Catheter in left highest intercostal vein. This is the vessel responsible for the "aortic nipple" on the frontal view.
QUIZ	CHEST	CHEST191	Tuberculosis of the spine with paraspinous mass and gibbus deformity.
QUIZ	CHEST	CHEST192	Another case of the small, nasty feeding tube heading down the airway and out into the pleural space where it causes a pneumothorax. There is a protocol for passing these which is not always followed.
QUIZ	CHEST	CHEST193	Neurofibromatosis. Posterior mediastinal masses. Rib notching.
QUIZ	CHEST	CHEST194	Paraspinous mass in spinal infection. Narrow disc with irregular margins typical of infection. (a vacuum cleft disc is strongly against infection)
QUIZ	CHEST	CHEST195	Mesothelioma right pleural space. Note calcified plaques left hemidiaphragm
QUIZ	CHEST	CHEST196	Cleidocranial dysplasia
QUIZ	CHEST	CHEST197	Mitral valve disease with enlarged LA, calcification LA wall, pulmonary hypertension.
QUIZ	CHEST	CHEST198	History of renal transplant. RLL infiltrate. Cardiomegaly. Note Clavicle resorption due to hyperparathyroidism (with renal osteodystrophy). Cortex is now restored due to healing after transplantation.
QUIZ	CHEST	CHEST199	Nodular pulmonary amyloidosis. 13 years earlier this patient looked much the same but nodules were not calcified. Percutaneous biopsy at that time diagnostic. Amyloid in lung: diffuse and nodular forms.

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QUIZ	CHEST	CHEST200	LAM: lymphangioliomyomatosis of the lung. Abnormal smooth muscle proliferation in the interstitium of the lung. Progress to cystic changes diffusely throughout the lung. May be complicated by pneumothorax, chylothorax.
QUIZ	CHEST	CHEST201	Miliary tuberculosis. Compare to old film. DDX: pneumoconiosis, Langerhans cell histiocytosis, sarcoid, and fungal disease.
QUIZ	CHEST	CHEST202	Classic pulmonary valvular stenosis. Enlarged main and left pulmonary arteries with normal-sized right PA.
QUIZ	CHEST	CHEST203	Coarctation of thoracic aorta. LV enlargement. Rib notching.
QUIZ	CHEST	CHEST204	Osteogenic sarcoma of right humerus resected-now with lung mets-some of which have cavitated giving pneumothorax. Subpleural cavitory mets giving pneumothorax are not too infrequent in osteosarcoma.
QUIZ	CHEST	CHEST205	Syphilitic aneurysm of ascending aorta. Calcification predominantly in the ascending aorta should raise the possibility of syphilis.
QUIZ	CHEST	CHEST206	Silicosis/CWP with large opacities. The background of "p" rounded small opacities makes this case believable. Lawyers try to sell anything as large opacities.
QUIZ	CHEST	CHEST207	Thymoma: Differential includes lymphoma, teratoma, inflammatory or metastatic nodes.
QUIZ	CHEST	CHEST208	Alveolar sarcoid. Bilateral alveolar infiltrates, hilar and paratracheal adenopathy (little change from one month ago). Relatively young black female patient. Chest was normal one year ago.

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QUIZ	CHEST	CHEST209	Rounded atelectasis. Less common location. Note associated thickened pleura on CT. Do not make this diagnosis without adjacent thickened pleura.
QUIZ	CHEST	CHEST210	Myelofibrosis and myelosclerosis. Sclerotic bones and big spleen suggest this, mastocytosis and lymphoma.
QUIZ	CHEST	CHEST211	Teratoma. Large anterior mediastinal mass with calcification in wall, fluid attenuation center.
QUIZ	CHEST	CHEST212	Erosion of thoracic spine by aortic aneurysm.
QUIZ	CHEST	CHEST213	Simulated infiltrate/mass right cardiophrenic angle due to pectus excavatum deformity.
QUIZ	CHEST	CHEST214	LUL atelectasis
QUIZ	CHEST	CHEST215	Dissection descending thoracic aorta. Intimal calcification is displaced away from the the contour of the aorta.
QUIZ	CHEST	CHEST216	Healed spine fractures and healed sternal insufficiency fracture. Note that the superior portion of the sternum is displaced posterior to the inferior portion. This is not so in many cases of direct blow to the sternum.
QUIZ	CHEST	CHEST217	Pulmonary sling. Lt. PA from right.

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QUIZ	CHEST	CHEST220	16 y/o female (1949) dx osteogenic sarcoma w/ removal following unknown amount of radiation therapy. Presented w/ pain in groin and lateral aspect of the hip which is constant in nature. X-ray findings revealed both a sclerotic and moth-eaten appearance of the left ilium w/ disruption & extension beyond cortex w/ new bone formation and tumor mass extending both laterally and medially. There is perpendicular new bone formation to areas of this mass best seen medially. chest x-ray reveal multiple bilateral calcified or ossified pulmonary nodules. Not all calcified lung nodules are benign.
QUIZ	CHEST	CHEST221	Enlarged pulmonary arteries. Cardiomegaly. Etiology: ASD
QUIZ	CHEST	CHEST222	Rheumatoid lung. Interstitial infiltrates. C1-C2 subluxation on flexion lateral C-spine know the 5 chest findings in RA
QUIZ	CHEST	CHEST223	Scimitar syndrome. Note large right lower lung vein hypoplastic right lung. "accessory hemidiaphragm" anterior density on lateral with appearance similar to upper lobe collapse or resection.
QUIZ	CHEST	CHEST224	Thalassemia Major with expanded ribs and humeri due to marrow expansion. Appearance becomes less striking in adults.
QUIZ	CHEST	CHEST225	Pericardial effusion. Note separation of epicardial fat line from the margin of the heart silhouette. This is a published sign of pericardial effusion on the lateral view.
QUIZ	CHEST	CHEST226	Bronchial stump leak. A-F level should never get lower. Mediastinum should never shift away from the operated side.

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QUIZ	CHEST	CHEST227	Thorast contrast medium residue in spleen and nodes. This man had contrast extravasation in neck during carotid angiography leading to fibrous tissue tumor in the neck. Thorast gave great opacification of vessels but unfortunately was an Alpha -emitter which was sequestered in the RE system.
QUIZ	CHEST	CHEST228	Pulmonary involvement from laryngotracheal papillomatosis. About 1% have this complication. Lesions spare the segmental bronchi. Probably due to cells shed or displaced from proximal lesions which get distal to mucociliary protection. Associated with human papilloma virus - 6C.
QUIZ	CHEST	CHEST229	Alveolar sarcoid: hilar and right paratracheal adenopathy and bilateral focal infiltrates/masses. Many other disorders which might give the infiltrates do not have hilar adenopathy. The adenopathy is very important to making this diagnosis.
QUIZ	CHEST	CHEST230	AVM's : Vessel leading to mass makes diagnosis. Note surgery on left. As some AVM's are removed others may enlarge. Surgery leads to vanishing lung. This is why endovascular occlusion is popular.
QUIZ	CHEST	CHEST231	Poland syndrome
QUIZ	CHEST	CHEST232	Varicella pneumonia in 24 yr old female, 10 wks pregnant. "alveolar nodules" DDX: other viral pneumonia, alveolar sarcoid, BOOP, langerhans cell histiocytosis, lymphoma, bronchoalveolar carcinoma.
QUIZ	CHEST	CHEST233	Broncogenic cyst. A smooth mass near the carina in an 18 year old patient makes this a likely possibility. CT attenuation varies with cyst contents.
QUIZ	CHEST	CHEST234	Hilar adenopathy. Metastatic renal cell carcinoma.

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QUIZ	CHEST	CHEST235	Alveolar proteinosis. Mid-lower lung infiltrates 20-50 yr old. Symptoms may be less impressive than radiography. DDX: edema, PCP, goodpastures, and idiopathic hemorrhage. Nocardia superinfection frequent.
QUIZ	CHEST	CHEST236	Charcot shoulder, spine, knee
QUIZ	CHEST	CHEST237	LLL pneumonia which presented as "abdominal pain"
QUIZ	CHEST	CHEST238	Focal RLL infiltrate in HIV+ patient. Infiltrate much better seen on abdomen radiography. This is often true of disease in the posterior CPA.
QUIZ	CHEST	CHEST239	Missing left scapula due to Ewing's Sarcoma.
QUIZ	CHEST	CHEST240	"Pseudosnowcap" appearance of the humeral heads caused by overlap with the acromion. Someone, certainly not you, might diagnose AVN.
QUIZ	CHEST	CHEST241	Anatomic Variant: Bilateral coracoclavicular joints. These are of no known advantage. They are said to be more common in some populations in Malasia.
QUIZ	CHEST	CHEST242	Paget's disease, right clavicle. Note increased size of bone and sclerosis in comparison to the left side which is normal. This patient also suffers from minimal cardiomegaly, obesity, and moderate shoulder arthritis.
QUIZ	CHEST	CHEST243	Paget's right clavicle. Also-cardiomegaly, aortic valve prosthesis, and tortuosity, dilatation, and arteriosclerosis aorta.
QUIZ	CHEST	CHEST244	Neuropathic shoulder in syringomyelia. This is most common cause in shoulder. Diabetes is the most common etiology of neuropathic arthropathy in the foot. Disorganization, bone fragments.
QUIZ	CHEST	CHEST245	Latissimus dorsi flap to assist cardiac output. Note additional pacer wires to the muscle moved into the anterior left chest.

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QUIZ	CHEST	CHEST246	Aortic insufficiency. Big LV and prominent ascending aorta in a relatively young individual.
QUIZ	CHEST	CHEST247	Great Paget's skull, humerus. Note basilar invagination.
QUIZ	CHEST	CHEST248	Bell Shaped Thorax. Renal osteodystrophy.
QUIZ	CHEST	CHEST249	Aortic Stenosis. Aortic valve calcification. LV hypertrophy but not the large LV of insufficiency.
QUIZ	CHEST	CHEST250	CRMO=Chronic recurrent multifocal osteomyelitis. Enlarged, sclerotic bones. Plasma cell infiltrate. Usually no organism cultured. Usually children, young adults. Often symmetric.
QUIZ	CHEST	CHEST251	Fibrous dysplasia left second rib.
QUIZ	CHEST	CHEST252	Chondrosarcoma manubrium. Probably #3 sternal malignancy after metastases and myeloma.
QUIZ	CHEST	CHEST253	Calcified pleural plaques. Bilateral calcified plaques usually indicate prior asbestos exposure. The plaques have no functional significance.
QUIZ	CHEST	CHEST254	RUL Atelectasis.
QUIZ	CHEST	CHEST255	Healing rib fractures with hyperplastic callous due to steroid treatment.
QUIZ	CHEST	CHEST256	Achalasia
QUIZ	CONG	CONG001	Klippel -Trenaunay-Weber syndrome. Vascular malformations demonstrated by MRI. Congenital vascular malformations. Overgrowth of extremities due to hyperemia. Triad: port wine stains, varicose veins, and local gigantism, usually in a monomelic distribution.

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QUIZ	CONG	CONG002	Ossification of the stylohyoid ligament has been associated with symptoms in two groups of patients: post-tonsillectomy patients with pain in the pharynx radiating to the mastoid region, foreign body sensation in the throat or taste abnormality and patients with pain in the carotid artery distribution. Eagle Syndrome. Consider in neck pain of obscure origin.
QUIZ	CONG	CONG003	Chondrodysplasia punctata, probably rhizomelic form. Stippled epiphyses. Rhizomelic shortening of extremities. This form usually leads to death in 1st year. Autosomal recessive.
QUIZ	CONG	CONG004	Spondyloepiphyseal dysplasia. Universal decreased vertebral height, varus hips, epiphyseal deformities most marked in the more proximal joints. Note also metaphyseal abnormalities. Remember potential for C1-C2 subluxation.
QUIZ	CONG	CONG005	Ainhum. Constricting soft tissue band and defect through underlying bone. Middle-aged West African Blacks.
QUIZ	CONG	CONG006	Probable SED tarda. Man from prison with back pain and remote history of GSW (bullet and bullet fragments). Vertebral shape on lateral view is characteristic. Posterior portions of vertebral bodies higher than anterior. Discs often calcify. Premature degenerative disease of the spine.
QUIZ	CONG	CONG007	Neurofibromatosis. Posterior mediastinal masses (neurofibromas and lateral meningoceles). Inferior rib notching due to neurofibromas of the intercostal nerves.

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QUIZ	CONG	CONG008	Club feet. Very common abnormality possibly related to in utero positioning. Calcaneus in equinus (pointed down). Parallel axes of talus and calcaneus on both frontal and lateral views. Adduction of metatarsals. Treatment can be by repeated casting to correct deformity of surgery if that fails.
QUIZ	CONG	CONG009	Multiple osteomas in Gardner's syndrome. Colon polyposis identical to familial polyposis (hence with high malignant potential). Multiple osteomas. Fibrous soft tissue tumors. Epidermoid cysts.
QUIZ	CONG	CONG010	"Iliac horns" in Nail-patella syndrome aka Fong's syndrome, hereditary osteo-onycholysis. Iliac horns as shown here. Elbow and knee abnormalities (small or absent patellas). Nail deformities. Renal disease which may be fatal.
QUIZ	CONG	CONG011	Melorheostosis. Flowing sclerotic bone formation in sclerotomal (spinal sensory) distribution often involving multiple bones of one extremity. Can cause pain. Can have soft tissue bone formation. Limb length discrepancies. Joint contractures. Skin lesions (linear scleroderma) and fibromatosis in similar distribution may occur. Increased uptake on radionuclide bone scan.
QUIZ	CONG	CONG012	Neurofibromatosis. Bowing of tibia and fibula convex anteriorly and laterally. Bowing can progress to pseudoarthrosis.
QUIZ	CONG	CONG013	Marfan syndrome. Posterior scalloping of lumbar vertebrae due to "dural ectasia".(Dural ectasia seen also in neurofibromatosis and Ehlers-Danlos syndrome). Note instrumentation for scoliosis, also common in Marfan's.

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QUIZ	CONG	CONG014	Calcaneonavicular coalition. Note also healing metatarsal fractures. Need internal oblique view to visualize coalition which in this case is fibrous--looks like a joint which should not be there. May see elongated anterior process of calcaneus on lateral (anteater nose sign). The other common coalition is talocalcaneal.
QUIZ	CONG	CONG015	Pseudoarthroses of tibia and fibula in neurofibromatosis. DDX: fibrous dysplasia and osteofibrous dysplasia. The bone is abnormal and does not respond well to conventional attempts to induce healing.
QUIZ	CONG	CONG016	Multiple hereditary exostoses. Osteochondromas near many joints, forearm deformity. Note short 4th metacarpal (DDX: trauma, normal variant, Turner's syndrome, pseudohypoparathyroidism, and pseudo-pseudohypoparathyroidism)
QUIZ	CONG	CONG017	Tuberous sclerosis. Interstitial lung disease similar in nature to that in LAM (lymphangiomyomatosis) and subungual fibromas with erosions of the distal phalanges of the toes. Also causes angioleiomyomas of kidneys and intracranial paraventricular calcifications.
QUIZ	CONG	CONG018	Osteopetrosis. Diffusely sclerotic bones. Erlenmeyer flask deformity of distal femurs (defective osteoclasts in cut-back zone).
QUIZ	CONG	CONG019	Maffucci's syndrome. Enchondromatosis plus cavernous hemangiomas. Phleboliths identify hemangiomas.

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QUIZ	CONG	CONG020	Neurofibromatosis. Multiple nonossifying fibromas and renal artery stenosis--one of the possible causes of hypertension in neurofibromatosis. Do you know another? Multiple nonossifying fibromas are also part of the Jaffe-Campanacci syndrome. The relation of these syndromes is unclear.
QUIZ	CONG	CONG021	
QUIZ	CONG	CONG022	Osteogenesis imperfecta. Striking osteoporosis. Acetabular protrusion. Multiple vertebral compression deformities.
QUIZ	CONG	CONG023	Ollier's Disease established by multiple biopsies. Expansile lytic lesions are enchondromas. Fibrous dysplasia is in the DDX.
QUIZ	CONG	CONG024	Calcaneonavicular coalition, probably fibrous. One of the two common tarsal coalitions. What is the other? "Anteater nose" sign on lateral view.
QUIZ	CONG	CONG025	Melorheostosis. Flowing sclerotic bone formation in sclerotomal (spinal sensory) distribution often involving multiple bones of one extremity. Can cause pain. Can have soft tissue bone formation. Limb length discrepancies. Joint contractures. Skin lesions.
QUIZ	CONG	CONG026	Multiple hereditary exostoses. Forearm deformity. Exostoses in hands (present in over 50%).
QUIZ	CONG	CONG027	Congenital lipodystrophy. (Lipoatrophic diabetes) Sclerotic foci in femoral heads. Lack of fat. Diabetes.
QUIZ	CONG	CONG028	Madelung deformity. Medial sloping of radial articular surface. Radius bowed convex laterally. Dorsally dislocated distal ulna. Can be seen in mesomelic dwarfism dyschondrosteosis.

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QUIZ	CONG	CONG029	Melorheostosis. Flowing sclerotic bone formation in sclerotomal (spinal sensory) distribution often involving multiple bones of one extremity. Can cause pain. Can have soft tissue bone formation. Limb length discrepancies. Joint contractures. Skin lesions (linear scleroderma) can be seen as well as fibromatosis in the same distribution.
QUIZ	CONG	CONG030	Englemann's disease. Progressive diaphyseal dysplasia. Associated with muscular weakness.
QUIZ	CONG	CONG031	Streeter's bands aka amniotic bands. Associated with cleft lip, cleft palate, club foot. May get neurologic deficit distal to the bands.
QUIZ	CONG	CONG032	Melorheostosis. Flowing sclerotic bone formation in sclerotomal (spinal sensory) distribution often involving multiple bones of one extremity. Can cause pain. Can have soft tissue bone formation. Limb length discrepancies. Joint contractures. Skin lesions and fibromatosis in similar distribution.
QUIZ	CONG	CONG033	Osteopetrosis. Diffusely sclerotic bones. Calvarial sclerosis can affect cranial nerves.
QUIZ	CONG	CONG034	Triquetrum-lunate fusion. Most common carpal fusion. One case also has metacarpal fracture and the other a distal radial fracture. The scapholunate distance can be increased without signifying injury to scapho-lunate ligament.
QUIZ	CONG	CONG035	Multiple hereditary exostoses around knee. Note continuity of cortex into lesion. Be prepared to recite five complications.
QUIZ	CONG	CONG036	Neurofibromatosis. Bowing of tibia and fibula convex anteriorly and laterally. Bowing can progress to pseudoarthrosis.

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QUIZ	CONG	CONG037	Dorsal defect of patella. Cartilagenous rest located posteriorly in upper-outer quadrant of patella. Not a source of pain. Other lucent defects in patella include infection, chondroblastoma, degenerative cyst, etc.
QUIZ	CONG	CONG038	Amputations due to amniotic bands. Streeter's bands. May be associated with cleft lip and cleft palate.
QUIZ	CONG	CONG039	Large ossified stylohyoid ligament. May cause Eagle syndrome. Also note D.I.S.H.-type osteophytes in cervical spine.
QUIZ	CONG	CONG040	Pachydermoperiostosis. Widespread periosteal reaction. Usually males. Thick skin. Excessive sweating. May simulate features of acromegaly. Non-tender periosteal reaction.
QUIZ	CONG	CONG041	Blount's disease. Varus deformity both knees with substantial component in proximal tibias. If the proximal tibial varus is over about 11 degrees (draw a line through the proximal tibial metaphyseal "beaks"-this should be at 90 degrees to tibial axis-if it differs from 90 degrees by more than 11 degrees, progression of varus is likely) it is likely to progress with age rather than correct. Basically follow up is needed to see what happens and plan for correction if necessary.
QUIZ	CONG	CONG042	Neurofibromatosis. "Ribbon" ribs and clavicle. Scoliosis thoracic spine.
QUIZ	CONG	CONG043	Trapezium-scaploid fusion. GSW ulna.

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QUIZ	CONG	CONG044	Enchondromatosis aka Ollier's disease. Expansile lesions with lobulated margins reflecting the lobulated growth pattern of cartilage. Calcification of matrix less common in hands than elsewhere. Malignant degeneration in hand very uncommon.
QUIZ	CONG	CONG045	Neurofibromatosis tibia and fibula. Sclerosis, streaky pattern and overgrowth. DDX: Paget's, chronic infection.
QUIZ	CONG	CONG046	Neurofibromatosis with posterior scalloping of the lumbar vertebrae due to "dural ectasia". Similar changes also seen in Marfan syndrome and Ehler's Danlos syndrome.
QUIZ	CONG	CONG047	Pseudoarthroses left tibia and fibula in neurofibromatosis. These are a difficult problem to deal with because of the dysplastic nature of the bone in the region.
QUIZ	CONG	CONG048	Klippel-Trenaunay-Weber syndrome. Overgrowth of fingers due to hyperemia. Phleboliths in hemangioma. Also amputation, fusion and ulna plus on right. DDX: for overgrown fingers also includes neurofibromatosis and macrodystrophy lipomatosa.
QUIZ	CONG	CONG049	Multiple epiphyseal dysplasia. Irregular ossification of capital femoral epiphyses. Flattening of acetabula and femoral heads. Hypothyroidism can cause irregular ossification of epiphyses also. Perthes disease usually not bilateral.
QUIZ	CONG	CONG050	Accessory Soleus muscle and tendon seen passing through Kager's triangle on the right side, anterior to the Achilles tendon and posterior to flexor hallucis longus. May cause pain during exercise.

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QUIZ	CONG	CONG051	Lower extremities with valgus deformity knees, hypoplasia of lateral proximal tibia and short fibulas in Ellis-vanCreveld syndrome. Cardiac abnormalities in 60%. Polydactyly.
QUIZ	CONG	CONG052	Absent radius. Thumb present. This could be seen in Thrombocytopenia Absent Radius syndrome, ventriculoradial syndrome, Fanconi's anemia and VATER.
QUIZ	CONG	CONG053	Short 4th metacarpal, probably secondary to trauma. Soft tissue swelling around middle finger PIP joint. DDX of short 4th includes pseudo-and pseudopseudohypoparathyroidism, Turner's syndrome, multiple hereditary exostoses, and normal variant.
QUIZ	CONG	CONG054	Sprengel deformity with omovertebral bone. Scapula is rotated with medial upper corner elevated. Shape of scapula approximates equilateral triangle. May be associated with Klippel-Feil deformity (20-25% of patients with Klippel - Feil deformity have Sprengel's deformity)
QUIZ	CONG	CONG055	Agenesis sacrum and lower lumbar spine. Dislocation right hip. Caudal regression syndrome. Often diabetic mother. Often associated anomalies in other organ systems.
QUIZ	CONG	CONG056	Sprengel's deformity on left side. Scapula elevated and rotated. Fibrous band or bone (omovertebral bone) connects scapula to cervical spine. Association with Klippel-Feil syndrome.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	CONG	CONG057	Short 4th metacarpal in Turner's syndrome. Before the invention of DEXA scanning, radiographic densitometry with a step wedge was sometimes used to evaluate bone density.
QUIZ	CONG	CONG058	Bipartate lunate bone, best seen on lateral view.
QUIZ	CONG	CONG059	Short fourth metacarpal and multiple hereditary exostoses (large one projecting from distal little finger metacarpal). Recent surgery with pin fixation.
QUIZ	CONG	CONG060	Melorheostosis. Flowing sclerotic bone formation in sclerotomal (spinal sensory) distribution often involving multiple bones of one extremity. Can cause pain. Can have soft tissue bone formation (as in this case near the knee). Limb length discrepancies. Joint contractures. Skin lesions. Some of the sclerotic lesions can resemble osteopoikilosis and osteopathia striata.
QUIZ	CONG	CONG061	Salter type II distal radius fracture and triquetrum-lunate fusion. Joint between lunate and triquetrum is highly variable, ranging from normal width to narrower than other intercarpal joints to fused partially or totally.
QUIZ	CONG	CONG062	Klippel-Trenaunay-Weber syndrome. Overgrowth of toes due to hyperemia. Hyperemia due to hemangiomas. DDX: for overgrown toes and fingers also includes neurofibromatosis and macrodystrophy lipomatosa.

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QUIZ	CONG	CONG063	Fibrodysplasia ossificans progressiva. Extensive soft tissue bone formation may lead to extraarticular joint fusion, eating and breathing disorders. In the child the symptoms may be confused with JRA or the soft tissue masses with some form of sarcoma. Foot radiograph is helpful as the great toe is abnormal in all cases
QUIZ	CONG	CONG064	Harris view of right foot (single foot) shows solid bony coalition between talus and calcaneus at middle facet of subtalar joint. Harris view of both feet is another patient with abnormal sustentacular-talar joints bilaterally: narrow and sloping downward medially.
QUIZ	CONG	CONG065	Osteopoikilosis pelvis. Benign sclerosing bone disorder. Note how the sclerotic areas cluster around regions of former growth plates. Histology is the same as bone island. Not "hot" on bone scan.
QUIZ	CONG	CONG066	Dysplasia epiphysealis punctata. Rhizomelic, autosomal recessive form. Usually fatal by one year of age.
QUIZ	CONG	CONG067	Neurofibromatosis. Mediastinal masses due to neurofibromas and/or lateral meningoceles/ Masses along ribs and inferior rib notching due to neurofibromas of intercostal nerves("Ribbon ribs" are due to dysplastic bone rather than pressure erosion).Fusion C1-2 with marked enlargement neural foramen C1-2, probably due to neurofibroma. Increased soft tissue anterior to upper C-spine, probably due to neurofibromas.

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QUIZ	CONG	CONG068	Multiple hereditary exostoses. Common. Autosomal dominant inheritance. Osteochondromas point away from adjacent joint. Cortex of osteochondroma contiguous with that of bone. Possible complications: malignant degeneration to chondrosarcoma, fracture, mechanical impingement on neighboring structures, overlying bursitis.
QUIZ	CONG	CONG069	Multiple hereditary exostoses. Forearm deformity with bowing, short ulna. Valgus knees are frequent.
QUIZ	CONG	CONG070	Osteopetrosis. Sclerotic bones. Transverse fracture right proximal femur--bone is not as strong as normal bone despite density. Another old, healed fracture femur. Erlenmeyer flask deformity distal femurs.
QUIZ	CONG	CONG071	Neuropathic arthropathy left foot in 25 year old diabetic (Chopart's joint). Took up aerobic dancing, developed foot pain. Also note fibrous calcaneonavicular coalition on the right.
QUIZ	CONG	CONG072	Calcaneonavicular coalition: fibrous. This is best seen on the oblique view. "Anteater nose" sign may be seen on lateral (Nose is anterior process of calcaneus). These often become symptomatic in teenagers. If rest fails as a treatment the coalition may be resected or a triple arthrodesis performed.
QUIZ	CONG	CONG073	Melorheostosis right foot. Flowing sclerotic new bone formation with the "dripping candle wax" appearance.
QUIZ	CONG	CONG074	Multiple epiphyseal dysplasia. Deformed femoral heads and acetabula. Knees and ankles in this patient were near normal..Proximal joints are most severely affected.

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QUIZ	CONG	CONG075	Klippel-Trenaunay- Weber syndrome. Overgrowth right foot. Phleboliths in soft tissue hemangioma. Lytic lesions around right hip caused by vascular lesion. Multiple hemangiomas. DDX for giant toe includes neurofibromatosis and macrodystrophia lipomatosa.
	CONG	CONG076	Tibia vara in Blount's disease. Note deformity of medial tibial metaphysis and epiphysis. Newborns exhibit varus angulation which usually disappears by 18 months of age. Physiologic bowing is 10 or more degrees of knee varus after 18 months. The tibial metaphyseal-diaphyseal angle helps differentiate physiologic bowing from Blount's. An angle of 11 degrees or greater is highly predictive for development of Blount's
	CONG	CONG077	Neurofibromatosis. Pseudoarthrosis of tibia and fibula. The bone in this region is abnormal making the deformity difficult to treat by conventional methods of fracture treatment. Other less likely etiologies for the deformity are fibrous dysplasia and osteofibrous dysplasia.
	CONG	CONG078	Toxoplasmosis with intracranial calcifications and "celery stalk" metaphyses. Mom may have like undercooked pork. Patient had marked hepatosplenomegaly.
	CONG	CONG079	Osteopoikilosis. Benign sclerosing bone dysplasia with focal sclerotic areas much like bone islands which tend to cluster around growth plate regions. Not hot on bone scan. Air in soft tissues from dog bite.

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QUIZ	CONG	CONG080	Rubenstein-Taybi syndrome. Broad thumbs and toes, mental and motor retardation, high arched palate and varying eye abnormalities. Foot resembles deformity seen in fibrodysplasia ossificans progressiva.
QUIZ	CONG	CONG081	Hypochondroplasia and multiple hereditary exostoses.
QUIZ	CONG	CONG082	Congenital (or long term) dislocation of right radial head. Proximal radius should line up with capitellum on all views. Because the radius has not been articulating with the capitellum during development, the radius has grown too long and the articular surface of the head is not concave.
QUIZ	CONG	CONG083	Melorheostosis right lower extremity. Note that soft tissue calcification may be seen as well as the "dripping candle wax" appearance. Sclerotomal distribution. Most often monomelic.
QUIZ	CONG	CONG084	Enchondromatosis. (Ollier's disease). Extensive involvement of right side pelvis, right femur, and right tibia and fibula. Contralateral lower extremity was normal. Limb shortening is the most common presenting complaint.
QUIZ	CONG	CONG085	Sacral agenesis. Caudal regression syndrome. 20% are children of diabetic mothers. Variable amounts of sacrum and lumbar spine are absent. Association with hip dislocation, flexion contractures of knees and hips and foot deformities. Associated GI and GU anomalies.
QUIZ	CONG	CONG086	Multiple hereditary exostoses. Typical forearm deformity. Note how in paired bones the osteochondromas can impinge on the adjacent bone.
QUIZ	CONG	CONG087	Thrombocytopenia absent radius (TAR) syndrome.

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QUIZ	CONG	CONG088	Familial metaphyseal dysplasia (Pyle's disease). Differentiate from craniometaphyseal dysplasia by lack of cranial changes in Pyle's.
QUIZ	CONG	CONG089	Dyschondrosteosis. A mesomelic dysplasia with Madelung deformity--sloping radial articular surface and "V" shaped carpus. Radius is bowed, Ulna often subluxed dorsally at distal radioulnar joint. Deformity usually bilateral, more severe in girls than in boys.
QUIZ	CONG	CONG090	Tuberous sclerosis. Cyst-like defects in terminal phalanges. Periosteal new bone formation can also be seen in hands and, more often, in feet.
QUIZ	CONG	CONG091	Poland syndrome. Pectoralis major muscle absent. Breast also absent in this case. Rib anomalies. Hand anomalies.
QUIZ	CONG	CONG092	Diastrophic Dysplasia. "Hitchhiker's thumb"- Hypermobile, abducted, proximally inserted thumb.
QUIZ	CSPINE	CSPINE01	Rheumatoid arthritis with approximately 1 cm anterior subluxation of C1 on C2 on flexion view. Note that without the flexion view everything appears normal.
QUIZ	CSPINE	CSPINE02	Cancer of epiglottis. Also degenerative disc disease C5-6.
QUIZ	CSPINE	CSPINE03	Epiglottitis, tonsillitis-lots of soft tissue swelling. Hypoplastic posterior arch of C1.
QUIZ	CSPINE	CSPINE04	Air-fluid level in sphenoid sinus indicating likely basal skull fracture.
QUIZ	CSPINE	CSPINE05	"Hangman's" fracture C2. Flexion teardrop fracture C5 (no neurologic deficit--deficit is common with the flexion teardrop and uncommon with the hangman's--at least the non-judicial variety).
QUIZ	CSPINE	CSPINE06	Enlarged lingual tonsils.

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<u>QUIZ</u>	CSPINE	CSPINE07	Cyst of epiglottis. Check out the airway on c-spine exams--it may require altering the window/level considerably.
<u>QUIZ</u>	CSPINE	CSPINE08	Cyst of aryepiglottic fold. Distention of seromucinous glands causes a smooth mass with a distinctive appearance at endoscopy.
<u>QUIZ</u>	CSPINE	CSPINE09	Tooth in pyriform sinus. Teeth, and other things may get caught there. Tooth probably dislodged during intubation.
<u>QUIZ</u>	CSPINE	CSPINE10	Right apex mass on c-spine exam which was obtained for right arm pain(to evaluate the neural foramina). Note also small right cervical rib. The chest film showed these things, a right paratracheal mass, high right hilum, low left hilum and stomach on the right side. CT showed azygos continuation of IVC (right paratracheal mass) and situs ambiguous. Mass (cavitary) required biopsy diagnosis.
<u>QUIZ</u>	CSPINE	CSPINE11	C1-2 subluxation in rheumatoid arthritis. (Once upon a time someone tried to demonstrate subluxation in a bed-ridden patient with RA by having them flex their neck while lying supine in bed. What was wrong with that?)
<u>QUIZ</u>	CSPINE	CSPINE12	C1 burst fracture (Jefferson Fracture). Odontoid view is key to show lateral displacement of one or both lateral masses of C1. Axial load causes the wedge-shaped lateral masses to be displaced laterally. There may be little or no soft tissue swelling anterior to the spine on the lateral.

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<u>QUIZ</u>	CSPINE	CSPINE13	Large anterior osteophytes without significant disc narrowing are characteristic of Forrestier's Disease= D.I.S.H.. In the pelvis one may see enthesophytes at muscle insertion sites without SI joint fusion.
<u>QUIZ</u>	CSPINE	CSPINE14	D.I.S.H.=Diffuse idiopathic skeletal hyperostosis. Large anterior osteophytes with relatively normal discs. Osteophytes may bridge and fuse. Note in t-spine how the osteophytes start back a little ways from the corner of the vertebral body.
<u>QUIZ</u>	CSPINE	CSPINE15	Air in soft tissues of neck due to GSW. With air dissecting along soft tissue planes in this manner one should also be suspicious of pneumomediastinum and check the chest images.
<u>QUIZ</u>	CSPINE	CSPINE16	D.I.S.H. and RA with C1-2 subluxation. Whether or not something like this is symptomatic depends on the space remaining between the posterior superior corner of C2 and the posterior arch of C1--both the size of the canal and the amount of subluxation influence this.
<u>QUIZ</u>	CSPINE	CSPINE17	Both patients have D.I.S.H. (Forrestier's Disease). One also has ossification of the posterior longitudinal ligament (OPLL) which has can be associated and has narrowed the spinal canal to about 1 cm AP)
<u>QUIZ</u>	CSPINE	CSPINE18	D.I.S.H. with huge osteophytes and normal discs. Sometimes the osteophytes can lead to swallowing difficulties.
<u>QUIZ</u>	CSPINE	CSPINE19	Anterior cervical fusion with markedly loose plate and screw fixation device. Also laminectomy.
<u>QUIZ</u>	CSPINE	CSPINE20	"Vertebra plana" (severe compression fracture) T1 due to Eosinophilic Granuloma, aka Langerhans Cell Histiocytosis.

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<u>QUIZ</u>	CSPINE	CSPINE21	Type III Dens fracture--extends into the body and heals more readily than type II which often fails to unite. Soft tissue swelling anterior to the upper c-spine should lead one to perform CT even if fracture is not seen on conventional images.
<u>QUIZ</u>	CSPINE	CSPINE22	Marked ossification of stylohyoid ligaments. Sometimes this results in Eagle's Syndrome. It may cause throat pain, foreign body sensation or facial pain. Diagnosis can be confirmed by palpation of the stylohyoid process in the tonsillar fossa with exacerbation of the pain or relief of the pain by local anesthetic injection.
<u>QUIZ</u>	CSPINE	CSPINE23	Forrester's, aka D.I.S.H. Huge osteophytes which sometimes cause dysphagia.
<u>QUIZ</u>	CSPINE	CSPINE24	Lytic metastasis to C2. In older patients metastasis and myeloma should be the leading diagnoses for a lytic lesion. C2 is a favored location for some reason.
<u>QUIZ</u>	CSPINE	CSPINE25	D.I.S.H. and OPLL (ossification of posterior longitudinal ligament) and a narrow canal and disc problems shown on MRI.
<u>QUIZ</u>	CSPINE	CSPINE26	Cancer of epiglottis.
<u>QUIZ</u>	CSPINE	CSPINE27	Rheumatoid arthritis with subluxation at C1-2 and C3-4. Multilevel subluxations and disk and facet joint narrowing are typical of RA.
<u>QUIZ</u>	CSPINE	CSPINE28	Os odontoideum. Failure of fusion of ossification center for odontoid to remainder of C2. This can lead to the same problems as a type II odontoid fracture. Note the considerable subluxation on flexion-extension.

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<u>QUIZ</u>	CSPINE	CSPINE29	Congenital fusion of cervical spine. Additional anomalies may aid in differentiating from some other type of fusion. More than two vertebrae fused together qualifies as Klippel-Feil. Limited motion is usually the only problem.
<u>QUIZ</u>	CSPINE	CSPINE30	Markedly increased soft tissue anterior to cervical spine (should be about as thick as a disc in the upper cervical region--above start of esophagus). In this case, the cause was neurofibromatosis. Neurofibromas have also opacified the lung apices (which you always check).
<u>QUIZ</u>	CSPINE	CSPINE31	Acute epiglottitis. Swollen epiglottis (and also tonsils in one case). The leaning forward, distended pharynx, "air hunger" posture is typical. You need to be ready to act as 1/3 of patients eventually require intubation. H influenzae and beta-hemolytic streptococcus are common causative organisms.
<u>QUIZ</u>	CSPINE	CSPINE32	Ossification of the posterior longitudinal ligament and D.I.S.H. OPLL acts like a space-occupying mass in the spinal canal.
<u>QUIZ</u>	CSPINE	CSPINE33	Rheumatoid arthritis with C1-2 subluxation.
<u>QUIZ</u>	CSPINE	CSPINE34	Acute epiglottitis. Not infrequent in adults. Less common in children than in former times. Don't mess with the airway unless you are ready to intubate and expert in that skill and also ready to do an emergency tracheostomy if needed.

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<u>QUIZ</u>	CSPINE	CSPINE35	Atlanto-occipital dislocation in child hit by school bus. C1 is also superiorly distracted from C2. There is way too much space between the occiput and C1. Various lines such as the "X" line of Lee can help you evaluate this region. Also the posterior surface of the clivus should line up with the posterior surface of the dens.
<u>QUIZ</u>	CSPINE	CSPINE36	Rheumatoid arthritis with C1-2 subluxation, multiple other mild subluxations and mild disc narrowing.
<u>QUIZ</u>	CSPINE	CSPINE37	Multilevel degenerative disc disease but, worse yet, Pancoast tumor in right apex causing bone destruction in lower right side of c-spine and 1st and 2nd ribs. Patient presented with neck and right arm pain.
<u>QUIZ</u>	CSPINE	CSPINE38	Calcific tendonitis longus coli muscle. Patients present with neck pain and sometimes dysphagia also. Key findings are soft tissue swelling anterior to upper c-spine and amorphous calcification inferior to the anterior arch of C1. Remember accessory ossicles can occur here, but are not accompanied by symptoms or soft tissue swelling.
<u>QUIZ</u>	CSPINE	CSPINE39	Ossification of the posterior longitudinal ligament plus some disk disease and facet joint arthritis.
<u>QUIZ</u>	CSPINE	CSPINE40	"Vertebra plana" C5 due to Langerhans cell Histiocytosis.
<u>QUIZ</u>	CSPINE	CSPINE41	Tooth in pyriform sinus following intubation.

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QUIZ	CSPINE	CSPINE42	Aneurysm carotid artery near bifurcation. Because of turbulence, the bifurcation is the most common place to see calcification (in non-aneurysmal cases) in the carotids. Calcification indicates plaques and the danger of stenotic and embolic complications. Aneurysm is uncommon, but calcification alone may signal significant abnormality.
QUIZ	ED	C01	Dislocation left radial head. A line drawn along the axis of the proximal radial shaft should pass through the center of the capitellum on any view as is seen in the normal right elbow.
QUIZ	ED	C02	Fracture C5 seen on AP view only. Lateral mass of C5 on right is displaced laterally, breaking the normal smooth, wavy contour of the spine on the frontal view. Findings somewhat analogous to Jefferson fracture at C1.
QUIZ	ED	C03	Hyperostosis frontalis interna. Note sparring of midline on frontal view which is characteristic. Seen mostly in older females. Not associated with any particular disorder. Important if confused with disease. May be hot on radionuclide bone scan.
QUIZ	ED	C04	Multiple healing fractures around the knee suggest child abuse-aka "nonaccidental trauma" Metaphyseal corner fractures are typical. Periosteum is more loosely attached in children--not how far it is ripped up by hemorrhage.
QUIZ	ED	C05	Fracture coracoid process scapula. This could be overlooked on frontal views. Axillary view is excellent to demonstrate coracoid. Unusual fracture. Stress fractures of coracoid associated with trap and skeet shooting.

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QUIZ	ED	C06	Associated L-spine (L1 compression) and calcaneus fractures. CT helpful to evaluate comminuted calcaneal fractures. The patient jumped from second floor. The LD50 is 3 floors for jumping. Always jump from the second floor.
QUIZ	ED	C07	Bone resorption around the entry side of fixation pins indicates pin tract infection. Removal of the pin usually resolves the problem. Resorption around the entire length of the pin indicates loosening and/or osteomyelitis. Check for broken and loose hardware and placement in the wrong location.
QUIZ	ED	C08	Ankylosing spondylitis. Bilateral sclerosis and irregularity bilateral SI joints. Symmetrical cartilage narrowing in left hip joint. One of the few causes of low back pain diagnosed on plain radiograph.
QUIZ	ED	C09	Discitis and osteomyelitis L5-S1 with erosion of the adjacent end plates and disc narrowing. This is one of the few important diagnoses which can be made on the plain radiograph of the L-spine. (Others include: fracture, spondylolysis and spondylolisthesis, ankylosing spondylitis, gallstones, renal stones, aortic aneurysm)
QUIZ	ED	C10	"Drooping shoulder" --indicates either a neuromuscular disorder(in this case stroke) or the presence of a joint effusion.
QUIZ	ED	C11	Anterior dislocation right sternoclavicular joint. This results from a posteriorly -directed blow to the shoulder. Clavicle pivots on the rib cage, popping out the medial end. This injury is much less serious than posterior dislocation which can cause vascular injury.

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QUIZ	ED	C12	"Gamekeeper's Thumb"-avulsion fracture from medial base of proximal phalanx of thumb by ulnar collateral ligament. In past times, breaking the neck of small game caused this injury. More recently, skiing is a common cause. In this case, fighting with boyfriend.
QUIZ	ED	C13	Sclerosis posteromedial proximal tibia is due to healing stress fracture. In this case, an old fracture of the distal femur had healed with angulation, resulting in abnormal stress on the tibia.
QUIZ	ED	C14	Healing avulsion injury of anterior inferior iliac spine at insertion of rectus femorus. Sometimes such injuries can be misinterpreted as neoplasm. Healing fractures can look somewhat aggressive histologically, so a less than great pathologist can err. Note also single shotgun pellet-possibly in appendix from eating game harvested with shotgun. Note also that SI joints in a teenager can be wide and ill-defined.
QUIZ	ED	C15	Retropharyngeal abscess. Marked soft tissue swelling anterior to cervical spine. In the upper cervical spine the soft tissue should be about the thickness on an intervertebral disc. Focal air collections in the soft tissue, not the streaky type seen with air dissecting up from a pneumomediastinum.
QUIZ	ED	C16	Osteochondritis dissecans patella. This type of injury usually occurs on convex articular surfaces. In the knee the lateral aspect of the medial femoral condyle is the most common location. MRI can aid in determining the degree of fragment attachment which influences treatment.

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QUIZ	ED	C17	Destruction of C4 and C5 and the intervening disc with large anterior soft tissue mass/swelling due to Staphylococcus infection
QUIZ	ED	C18	Avascular necrosis (AVN) of the lunate. Note the increased density and decrease in size of the lunate over time. Scapholunate distance is also slightly increased due to ligamentous injury. AVN of the lunate can result from obvious trauma or be "idiopathic". The latter is associated with "ulna minus".
QUIZ	ED	C19	Posterior ligamentous disruption at C5-6. Note the acute kyphosis, "fanning" of the spinous processes of C5 and C6 and the high position of the facets of C5 on C6. Facets at this level are "perched" on the oblique views.
QUIZ	ED	C20	Ossification of the posterior longitudinal ligament. Symptoms are caused by the space occupying lesion in the spinal canal. Disordered vitamin A metabolism may be an etiologic factor. Association with other ossifying disorders such as D.I.S.H..
QUIZ	ED	C21	Osteoporosis with multiple vertebral compression fractures. One has a "vacuum cleft" within the vertebral body. This is described in the literature as a sign of AVN. The practical significance is that metastasis is unlikely to be the cause of a fracture which has a "vacuum cleft"
QUIZ	ED	C22	Scapholunate dissociation. Note the increased distance between scaphoid and lunate resulting from injury to the scapholunate ligament. This gap should be the same as between the other carpal bones. "Terry Thomas" sign. Picture courtesy of Roulon Waite.

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QUIZ	ED	C23	<p>Paget's disease involving the right side of the pelvis. Note sclerosis, coarse trabeculation, enlargement of the involved bones. Arthritis of the hip joint and acetabular protrusion are common complications.</p>
QUIZ	ED	C24	<p>Secondary hyperparathyroidism with erosion of the distal ends of the clavicles. Frayed, slightly cupped ends are typical. Note surgical clips in neck: probable parathyroidectomy to treat tertiary hyperparathyroidism. Wide mediastinum due to fat deposition secondary to steroid immunosuppression for renal transplantation.</p>
QUIZ	ED	C25	<p>Posterior dislocation of the humeral head. Note the abnormal relationship of glenoid and humeral head. Shoulder often locked in internal rotation. A fracture of the anterior aspect of the humeral head may occur due to impaction on glenoid (analogous to Hill-Sachs deformity with anterior dislocation). See axillary view post reduction in this case.</p>
QUIZ	ED	C26	<p>Scaphoid fracture with non-union or fibrous union. Note the sclerotic fracture margins. Degenerative arthritis will follow in a large percentage of cases.</p>
QUIZ	ED	C27	<p>Osteochondral fracture of medial dome of talus. No dot forget to look for these as well as the more common ankle injuries. Also check the base of the 5th metatarsal, the anterior process of the calcaneus and the sides of the talus and calcaneus for avulsion injuries.</p>

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	ED	C28	Fractures of multiple lumbar transverse processes, avulsed by the psoas muscle when this cyclist crashed, flying over the handlebars and forcibly extending the hip joints (versus iliopsoas). Direct trauma can also injure the transverse processes and may be associated with renal injury in that case.
QUIZ	ED	C29	Acute epiglottitis. Marked swelling of epiglottis and aryepiglottic folds. The organism in adults is usually H influenza or H parainfluenza or streptococcus pneumoniae.
QUIZ	ED	C30	Serial images show greater trochanter osteotomy reattached by wire sutures. On later image it is avulsed. If there is more than about 2 cm distraction, the abductors cannot function properly. On the other hand, if one sees broken wire sutures but the trochanter is in the proper location, it usually is OK.
QUIZ	ED	C31	Fracture right pubic bone near symphysis and fracture left L5 transverse process. L5 transverse process is attached to ilium by strong iliotransverse ligament. Because of this, a sacral fracture is often present also, as in this case.
QUIZ	ED	C32	Lateral dislocation of patella. It is unusual to see the patella still dislocated. Once relocated, fracture of the medial aspect of the patella and "bone bruises" of the medial patella and lateral femoral condyle aid in the diagnosis of what occurred.
QUIZ	ED	C33	Fracture of the triquetrum. Bone fragments dorsal to the carpal bones usually come from the triquetrum. Overlying dorsal soft tissue swelling is usually present in acute cases.

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QUIZ	ED	D01	"Picture frame" vertebrae typical of Paget's disease. There is also involvement of the right ilium. Loss of disk height L2-3 compatible with degenerative disc disease. Some loss of height and increased width of L2.
QUIZ	ED	D02	No evidence of pneumoperitoneum, but there is pneumatosis of the colon wall. Intestinal pneumatosis can sometimes be seen with steroid treatment and be a benign condition, but more ominous causes such as bowel ischemia/infarction must be considered.
QUIZ	ED	D03	Fracture through mid portion scaphoid. Note that the fracture may not be seen on all projections. Usually clinically-positive, x-ray negative cases are treated for two weeks, then reexamined. 35% of proximal third fractures get AVN of the proximal fragment.
QUIZ	ED	D04	"Jefferson" fracture of C1. Note the lateral displacement of the right lateral mass of C1 on the AP odontoid view. In a classic fracture both would be displaced. Also note odontoid fracture. Always check the lateral masses of C1 on the odontoid view. Only clue on lateral view may be soft tissue swelling. Axial CT best demonstrates the fracture.
QUIZ	ED	D05	"Smith" type fracture of distal radius and ulna with anterior angulation of the distal portions. In the more common Colles fracture there is dorsal angulation. Also note common anatomic variant: triquetrum-lunate fusion.
QUIZ	ED	D06	Acute epidural hematoma. Note lens shape, mass effect, midline shift, herniation. Bone windows may aid fracture detection. In this 9 month old suspect abuse.

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QUIZ	ED	D07	Chronic subdural hematoma on right side. Note chronic atrophic changes in the brain with enlarged sulci and ventricles. There is some mass effect on the right lateral ventricle.
QUIZ	ED	D08	Galiazzi fracture -dislocation with fracture of the distal radius with overriding and dislocation of distal radioulnar joint. In paired bones always inspect the second bone carefully for injury. What is the analogous fracture-dislocation at the elbow?
QUIZ	ED	D09	Spondylolysis L5 with Grade III spondylolisthesis L5 on S1. Spondylolysis is fairly common in the general population, often without spondylolisthesis. Oblique vies may help confirm the pars defects. Radionuclide bone scan may aid in determining whether or not the spondylolysis is responsible for the patient's symptoms.
QUIZ	ED	D10	Lateral tibial plateau fracture which is difficult to see on these views. Fat-fluid level in suprapatellar bursa on crosstable lateral view indicates a lipohemarthrosis caused by an intraarticular fracture. Oblique views and CT should be obtained as necessary to demonstrate the fracture. Note that there are two fluid-fluid levels in the bursa. The upper one is fat/plasma and the lower one plasma/cellular elements.
QUIZ	ED	D11	Slipped capital femoral epiphysis on the left. This is a Salter I type injury which occurs in overweight, active children about the time of puberty. Note how useful the frogleg lateral view is to see the slip. Most slips have a large posterior component best visualized on the lateral view.

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QUIZ	ED	D12	Compression fracture of one lower thoracic vertebra and fracture of the sternum. Flexion injuries may cause this combination of injuries. Similarly, multiple t-spine fractures due to osteoporosis may be associated with insufficiency fractures of the sternum. You only see the sternal fractures if you look for them. The sternum is the "Orphan bone": nobody cares about it.
QUIZ	ED	D13	Post void film from IVP shows a "filling defect" in the contrast medium in the bladder which is irregular in outline. Appearance is typical of transitional cell cancer of the bladder. Deefinitive diagnosis is by cystoscopy/biopsy. Differential diagnosis for "filling defect" includes blood clot, radiolucent calculus, catheter balloon, etc.
QUIZ	ED	D14	Prolonged, intense nephrogram on the left due to obstruction. Delayed images should be obtained to determine the level of obstruction. Often an obstructing calculus can be seen in retrospect on the scout image when the level of obstruction is known. In less disadvantaged countries you would probably make this diagnosis by non-contrast CT.
QUIZ	ED	D15	Congenital scoliosis. There is a hemivertebra on the left between L3 and L4 leading to a left convex scoliosis. A scoliosis due to congenital vertebral anomaly is called "congenital" scoliosis. In the T-spine an extra rib aids in the identification of the hemivertebra. Most scoliosis is "idiopathic".

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QUIZ	ED	D16	Bilateral filling defects in the contrast medium in the renal collecting systems are due to transitional cell carcinoma. Differential diagnosis of "filling defects" includes lucent calculi, blood clots, tumor, sloughed papilla, fungus ball, air bubbles, etc.
QUIZ	ED	D17	Large filling defect in the bladder is enlarged median lobe of the prostate. The characteristic "fish hook" configuration of the distal ureters is caused by elevation of the base of the bladder and would not be seen with other masses such as bladder cancer.
QUIZ	ED	D19	Anterior dislocation of the lunate bone. "Pie-shaped" lunate on the frontal view is a clue. Lateral view is diagnostic. Normally the axis of the lunate should line up with that of the distal radius and the capitate on the lateral view.
QUIZ	ED	D20	"Flexion tear drop" fracture of C5. Note the retropulsion of the posterior portion of the vertebral body into the spinal canal. This causes the frequent neurologic damage with this fracture. Sagittal component of fracture can be seen on the frontal view. The canal is relatively narrow at this level, adding to the frequency of neurologic injury. Pre-existing degenerative disease also adds to the likelihood of neurologic deficit.
QUIZ	ED	D21	Malrotation with midgut volvulus. Note the spiraling appearance of the duodenum and the beak-like shape of the contrast medium at the first twist.

LAST NAME	FIRST NAME	ACC#	COMMENTS	
QUIZ	ED	D22	Duodenum and stomach are distended with air and there is no distal air ("Double bubble" sign). This is characteristic of duodenal obstruction in the newborn, especially duodenal atresia-the diagnosis in this case. Duodenal atresia is associated with Down's Syndrome. Differential diagnosis of duodenal obstruction includes duodenal stenosis, annular pancreas, mesenteric bands, malrotation, preduodenal portal vein and intraluminal duodenal diaphragm.	
QUIZ	ED	D23	Contrast enema shows mass due to intussusceptum in the region of the hepatic flexure. Nowadays most people use air for attempted reduction. History might be crampy abdominal pain, currant jelly stools and palpable abdominal mass.	
QUIZ	ED	D24	Septic arthritis left SI joint due to staphylococcus. Note widening, irregularity and sclerosis of the left SI joint. This patient was an IV drug user, making infection a likely diagnosis. The right SI joint also looks abnormal, making AS, Reiter's and Psoriatic arthritis diagnostic possibilities. CT is always useful to better visualize SI joint changes. In the past tomography was used.	
QUIZ	ED	D25	Small bowel obstruction due to adhesions from prior surgery. Dilated small bowel (more than 2.5 cm) and air-fluid levels in the small bowel with little or no colon air. Surgical clips and sutures.	
QUIZ	ED	D26	Bladder calculi. Small prostatic calculi. Vascular calcifications. Normal hip and SI joints.	
QUIZ	ED	D27	Blastic metastases to the bones from breast cancer. Note right mastectomy. Right hemidiaphragm elevation. Abdominal surgery.	

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	ED	E01	Chondrocalcinosis TFC(triangular fibrocartilage) and intercarpal and wrist joints. According to Resnick, the most common location is the lunotriquetral ligament. This patient had acute pain =pseudogout. With chondrocalcinosis in someone under 50 years of age, try to exclude hypothyroidism, hyperparathyroidism and hemochromatosis.
QUIZ	ED	E02	Loose femoral component of THR. There should be NO radiolucency at the metal-cement interface and less than 1.5 mm at the cement-bone interface. Cement is methylmethacrylate with barium added to make it radioopaque.
QUIZ	ED	E04	Fracture of right femoral neck. This was not initially detected, and the patient returned with a displaced fracture which has a worse prognosis. On the initial exam the head is impacted in slight valgus. To avoid missing subtle fractures , MRI exam can be obtained immediately after injury. Unlike the radionuclide bone scan, which can take 72 hours to become positive in elderly patients, MRI will show the fracture immediately after the injury.
QUIZ	ED	E05	"Hangman's " fracture of C2. 4 mm anterior displacement of C2 body, odontoid and C1 causing discontinuity in the spinolaminar line. Posterior elements of C2 stayed where they belong. Degenerative disc disease (disc narrowing) C4-5 and C5-6 and degenerative arthritis facet joints at multiple levels.

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QUIZ	ED	E06	Intraperitoneal bladder rupture. This often occurs after blunt trauma to the abdomen with a full bladder or following GU instrumentation of the bladder. Contrast medium from cystogram surrounds the outside of bowel loops. Peritonitis and uremia can result unless bladder is repaired.
QUIZ	ED	E07	Fracture of the radial head. Note displaced anterior and posterior fat pads due to joint effusion. Anterior fat pad can be seen, but posterior fat pad should not be seen on lateral view with this degree of flexion. With positive fat pad sign, treat as fracture until proven otherwise.
QUIZ	ED	E08	Supracondylar fracture of the humerus. Note displaced fat pads indicating joint effusion. There is posterior angulation of the distal humerus. A line along the anterior cortex of the humerus should pass through the middle third of the ossification center for the capitellum.
QUIZ	ED	E09	Left shoulder dislocation of the "Luxatio erecta" type due to very forceful abduction (fell into a manhole, catching arms on the sides) and comminuted fracture of the greater tuberosity.
QUIZ	ED	E10	Multiple fractures: (1) burst fracture L1--note increased interpediculate distance. (2) Fracture right transverse process L1. (3) Fracture left superior and inferior pubic rami. (4) Fracture left side sacrum-note disrupted arcuate lines. Also note right femoral venous catheter and NG tube.
QUIZ	ED	E11	Blount's disease, infantile bilateral form. Varus deformity is mostly in the proximal tibias. Medial proximal tibial epiphysis and metaphysis are deformed. Surgery will be necessary to correct alignment.

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QUIZ	ED	E12	Avulsion fracture of the proximal lateral tibia at the insertion of the capsule (Segond fracture). Frequent association with meniscal and ACL tears.
QUIZ	ED	E13	Multiple hereditary exostoses with large osteochondroma left ilium in addition to many smaller ones and modeling deformities of the proximal femurs. Pain can result from malignant degeneration to chondrosarcoma, bursitis, fracture, pressure on adjacent structures.
QUIZ	ED	E14	Legg-Calve-Perthes disease: idiopathic AVN of the femoral head in childhood. The most common and important AVN in childhood. Note sclerosis and deformity of left femoral head ossification center. Peak age: 5-6 years. M:F, 4:1 Bilateral 10% Ultimate prognosis unfavorably affected by lateral subluxation of the head and "uncovering" of the head by acetabulum.
QUIZ	ED	E15	Bilateral AVN of femoral heads due to sickle cell disease. Disease on left is more advanced with collapse of the articular subchondral bone. The "bone within a bone" appearance in the femurs is a clue to the etiology. Endosteal new bone formation results from infarctions. Other common etiologies of AVN are alcohol abuse and steroid treatment.
QUIZ	ED	E16	Type III odontoid fracture with anterior displacement of the odontoid relative to the body of C2. Note anterior soft tissue swelling and discontinuity of the spinolaminar line. The earrings are a nice touch. Type III fractures heal more readily than Type II's. The odontoid normally lines up fairly well with the posterior surface of the body of C2.

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QUIZ	ED	E17	Bilateral periosteal reaction on tibiae and fibulae due to chronic venous stasis. This is the most common cause of widespread periosteal reaction in the lower extremities. Also consider hypertrophic osteoarthropathy and thyroid acropachy in cases of diffuse periosteal reaction not confined to the lower legs.
QUIZ	ED	E18	Calcaneonavicular coalition: one of the two common tarsal coalitions (talocalcaneal is the other). These may cause rigid flatfoot. Note that the oblique view is necessary to visualize this. "Anteater nose" sign may be present on lateral view. Coalition can be bony or fibrous. The latter looks like a joint.
QUIZ	ED	E19	Club foot deformity (talipes equinovarus). Axes of the talus and calcaneus are abnormally parallel to one another on both frontal and lateral views. Calcaneus is in equinus (angle between axes of tibia and calcaneus is more than 90 degrees). Forefoot is adducted.
QUIZ	ED	E20	Rupture of patellar tendon. Note high position of patella and lack of shadow of patellar tendon in its usual location. Also take the opportunity to identify the plastic patellar component of the prosthesis cemented to the posterior surface of the patella. This can sometimes come loose.
QUIZ	ED	E21	Cemented left total hip prosthesis with loose, rotated acetabular component. Plastic (HDP) of acetabular component is either broken or severely worn.

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QUIZ	ED	E22	Illdefined lytic lesion mid femur. Permeative type bone destruction indicates aggressive process. This is most likely a metastasis from lung cancer. Get a chest image to look for the primary if not known. This lesion is in danger of pathologic fracture and should get prophylactic fixation with IM rod--be certain that this danger is communicated immediately to the referring clinician (phone).
QUIZ	ED	E23	Calcific tendonitis longus coli muscle. Amorphous calcification inferior to the anterior arch of C1 and soft tissue swelling anterior to upper cervical spine. Painful neck motion. Accessory ossicles in this location do not have pain or swelling.
QUIZ	ED	E24	A bit archaic now, but one upon a time a very bad sign. On this 30 minute IVP image there are prolonged nephrograms which indicate hypotension. Prolonged nephrograms can also be seen with ATN and bilateral obstruction.
QUIZ	ED	E25	Cystogram shows contrast medium extravasation around the bladder which is not free in the peritoneal cavity (does not surround bowel). This is extraperitoneal bladder rupture. It is usually associated with pelvic fractures. Note fractures of superior and inferior pubic rami bilaterally and the sacrum on the right side (check the arcuate lines).
QUIZ	ED	E26	Monteggia fracture-dislocation. Fracture proximal ulna. Anterior subluxation of radial head. The axis of the proximal radius should pass through the center of the capitellum on all views.

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QUIZ	ED	E27	Right femur fracture. Healing fracture left posterior 7 th rib. Old, healed fracture right anterior 7 th rib. These multiple fractures are suspicious for abuse. Posterior rib fractures may result from squeezing the thorax.
QUIZ	ED	E28	"Hangman's" fracture of C2. Note fracture line through posterior elements. Not much displacement in this case. Not much anterior soft tissue swelling. Mechanism is usually hyperextension.
QUIZ	ED	E29	Gastric Volvulus: in this case organoaxial--spinning along a line from the EG junction to the pylorus. This type tends to be associated with pre-existing diaphragmatic defects and a high incidence of strangulation. In addition to pain, retching without being able to vomit and inability to pass an NG tube are classic historical features. Later images show pneumoperitoneum.
QUIZ	ED	F01	Gas in soft tissue planes of foot and leg compatible with gas gangrene. Old, ununited calcaneal fracture.
QUIZ	ED	F02	"Chance" fracture of L2 with splitting of the spinous process and pedicles in the axial plane and distraction of the posterior elements of the spine. Note "empty" appearance of L2. The lateral view is most helpful in this injury, often due to flexion over lap seat belt with distraction of the posterior elements.
QUIZ	ED	F03	Left sided rib notching due to Blalock-Taussig shunt procedure to increase pulmonary blood flow. Note increased left pulmonary blood flow compared to right. Left subclavian artery anastomosed to left PA.

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QUIZ	ED	F04	Aortic dissection. Enlarged tortuous aorta on plain image. Intimal flap and displacement of intimal calcification demonstrated on CT.
QUIZ	ED	F05	Pneumoperitoneum developing post colonoscopy. Note "double wall" sign with free air outlining the outside of the colon and also falciform ligament outlined by air. Huge "football" sign with free air lateral to liver.
QUIZ	ED	F06	Burst fracture L4. Plain image signs include increase in interpediculate distance and displacement of posterior vertebral body into spinal canal.
QUIZ	ED	F07	Discitis and osteomyelitis with disc narrowing L4-5 and destruction inferior end plate of L4. MRI showed epidural abscess. Often associated with IVDU.
QUIZ	ED	F08	Gas dissecting along fascial planes posterior to L-spine in case of necrotizing fasciitis. Man was stung by a bee and later became febrile. Infection spreads rapidly and is surgical emergency. CT shows the soft tissue edema. Classically group A streptococcus, but many organisms can be responsible.
QUIZ	ED	F09	Liver laceration with subcapsular hematoma. Pleural effusion. Partial atelectasis right lower lung. Injury resulted from blunt trauma to abdomen.
QUIZ	ED	F10	Occiput-C1 separation. This injury is often fatal so not frequently seen in the ED. Considerable soft tissue swelling anterior to upper C-spine.
QUIZ	ED	F11	Healing stress fracture proximal tibia. History of running daily for several week. History is very helpful in these injuries . Radionuclide bone scan allows earlier detection as does MRI.

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QUIZ	ED	F12	Right AC joint separation. Clavicle elevated relative to acromion--their undersurfaces should align. Coracoclavicular distance increased on right compared to left, indicating this ligament is also torn. Type III injury. If clavicle is elevated more than one shaft width it becomes type VI injury.
QUIZ	ED	F13	Fracture of medial wall of the orbit on the right with orbital emphysema, soft tissue swelling, and opacification of right ethmoid sinus. Orbital emphysema usually indicates involvement of the medial wall.
QUIZ	ED	F14	Fracture of patella best seen on "sunrise" view. Transverse fractures are easily seen on lateral view but vertical fractures are better seen on "sunrise" view. A joint effusion is seen in the suprapatellar bursa on the lateral view.
QUIZ	ED	F15	Heterotopic ossification near right THR. Moderate degenerative arthritis left hip. Heterotopic ossification can result in decreased range of motion when it is extensive. Minor amounts of heterotopic bone are of no consequence.
QUIZ	ED	F16	Comminuted spiral fracture of the tibia at the ankle. The fracture line then traverses the interosseous ligament and exits through the proximal fibula. It is good to be sure the entirety of paired bones is visualized to avoid missing a fracture.
QUIZ	ED	F17	Lis-Franc fracture-dislocation right foot. Note the increased space between the proximal right first and second metatarsals and lateral subluxation of the 2nd-5th metatarsals. The margins of the metatarsal bases and cuneiforms should align in the normal situation.

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QUIZ	ED	F18	Fracture of tibia and bowing deformity of the fibula. Bowing deformities usually occur in paired bones in children when force is insufficient in magnitude or duration to cause a fracture. The bowed fibula may make reduction of the tibia difficult.
QUIZ	ED	F19	Non-union of ulna fracture. Patient had continued pain one year post fracture. Fracture line is still clearly visible and the adjacent bone ends sclerotic.
QUIZ	ED	F20	Normal variant absence of part of the posterior arch of C1. Exam of lower C-spine is incomplete. Additional views or CT required. Air-fluid level in maxillary antrum indicates supine positioning and may signal a facial fracture.
QUIZ	ED	F21	"Limbus vertebra" L4 caused by herniation of disc material between ring apophysis and body during childhood--not to be confused with fracture. Frequently the disc at that level is narrowed due to loss of disc material.
QUIZ	ED	F22	Avascular necrosis of the femoral head with abnormal radiodensity of the infarcted portion of head and collapse of the articular surface. Core procedures do not work after articular surface collapse. Also note old avulsion injury of isclium.
QUIZ	ED	F23	Multiple focal infiltrates, some with cavitation characteristic of septic emboli. Often details and additional disease are better seen on CT. IVDU and endocarditis are frequently associated.
QUIZ	ED	F24	Bilateral pneumothorax. Don't stop looking after you make the first finding.

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QUIZ	ED	F25	Pancoast tumor (apical lung cancer). Patient presented with shoulder pain due to brachial plexus involvement. Check the lung apex on shoulder and C-spine exams to exclude this possible cause of neck or shoulder pain.
QUIZ	ED	F26	Pneumoperitoneum seen on lateral chest but not frontal. Check all available views. In one study pneumoperitoneum was seen on the lateral view in 98% of cases but only 80 % of the time on the frontal view.
QUIZ	ED	F27	Skull fracture seen on c-spine exam. This is not infrequent in children who seem to break their skulls more easily than their c-spines. CT showed epidural hematoma.
QUIZ	ED	F28	Pneumomediastinum. Air dissecting along the soft tissues of the neck frequently results from pneumomediastinum. This finding should prompt acquisition of a chest image to look for pneumomediastinum. Pneumomediastinum may lead to pneumothorax, so follow up images should be checked for this complication.
QUIZ	EL	EL01	Normal elbow.
QUIZ	EL	EL02	Hemophilic arthropathy. 28 year old male with marked cartilage narrowing. Degenerative -type changes. Enlarged radial head. Hyperemia can cause overgrowth in the immature skeleton.

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QUIZ	EL	EL03	Neuropathic arthropathy elbow due to syringomyelia. Bone ends may have an almost surgical-resection appearance. Disorganization. Bone fragments common. Most common etiology in upper extremity is syringomyelia, in the foot, diabetes.
QUIZ	EL	EL04	Osteoarthritis elbow with post-traumatic loose bodies or synovial osteochondromatosis. Patient complained of decreased ROM which may be due to osteophytes or loose bodies obstructing olecranon fossa.
QUIZ	EL	EL05	Rheumatoid arthritis elbow joint. Uniform cartilage narrowing. May see secondary degenerative changes in "burned out" RA.
QUIZ	EL	EL06	Hemophilic arthropathy in 35 year old male. Degenerative arthritis is uncommon in the elbow without old fracture or occupational trauma. Think of other things. Radial head may be enlarged in hemophilic arthropathy due to hyperemia during growth.
QUIZ	EL	EL07	Tuberculosis. Cartilage destruction, bone erosion, osteoporosis, joint effusion. Fluid culture 80%+, synovial biopsy 90%+. If only a single joint is involved infection should be a consideration.
QUIZ	EL	EL08	Hemophilic arthropathy. Relatively young male. Erosions, cartilage narrowing, subluxation. Joint effusion/hyperplastic synovium. Dense synovium due to hemosiderin deposition--big clue to chronic bleeding, could also be seen in PVNS.
QUIZ	EL	EL09	Hemophilic arthropathy. Marked erosive changes. Relatively normal bone density, considering the destruction. Possibly increased radiodensity of synovium. 39 year old male.

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QUIZ	EL	EL10	Osteonecrosis of the capitellum on the right. This can result from a single trauma or multiple repetitive traumas as in pitching a baseball. Osteochondral injuries and osteonecrosis tend to affect convex articular surfaces.
QUIZ	EL	EL11	Pseudogout elbow. Elbow joint effusion. Chondrocalcinosis of elbow and shoulder. Hyaline cartilage affected in this instance.
QUIZ	EL	EL12	Hemophilic arthropathy. Young male. Growth plates may be prematurely fused. Marked cartilage narrowing. Anterior subluxation of radial head. ? Dense synovium.
QUIZ	EL	EL13	Gout. Erosions. Normal bone density. Possibly also olecranon bursitis which is very common in gout.
QUIZ	EL	EL14	Rheumatoid arthritis. Not much in the way of osteophytes considering the degree of cartilage destruction. Fat pads displaced by effusion and/or synovial hyperplasia.
QUIZ	EL	EL15	PVNS=pigmented villonodular synovitis. Marked distention of joint capsule by synovium and fluid. Erosions on both sides of the joint. Relatively little cartilage narrowing in comparison to the erosive changes. PVNS is a one-joint disease in the vast majority of cases.
QUIZ	EL	EL16	Olecranon bursitis in gout. Olecranon bursitis is most commonly post-traumatic. If no history of trauma, think gout. Post trauma hematomas are usually not this large. Normally there is only skin thickness over the olecranon-check yours.

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QUIZ	EL	EL17	Chronic "congenital" posterior dislocation of the radial head. Note how the radial head has not formed properly, because it has not been articulating with the convex capitellum. Radius has grown overly long.
QUIZ	EL	EL18	Loose bodies in elbow joint. Minimal degenerative arthritis. In general, a few different sized loose bodies are post-traumatic whereas synovial osteochondromatosis leads to many similar-sized loose bodies.
QUIZ	EL	EL19	Lytic lesion in capitellum, probably osteochondral fracture. History of trauma. Looks pretty much the same as osteonecrosis. In rare instances lytic lesions which prefer epiphyses/ apophyses could occur here.
QUIZ	EL	EL20	Hemophilic arthropathy. 29 year old male. Nice example of dense synovium resulting from hemosiderin accumulation from repeated hemorrhage.
QUIZ	EL	EL21	Congenital dislocation of radial head. Joint effusion. Note malformed radial head and overly long radius.
QUIZ	EL	EL22	Gout. Erosions left capitellum. Left elbow joint effusion. Soft tissue swelling over olecranon bilaterally compatible with olecranon bursitis. Possible calcifications in tophi near left proximal ulna.
QUIZ	EL	EL23	Hemophilic arthropathy elbow and knee. Severe "degenerative type" arthritis in a middle aged male. Enlarged radial head. Enlarged intercondylar notch. Knee joint effusion.

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QUIZ	FD	FD01	Polyostotic fibrous dysplasia and McCune-Albright syndrome (polyostotic fibrous dysplasia with precocious puberty and café-au-lait spots with jagged margins, usually on one side of the body). Long lesions with thinned cortex, some expansion, sometimes sclerotic margin, "ground glass" density.	
QUIZ	FD	FD02	Fibrous dysplasia involving base of skull, maxilla, paranasal sinuses. In contrast to Pager's disease, fibrous dysplasia more often involves the skull base, occurs in younger people and involves the outer table rather than both tables when it involves the calvarium.	
QUIZ	FD	FD03	Fibrous dysplasia left 12th rib. Expansile sclerotic lesion. Patient was asymptomatic with regard to this. Lesion was resected. Fibrous dysplasia is a common rib lesion.	
QUIZ	FD	FD04	Fibrous dysplasia tibia with pathologic fracture. Pathologic fracture is a common mode of presentation. In the tibia one must include in the differential diagnosis, adamantinoma, osteofibrous dysplasia and Paget's disease.	
QUIZ	FD	FD05	Fibrous dysplasia with McCune-Albright syndrome. Extensive sclerotic skull base involvement. Humerus involvement with long, slightly expansile lesion with "ground glass" matrix, thinned cortex and pathologic fracture. Femur involvement with bowing, "shepherd's crook" appearance of proximal femur. Hands show expanded metacarpals, phalanges with "ground glass" density.	

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QUIZ	FD	FD06	Fibrous dysplasia skull. Extensive involvement of occiput . Note expansion of outer table outward. This contrasts with Paget's which also expands inner table inward. Patient has McCune Albright syndrome.
QUIZ	FD	FD07	Polyostotic fibrous dysplasia. Classic lesions in right forearm with slight expansion, thinning of cortex, "ground glass" density with normal left side for comparison. "Long lesion in a long bone." One side of body predominantly involved (right in this case). Probable healing fracture in right humerus lesion. Metatarsal lesions with appearance similar to lesions in hand. Skull base sclerosis.
QUIZ	FD	FD08	Fibrous dysplasia elbow. "Ground glass" density, expansile lesions with thinned cortex in humerus, radius and ulna. Multiple bone involvement severely limits any differential diagnosis.
QUIZ	FD	FD09	Fibrous dysplasia femur with "shepherd's crook" varus deformity, "ground glass" radiodensity, expansion with thinning of cortex. Long lesion in a long bone. Pelvis also involved. Femur involvement without pelvis not uncommon. Pelvis involvement without femur uncommon.
QUIZ	FD	FD10	Fibrous dysplasia with McCune Albright syndrome, hyperparathyroidism. Marked skull base sclerosis. Bilateral femur involvement with varus deformity right femoral neck increased by healing pathologic fracture.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	FD	FD11	Fibrous Dysplasia with McCune-Albright syndrome. Note predominant involvement of one side of the body (left in this case). Skull base involvement with expansion outward, sclerosis. Long lesions of femur, tibia, fibula, humerus.
QUIZ	FD	FD12	Fibrous dysplasia involving femur and pelvis. Involvement of both bones in a young adults should limit the differential. This is a common combination in fibrous dysplasia. Pelvis alone is uncommon.
QUIZ	FD	FD13	Fibrous dysplasia femur. This thick sclerotic margin is one typical appearance. It could also be seen with intraosseous lipoma. Chronic infection and bone cyst are in the differential diagnosis.
QUIZ	FD	FD14	Fibrous dysplasia femur. Well-defened radiolucent lesion with sclerotic margin and "ground glass" density. Bone cyst in DDX.
QUIZ	FD	FD15	Fibrous dysplasia. Femur and pelvis involvement. "Shepherd's crook" femur. One side of body predominantly involved. Typical long, "ground glass" density lesions with cortical expansion and thinning in left humerus, tibia and fibula.
QUIZ	FD	FD16	Fibrous dysplasia. Multiple radiolucent lesions with sclerotic margins. Left side of body involved. Deformity humerus may reflect healed pathologic fracture.
QUIZ	FD	FD17	Fibrous dysplasia right humerus and radius with long "ground glass" density lesions with cortical thinning. Presentation with pathologic fracture is typical.

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QUIZ	FOOT	F01	Silicon synovitis. There is a silastic joint prosthesis at the first MTP joint to treat "hallux righdus". This is complicated by lytic lesions due to reaction to particles of silastic, similar to "particle disease" around hip prostheses.
QUIZ	FOOT	F02	Reiter's syndrome. Bilateral sacroiliitis. MTP joint narrowing and erosions.
QUIZ	FOOT	F03	Gout. Erosions first metatarsal head. Enlargement of the soft tissue near the right first MTP joint, probably due to tophi.
QUIZ	FOOT	F04	Gout involving hands and feet with large tophi. It takes many years to get changes like these.
QUIZ	FOOT	F05	Club feet: axes of talus and calcaneus are relatively parallel on both frontal and lateral views. Adduction of metatarsals. Calcaneus in equinus.
QUIZ	FOOT	F06	Neuropathic arthropathy in Charcot-Marie-Tooth disease. More commonly, diabetes would be responsible in the feet. In the upper extremity, syringomyelia is often the cause.
QUIZ	FOOT	F07	Accessory ossicle adjacent to the tarsal navicular can become symptomatic with medial foot pain. Symptoms are usually associated with larger accessory ossicles and occur when the cartilage between them and the navicular is fractured by avulsion injury. Tibialis posterior attaches here.
QUIZ	FOOT	F08	Gout. The great toe is a favored location. Lower extremity is affected more than upper due to temperature differences. Lytic lesion in the proximal phalanx and soft tissue mass medial to MTP joint are probably due to tophi.

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QUIZ	FOOT	F09	Talocalcaneal coalition seen on the Harris (axial) view and on CT. Remember that the other common coalition is the calcaneonavicular which is seen on the oblique view.
QUIZ	FOOT	F10	Gout. Large erosions, some with "overhanging margins". Tophi in soft tissues medial to left first MTP joint, lateral to left 5th MTP joint, around the right 2nd MTP joint and medial to right first IP joint.
QUIZ	FOOT	F11	Rheumatoid arthritis. Moderate narrowing of the ankle joint cartilage and probably some superimposed degenerative change. Degenerative arthritis does not frequently affect the ankle joint without prior injury/deformity.
QUIZ	FOOT	F12	Talar beak seen on lateral view may be associated with tarsal coalition. In this case there is a fibrous calcaneonavicular coalition seen on the oblique view. Amputations for unrelated condition.
QUIZ	FOOT	F13	Rheumatoid arthritis with narrowing of almost all the joints of the foot, erosions of MTP joints, osteoporosis. C1-C2 subluxation.
QUIZ	FOOT	F14	Talocalcaneal coalition on the left side. This is one of the two common coalitions in the foot. CT is excellent for demonstration. The Harris view is the conventional view to look for this.
QUIZ	FOOT	F15	Symptomatic accessory ossicle adjacent to navicular (os tibiale externum). Patient with pain on medial side of foot. Rx: first trial of immobilization, then excision.
QUIZ	FOOT	F16	Fibrous dysplasia (polyostotic). Long lesions. Ground glass density. Thin cortex. In this case the patient had precocious puberty (Albright's Syndrome).

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QUIZ	FOOT	F17	Psoriatic arthritis. "Pencil in cup" deformities of interphalangeal joints. Abnormal nails.
QUIZ	FOOT	F18	Pseudohypoparathyroidism. Soft tissue calcification. Short 4th metatarsal. Individuals with pseudo-pseudohypoparathyroidism (apologies to SSS) have the bone changes without the hormone changes--or at least not so marked.
QUIZ	FOOT	F19	Hemophilic arthropathy. Marked cartilage narrowing. Bone sclerosis. Sometimes AVN can occur, most often in the hip. Degenerative arthritis is uncommon in the ankle without a fracture, so you should think of something else.
QUIZ	FOOT	F20	Tarsal coalition: fibrous coalition between calcaneus and navicular. This requires the oblique view for demonstration. It may cause a painful, rigid flat foot.
QUIZ	FOOT	F21	Charcot foot in patient with Syphilis (the real thing). Usually diabetes is responsible for neuropathic arthropathy in the foot.
QUIZ	FOOT	F22	Ankle joint effusion. The best place to look is anterior to the joint on the lateral view where the capsule is distended. Under fluoro you can aim for the anterior ankle joint when tapping an effusion.
QUIZ	FOOT	F23	Ankylosing spondylitis: "fuzzy" calcaneal spur--contrast with the many ordinary spurs which you have seen.
QUIZ	FOOT	F24	Anatomic variant: fusion of talus and navicular.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	FOOT	F25	Reflex sympathetic dystrophy (RSD) left foot which developed after lower extremity trauma. Marked osteoporosis, soft tissue swelling and pain can develop rapidly after trauma more proximal in the extremity.
QUIZ	FOOT	F26	Hallux rigidus; severe osteoarthritis of 1st MTP joint with very large osteophytes which prevent motion. The other case shows treatment with a silastic prosthesis.
QUIZ	FOOT	F27	Psoriatic arthritis. Erosions and cartilage narrowing of several MCP joints and involvement of several IP joints on the left.
QUIZ	H	H01	Normal hands.
QUIZ	H	H02	CPPD arthropathy. Chondrocalcinosis in TFC, lunotriquetral ligament and joint capsules. Third MCP narrowed. DDX for chondrocalcinosis: CPPD, hyperparathyroidism, hypothyroidism, hemochromatosis.
QUIZ	H	H03	Septic joints in IVDU. Cartilage narrowing in all the intercarpal joints, wrist joint and ill-defined margins of the carpal bones. Soft tissue swelling. This pattern of carpal involvement (less the ill-defined margins) could be seen with RA and gout.
QUIZ	H	H04	Hyperparathyroidism with subperiosteal bone resorption, especially on radial aspects of the phalanges, resorption of tufts (acroosteolysis) and tunneling of the cortex. This was secondary to medullary cystic disease of kidneys.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	H	H05	Jaccoud,s arthropathy. Deforming arthritis with alignment abnormalities more prominent than erosions, associated with rheumatic fever. Deformities can often be reduced by radiologic technologist to normal appearance. In this case there is rheumatic heart disease with left atrial enlargement. DDX: SLE.
QUIZ	H	H06	End stage renal disease with soft tissue calcification (metastatic calcification) and changes of hyperparathyroidism: subperiosteal bone resorption and tunneling of the cortex.
QUIZ	H	H07	Gout involving PIP index finger and DIP little finger. Diagnosis obtained by aspiration of index finger PIP joint. Old fracture 5th metacarpal.
QUIZ	H	H08	Acromegaly. Large hands with prominent tufts, enlarged sesamoids, thicker than normal cartilage.
QUIZ	H	H09	Macrodystrophia lipomatosa. Enlargement of index and middle fingers, more distally than proximally. There is overgrowth of fibrofatty tissue. Distribution is sclerotomal, like melorheostosis. DDX: neurofibromatosis, Klippel-Trenaunay-Weber syndrome.
QUIZ	H	H10	Sarcoid. 5% have bone lesions. The "lace-work", reticulated, destructive pattern is typical (most striking here in the little finger).
QUIZ	H	H11	Gout. Multiple well-defined erosions. Changes in the carpal bones are reminiscent of RA. Little finger MCP joint shows typical gout changes with relatively normal cartilage thickness and crisp marginal erosions.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	H	H12	Gout. Marked destructive changes due to tophi. Note that some joints have normal cartilage thickness despite marginal erosions (unlike RA). There are several good examples of "overhanging margins"
QUIZ	H	H13	Severe rheumatoid arthritis. Typical distribution of involvement: wrist, intercarpal, distal radioulnar, and MCP joints. Osteoporosis. Marked uniform cartilage narrowing, symmetry.
QUIZ	H	H14	Degenerative arthritis. Nice "seagulls"= appearance of DIP joints. Severe 1st CMC changes. Hyperextension of 1st MCP joint not typical.
QUIZ	H	H15	Rheumatoid arthritis. Periarticular osteoporosis, erosions of radius, ulna, carpal bones, metacarpals. Narrowing of cartilage in intercarpal and MCP joints. In the foot, MTP joints are frequently targeted (like MCP's)
QUIZ	H	H16	Degenerative arthritis. Narrowing of DIP and PIP joints with osteophytes and "seagull" appearance in DIP's. Multangular-scapoid joint narrowed--rather common in degenerative arthritis.
QUIZ	H	H17	Rheumatoid arthritis. Periarticular osteoporosis. Cartilage narrowing in wrist, MCP and intercarpal joints. Not really any significant reactive bone formation or osteophytes.
QUIZ	H	H18	Scleroderma. Acroosteolysis. Soft tissue calcification near thumb MCP joint.
QUIZ	H	H19	Psoriatic arthritis. Involvement in a ray distribution. Left index finger PIP and DIP and middle finger DIP joints fused. Fusion is not uncommon in psoriatic arthritis, in contrast to DJD and RA.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	H	H20	Reflex Sympathetic Dystrophy. (Sudek's atrophy) Marked osteoporosis of right hand secondary to lung cancer.
QUIZ	H	H21	Degenerative arthritis. Typical involvement of DIP joints ("seagulls"), PIP joints and 1st CMC joint. Osteophytes, irregular joint space narrowing.
QUIZ	H	H22	Erhlers-Danlos syndrome. Subluxation of CMC joints of the thumbs.
QUIZ	H	H23	Thyroid acropachy. Periosteal reaction can occur in patients previously hyperthyroid who are treated and become hypothyroid. Metacarpals, metatarsals and phalanges are favored locations. Less commonly other tubular bones are involved. DDX includes hypertrophic pulmonary osteoarthropathy (HPO) and pachydermoperiostosis.
QUIZ	H	H24	AVN of 3rd and 4th metacarpal heads and probably in the proximal portion of the scaphoid in a patient with SLE on steroid therapy. AVN was present in many other locations in this individual.
QUIZ	H	H25	Metastatic soft tissue calcification in patient with chronic renal failure.
QUIZ	H	H26	Gout. Multiple relatively well-defined erosions involving CMC joints, wrist, intercarpal joints. Pattern similar to some cases of RA. Also DJD in the DIP joints.
QUIZ	H	H27	Primary hyperparathyroidism. Subperiosteal bone resorption is pathognomonic for hyperparathyroidism. The radial aspect of the middle phalanges is a favored location.
QUIZ	H	H28	Probable fibrous dysplasia. Note expansion, thin cortex and "ground glass" density of several left metacarpals and phalanges.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	H	H29	Soft tissue calcification in patient with CREST syndrome. Probable DJD of 1st CMC joint and multangular-scaphoid joint, both common DJD locations.
QUIZ	H	H30	Rheumatoid arthritis. Severe cartilage narrowing and erosions wrist , intercarpal and distal radioulnar joints. Lesser changes in left 1st and 3rd MCP joints and right 5th PIP joint.
QUIZ	H	H31	Tuberculosis wrist and intercarpal joints. Patient also had pulmonary involvement. Soft tissue swelling, osteoporosis and loss of crisp cortical margins of the carpal bones. Other infections could look this way also.
QUIZ	H	H32	Basal cell nevus syndrome (Gorlin syndrome). Flame-shaped radiolucencies with sclerotic borders in phalanges. Mandibular keratocysts. Falx and tentorial calcification. Rib and spine anomalies.
QUIZ	H	H33	Osteonecrosis of lunate. Kienbock's disease. Empirical association with ulna minus (not present in this case). Sclerotic, shrunken lunate with fragmentation best seen on lateral view.
QUIZ	H	H34	Gout and osteoarthritis (DJD). Gout not infrequently destroys the carpus in a pattern reminiscent of RA.
QUIZ	H	H35	Rheumatoid arthritis (RA). Marked cartilage narrowing, lack of osteophytes, subluxation, osteoporosis. Typical joints affected.
QUIZ	H	H36	Hypertrophic pulmonary osteoarthropathy (HPO) in a young man with Hodgkins disease. You can also have HO with non-pulmonary causes such as inflammatory bowel disease, chronic liver disease and cyanotic congenital heart disease.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	H	H37	Gout. Relative preservation of joint cartilage despite impressive erosions.
QUIZ	H	H38	Ollier's Disease= enchondromatosis. Multiple enchondromas, often expansile, lobulated, may or may not have calcification. Cartilage rests in metaphyses enlarge during adolescence. There is a large chance for malignant degeneration (5-25%) in more central lesions but generally not in the hand. Asymmetric limb shortening. Not hereditary, unlike multiple hereditary exostoses.
QUIZ	H	H39	Kienbock's disease= AVN of lunate with sclerosis and deformity of the lunate. Note ulna minus, present in up to 75% of cases.
QUIZ	H	H40	Metastases to hand from lung cancer. Peripheral metastases are uncommon. Think of lung and kidney primaries. Multiple lytic lesions in the hands are more common in myeloma than with metastases.
QUIZ	H	H41	Multicentric reticulohistiocytosis. Symmetric erosive changes in DIP and PIP joints of hands and feet. Skin lesions are diagnostic.
QUIZ	H	H42	Psoriatic arthritis. Enthesopathic changes in pelvis. Both SI joints abnormal. Hard to differentiate spine changes from AS. Facet joints spared in C-spine. "Fuzzy" heel spurs. Index finger PIP swollen. 3rd MCP narrowed.
QUIZ	H	H43	Degenerative arthritis. Osteophytes and cartilage narrowing DIP and PIP joints. Minimal changes index and middle finger MCP's. Note how protruding osteophytes cause Heberden's and Bouchard's nodes.
QUIZ	H	H44	Hemophilic pseudotumor of the thumb.
QUIZ	H	H45	Acroosteolysis of Hadju and Cheney.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	H	H46	Pseudohypoparathyroidism. Short 4th and 5th metacarpals and short distal phalanx of thumb. Failure of end organ response to parathyroid hormone. Excessive PTH, often hyperplastic parathyroid glands. Calcification and ossification in soft tissues may occur and in the basal ganglia and dentate nuclei. Cataracts in 1/3 of cases. Abnormal dentition in 1/2.
QUIZ	H	H47	Enchondromatosis (Ollier's disease). Hand lesions may result in pathologic fractures. Lobulated contour of lesions reflects cartilage growth pattern. Lesions tend to predominate on one side of the body leading to asymmetric limb shortening.
QUIZ	H	H48	Gout. Marked involvement of intercarpal joints. Multiple well-defined erosions and sparing of MCP's may help differentiate from RA. Note osteoarthritic changes in DIP joints.
QUIZ	H	H49	Wrist arthrogram. Injection of wrist joint also fills distal radioulnar joint and midcarpal compartments. On fluoro contrast was seen to pass between lunate and triquetrum. Tears of TFC and lunotriquetral ligaments.
QUIZ	H	H50	Normal except for short fourth metacarpal
QUIZ	H	H51	Advanced rheumatoid arthritis. Intercarpal, MCP, PIP joints destroyed. Alignment abnormalities. Osteoporosis.
QUIZ	H	H52	SLE (Systemic Lupus Erythematosus). Alignment abnormalities without erosions. Periarticular osteoporosis.
QUIZ	H	H53	CPPD arthropathy. Degenerative type changes in MCP joints. Chondrocalcinosis TFC and lunotriquetral ligament. DJD 1st CMC joints.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	H	H54	Acroosteolysis in scleroderma. Decrease in soft tissue over distal phalanges. Soft tissue calcifications.
QUIZ	H	H55	Psoriatic arthritis. Erosions distal radioulnar joints, 1st CMC joints, left PIP joints, right index and middle finger DIP joints. Possible fusion left index finger PIP joint..
QUIZ	H	H56	Psoriatic arthritis. Left ring finger DIP joint shows classic "pencil in cup" deformity.
QUIZ	H	H57	Erosive osteoarthritis Severe degenerative-type changes in DIP's and PIP's with some quite "erosive" changes (ex. left ring finger PIP)
QUIZ	H	H58	CPPD arthropathy as well as more standard osteoarthritis. Note elbow and MCP joint involvement and chondrocalcinosis in triangular fibrocartilage.
QUIZ	H	H59	Fusion of triquetrum and lunate. Anatomic variant present in 0.1-1.6% of population, more common in blacks and more common in males. Isolated fusions tend to involve the same carpal row.
QUIZ	H	H60	Chondrocalcinosis: TFC, lunotriquetral ligament, menisci of knees.
QUIZ	H	H61	Secondary hyperparathyroidism -- secondary to medullary cystic disease of kidneys. "band-like" form of acroosteolysis. Subperiosteal bone resorption radial aspect phalanges and medial aspect proximal humerus. "Salt and pepper" skull. Loss of lamina dura around teeth.
QUIZ	H	H62	Gout. Erosions carpal bones and distal ulna and radius on the left and ulnar styloid on right.

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QUIZ	H	H63	Reflex sympathetic dystrophy right hand with osteoporosis and soft tissue swelling. Note how spotty osteoporosis can be. RSD can follow an injury to a more proximal portion of the limb.
QUIZ	H	H64	Pseudogout. Swollen painful wrist. Chondrocalcinosis in triangular fibrocartilage.
QUIZ	H	H65	Sarcoid. Multiple lytic bone lesions. Skin lesions are usually present. Note pathologic fracture right scaphoid through lytic lesion. Skeleton is involved in 5-10% of cases of sarcoidosis.
QUIZ	H	H66	Terminal phalangeal sclerosis. This finding has a weak association with connective tissue disease.
QUIZ	H	H67	Gout. Soft tissue masses are tophi which may have some calcifications within them as in this case. Middle phalanx of ring finger near PIP joint has typical gouty erosion.
QUIZ	H	H68	Polyostotic fibrous dysplasia. Expansion of many bones with loss of cortical-medullary differentiation. "Ground glass" density. Radiolucent areas may represent fat.
QUIZ	H	H69	Secondary hyperparathyroidism with subperiosteal bone resorption, acroosteolysis, and vascular calcifications. Vascular calcifications help differentiate from primary hyperparathyroidism.
QUIZ	H	H70	Gout. Olecranon bursitis without a history of trauma should suggest gout. Note erosions of ulnar styloids and right third proximal phalanx.
QUIZ	H	H71	Scleroderma-like features in a patient with SLE. Soft tissue calcifications. Decreased soft tissue over distal phalanges.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	H	H72	Scleroderma and chronic renal failure. Acroosteolysis, osteopenia, vascular and soft tissue calcification. Both scleroderma and chronic renal failure can cause soft tissue calcifications and acroosteolysis.
QUIZ	H	H73	Juvenile rheumatoid arthritis. Periarticular osteoporosis. Soft tissue swelling around many joints.
QUIZ	H	H74	Gout superimposed on erosive osteoarthritis. Typical DIP and PIP and 1st CMC joint cartilage narrowing and osteophytes of degenerative arthritis. "Seagull" appearance of many DIP's. Also note soft tissue swelling with calcification near right 3rd DIP due to tophus.
QUIZ	H	H75	Erosive osteoarthritis. DIP's, PIP's and 1st CMC joints involved which is typical osteoarthritis distribution. Psoriatic arthritis might also be considered for PIP's and DIP's
QUIZ	H	H76	Psoriatic arthritis. Alignment abnormalities indicate inflammatory arthritis. Fusions are suggestive of psoriatic arthritis. Involvement of all joints in a ray is also suggestive of psoriatic arthritis. Bone island distal left radius.
QUIZ	HP	HP01	Heterotopic bone formation in gluteus muscle. History of fall from step ladder in the past.
QUIZ	HP	HP02	"Thigh splints" avulsion injury of insertion of adductor (brevis in this case). This shows increased radionuclide uptake on bone scan. The injury was first described in female army recruits after marching (standard stride was long for them). This patient played soccer.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	HP	HP03	Stress fractures of sacrum paralleling SI joints. History of prostate cancer with lymph node metastases. Estrogen therapy and radiation to the pelvis. Low signal along the fracture lines on T1 images.
QUIZ	HP	HP04	Charcot hips in syphilis. Very severe degenerative-type changes. Disorganization. Metallic densities in buttocks from treatment with ? Neoursphenamine.
QUIZ	HP	HP05	Septic SI joint with associated osteomyelitis. The erosive changes are much better seen on CT.
QUIZ	HP	HP06	"Cystic" rheumatoid arthritis. Some individuals with RA get very prominent cystic lesions. This lady had typical changes of RA in the hands. Learn a differential diagnosis for the "scaloped" femoral neck--processes which cause synovial proliferation.
QUIZ	HP	HP07	Necrotizing fasciitis. Note the extensive gas along the fascial planes. There may also be some muscle involvement. Either way this is a surgical emergency.
QUIZ	HP	HP08	Septic left hip joint. Note the indistinct acetabular and femoral head cortex as well as the radiolucency in the upper portion of the left femoral head. Joint cartilage is gone. One would like to diagnose infections by aspiration before there is any radiographic abnormality.
QUIZ	HP	HP09	Ossification in gluteus muscles bilaterally. Calcification in pancreas from chronic pancreatitis.(NOT ILIAC HORNS).
QUIZ	HP	HP10	"Iliac horns" in nail-patella or Fong's syndrome. Hypoplastic or absent patellas. Nasty nails. 50% have significant renal disease.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	HP	HP11	Sacral agenesis. Association with genitourinary abnormalities. 20 % have diabetic mother. Calcaneovalgus feet.
QUIZ	HP	HP12	Sacral and pubic ramus insufficiency fractures. Patient had breast cancer and primary biliary cirrhosis. Pelvic lesions could have been mistaken for metastases. The CT appearance in the sacrum is typical for fracture.
QUIZ	HP	HP13	Marfan syndrome with acetabular protrusion (present in about 50%) Mild secondary arthritic changes. DDX for acetabular protrusion would include inflammatory arthritis like RA , Pagets disease, osteomalacia, osteogenesis imperfecta.
QUIZ	HP	HP14	Broken HDPE insert for acetabular component of THR. Femoral head not symmetric within acetabulum--never normal. Severe wear could also look this way.
QUIZ	HP	HP15	Ankylosing spondylitis. Bilateral SI joint sclerosis and probable fusion. Syndesmophytes thoracolumbar spine.
QUIZ	HP	HP16	Pigmented villonodular synovitis (PVNS) of the right hip joint. DDX is that for the "scalloped femoral neck", synovial proliferative processes. PVNS is a single joint disorder. "Tight" joints are more likely to have erosions.
QUIZ	HP	HP17	Wear of the HDPE liner of the acetabular component of the hip prosthesis causes asymmetry of femoral head and acetabulum. Broken wire sutures used to reattach the greater trochanter are usually not important unless fragment of trochanter is significantly displaced (2cm).

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QUIZ	HP	HP18	Bilateral insufficiency fractures of the femoral necks. Note the linear sclerosis and discontinuity of the inferior aspects of the femoral necks. Bone graft donor site in iliac wings near SI joints. Spine surgery with instrumentation.
QUIZ	HP	HP19	Avulsion of sartorius insertion at anterior superior iliac spine on right.
QUIZ	HP	HP20	Synovial osteochondromatosis(chondromatosis if not calcified/ossified). Scalloped femoral neck and calcific densities in the hip joint suggest the diagnosis. Metaplasia of synovium to cartilage forming cells. Cartilage can then calcify/ossify.
QUIZ	HP	HP21	Ankylosing spondylitis with solid fusion of many joints.
QUIZ	HP	HP22	Fractures of left pubic rami and left side of the sacrum. Note how disruption of the sacral arcuate lines on the left aids in fracture detection. Sacral fractures are very easily missed on plain images. If suspected, you should get CT.
QUIZ	HP	HP23	Large lytic lesion around hip prosthesis femoral component due to "particle disease". Lytic lesions like this are the reason for obtaining routine images of the prosthesis every 2 years even if asymptomatic. Obvious pathologic fracture risk.
QUIZ	HP	HP24	Transient osteoporosis of the hip (right). RSD-like syndrome first described in females in the third trimester of pregnancy but more common in middle-aged males. Spontaneous recovery expected. Fracture may occur.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	HP	HP25	Fibrodysplasia ossificans progressiva. Extensive heterotopic bone formation leads to early demise from difficulty swallowing and pneumonia because of rib cage dysfunction. Key radiographic finding: 100% short great toe, 50% short thumb.
QUIZ	HP	HP26	Osteoid osteoma femur. Must remove radiolucent "nidus" for treatment to be curative.
QUIZ	HP	HP27	Multiple hereditary exostoses. Multiple osteochondromas. Modeling abnormalities of proximal femurs. Autosomal dominant inheritance. Complications: pressure on adjacent structures, bursitis, fracture, malignant degeneration.
QUIZ	HP	HP28	Osteogenic sarcoma occurring in Paget's disease. Paget's disease and prior radiation are the major predisposing conditions for osteosarcoma in older persons. Lesions are usually lytic and have a terrible prognosis.
QUIZ	HP	HP29	Heterotopic bone formation around prosthetic hip, if very marked, can limit motion. Radiation therapy immediately after surgery or NSAIDS treatment can block the transformation of precursor cells in soft tissues to osteoblasts, limiting this process. (Is that a piece of drill bit?)
QUIZ	HP	HP30	AVN right femoral head with slight deformity (Stage 3). Old avulsion injury right ischium.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	HP	HP31	Femoral neck fractures occurring during seizures due to muscle contraction. Both bad bones and seizures are necessary for this to occur. In these cases alcohol was responsible for both osteoporosis and seizures. Dilantin, used for treatment of seizures can lead to bad bones due to interference with vitamin D metabolism in the liver.
QUIZ	HP	HP32	Radiation protection gone wrong. Notice in the patient with the female-shaped pelvis that the gonad shield has slipped down and does not cover the region of the ovaries. In the male there are testicular prostheses.
QUIZ	HP	HP33	Ankylosing spondylitis. Fused SI joints. Syndesmophytes. Severe hip arthritis with symmetrical cartilage narrowing and osteophytes.
QUIZ	HP	HP34	AVN hips with a core procedure and bone grafting on the right. Articular surface has collapsed on the left-prosthesis will be the only option when the time comes. Core procedure must be done before articular collapse to have chance for success.
QUIZ	HP	HP35	Chondrocalcinosis in hip joints and wrist (TFC)
QUIZ	HP	HP36	D.I.S.H. pelvis with enthesophytes, mild hip degenerative changes and unaffected SI joints.
QUIZ	HP	HP37	Hemophilic arthropathy. Severe degenerative type changes in 28 year old male. Shoulder and ankle are not common locations for degenerative arthritis without predisposing condition. Knee, ankle and elbow are the most common sites for hemophilic arthropathy.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	HP	HP38	Transient osteoporosis of the hip on the right. 37 year old male= typical victim. MRI shows bone marrow edema. Important differential diagnostic possibility to eliminate is septic hip.
QUIZ	HP	HP39	Avulsion of anterior inferior iliac spine, the site of origin of straight head of rectus femoris muscle. Do not confuse healing injuries of this type with neoplasm.
QUIZ	HP	HP41	Slipped capital femoral epiphysis of left hip. Note improved visualization on lateral view of femur as slip is often largely posterior. May present as knee pain. If the other side slips it is usually within 18 months. Overweight, active patient at time of pubertal growth spurt is typical setting.
QUIZ	HP	HP42	Secondary hyperparathyroidism in chronic renal failure. Brown tumor right superior pubic ramus, misshapen pelvis due to osteomalacia, widened SI joints due to subchondral bone resorption.
QUIZ	HP	HP40	Subtrochanteric fracture of right femur involved by Paget's disease. Subtrochanteric fractures are unusual in adult. Pagets and osteomalacia predispose. Paget's subject to transverse, "broken banana" fractures.
QUIZ	HP	HP43	Intertrochanteric fracture of right femur which was occult on plain roentgenographic exam. MRI is able to demonstrate fractures immediately after they occur, making it possible to "rule out" a fracture, or rule it in.
QUIZ	HP	HP44	Immunoblastic lymphoma of right side of sacrum not really visible on plain roentgenogram, easy on CT, easier on MRI. CT was useful for biopsy.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	HP	HP45	Ankylosing spondylitis. Prominent enthesopathic changes in pelvis, glenoid as well as spine and SI joint changes. Enthesopathy seen with AS, Reiter's, Psoriatic arthritis, D.I.S.H..
QUIZ	HP	HP46	Spinal dysraphism with associated neurogenic bladder and hip deformities.
QUIZ	HP	HP47	Bilateral Perthes disease (Idiopathic AVN of the hips). Usually this is not bilateral so one should also think of multiple epiphyseal dysplasia, hypothyroidism, sickle cell disease, Gaucher's disease and steroid therapy.
QUIZ	HP	HP48	Pelvic changes associated with extrophy of the urinary bladder. Striking widening of the symphysis pubis.
QUIZ	HP	HP49	Paget's disease with sclerosis, coarse trabeculation and widening of the bones. Secondary arthritis of the hips and acetabular protrusion.
QUIZ	HP	HP50	Ankylosing spondylitis. Bilateral SI joint fusion. Facet joint arthropathy. Cartilage narrowing right hip joint. Enthesopathy ishium bilaterally.
QUIZ	HP	HP51	Avulsion right lesser trochanter apophysis by iliopsoas. Note how SI joints appear wide in young people. Also positive Throckmorton sign.
QUIZ	HP	HP52	44 year old with history of JRA. Erosions humeral heads. Marked erosion DRUJ, wrist, intercarpal joints. Symmetrical cartilage narrowing hip joints. Left SI joint sclerosis, narrowing.
QUIZ	HP	HP53	Lytic metastasis to intertrochanteric right femur. Pathologic fracture the next day. If you think a lesion might fracture, call the referring physician so prophylactic fixation can be undertaken if deemed necessary.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	HP	HP54	Angioleiomyoma of sciatic nerve. Common lower extremity subcutaneous tumor. Painful. Note muscle atrophy in this patient incapacitated for some time.
QUIZ	HP	HP55	Loose acetabular component of THR changed position and shed porous coat material into enlarged joint capsule. Note wear of acetabular liner--head not concentric with acetabulum.
QUIZ	HP	HP56	Pelvic deformity due to osteomalacia in renal osteodystrophy.
QUIZ	HP	HP57	Osteitis condensans ilium. Sclerosis on iliac side of SI joint in multiparous female.
QUIZ	HP	HP58	Chondrocalcinosis symphysis. ? CPPD arthropathy hips.
QUIZ	HP	HP59	Transient osteoporosis of the hip. 4-15-98 right hip and 6-14-2000 left hip.
QUIZ	HP	HP60	Ankylosing spondylitis. SI joint and spine fusion, enthesopathy, and hip arthritis.
QUIZ	HP	HP61	Chordoma, sacrum. Sacrum and clivus are favored locations. There is also metastasis to L-spine. May contain calcification in tumor due to calcification of the tumor or residual bone fragments.
QUIZ	HP	HP62	Bilateral AVN in renal transplantation patient. This was much more common when steroids were the major immunosuppressant.
QUIZ	HP	HP63	Ankylosing spondylitis. Extensive fusions. Inconvenient position.
QUIZ	HP	HP64	Ankylosing spondylitis. SI joint and spinal fusion. Cuff of osteophytes around left femoral head.
QUIZ	HP	HP65	Ununited insufficiency fracture with associated organizing hematoma.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	HP	HP66	Septic left SI joint and osteomyelitis (E coli) in diabetic with "hip" pain. Note far better visualization with CT.
QUIZ	HP	HP67	
QUIZ	HP	HP68	Chondrosarcoma right inferior pubic ramus. Note typical cartilagenous matrix calcifications.
QUIZ	HP	HP69	Osteoid osteoma. Nidus in distal femoral neck. Cortical thickening proximal femur. In this location the thickening may be somewhat removed from the nidus rather than centered on it as in many locations. Joint effusion may be present. Typical history; "pain worse at night, relieved by aspirin".
QUIZ	HP	HP70	Sacral and pubic ramus insufficiency fractures secondary to radiation therapy for endometrial cancer. Radiation therapy to the pelvis is one typical history.
QUIZ	HP	HP71	Metastatic calcification (secondary tumoral calcinosis) in a patient with end stage renal disease. AVN. Vascular calcification in media.
QUIZ	HP	HP72	Marfan syndrome. Scoliosis and large spinal canal due to "dural ectasia" DDX of dural ectasia is Marfans, Ehlers -Danlos, Neurofibromatosis.
QUIZ	HP	HP73	Erosions around hips and shoulders due to amyloid deposition. Amyloid formed from beta microglobulin in chronic dialysis patients. Note clips for parathyroidectomy.
QUIZ	HP	HP74	Ankylosing spondylitis. Fused SI joints, spine , symphysis. Severe hip arthritis with symmetrical cartilage narrowing.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	HP	HP75	Wear of HDPE insert of acetabular component of THR (generating wear particles in joint fluid). Multiple areas of bone resorption due to "particle disease". Progression over 7 years.
QUIZ	HP	HP76	Reiter's syndrome. Right SI joint inflammatory disease. Erosion calcaneus near retrocalcaneal bursa.
QUIZ	HP	HP77	Heterotopic bone formation in paraplegic resulting in extraarticular fusion of hip joint.
QUIZ	HP	HP78	Tuberculosis of hip and lung. Loss of the cortical line of the femoral head suggests infection. There is also considerable osteoporosis around the hip, which reflects the chronicity of the process.
QUIZ	HP	HP79	Avascular necrosis femoral heads. Negative plain roentgenogram. MRI positive. History of steroid treatment, hip pain.
QUIZ	INFECT	INFECT01	Osteomyelitis tibia. Eccentric lytic lesion in anterior cortex of the tibia. Organism: Salmonella.
QUIZ	INFECT	INFECT02	Gas gangrene foot/and or necrotizing fasciitis. Gas in the soft tissues of diabetic with foot ulcer near 2nd MTP joint. Soft tissue swelling. Surgical emergency.
QUIZ	INFECT	INFECT03	Staph aureus osteomyelitis phalanges of thumb after trauma to nail bed. Images from 1935. Destroyed bone is very specific for osteomyelitis even though plain images are not very sensitive.
QUIZ	INFECT	INFECT04	Osteomyelitis metacarpals. Organism Actinomyces. Small metallic sutures in soft tissues.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	INFECT	INFECT05	Chronic recurrent multifocal osteomyelitis (CRMO). Bilateral involvement of radius, femurs and tibias with lytic lesions and some reactive bone formation. Typically shows inflammatory response on biopsy, acute or chronic, depending on duration and no organisms. Unresponsive to antibiotic therapy. Course benign and self -limited over many years.
QUIZ	INFECT	INFECT06	Osteomyelitis radius with sequestrum and involucrum. Organism: Staph. aureus.
QUIZ	INFECT	INFECT07	Chronic osteomyelitis of fibula following insect bite and soft tissue abscess formation. Sclerosis with consolidated periosteal reaction. Serpiginous tracks in medullary canal with some cortical defects.
QUIZ	INFECT	INFECT08	Tuberculosis shoulder. Erosions of humeral head and probably a focus of osteonecrosis. Note also pneumothorax and ? Tuberculosis in the lung.
QUIZ	INFECT	INFECT09	Salmonella osteomyelitis in humerus of patient with sickle cell hemoglobin A disease. Positive blood cultures. (Staphylococcus is still the most common cause of osteomyelitis even in patients with sickle cell disease)
QUIZ	INFECT	INFECT10	Tuberculosis spine. Lytic lesion in superior portion L3 body and narrowing of L2-3 disc. Infection often starts in the body adjacent to the disc.
QUIZ	INFECT	INFECT11	Osteomyelitis distal phalanx index finger. Note bone destruction and soft tissue swelling. Unrelated amputation middle finger.
QUIZ	INFECT	INFECT12	Atypical mycobacterial infection right wrist joint and intercarpal joints. Osteoporosis and marked cartilage narrowing.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	INFECT	INFECT13	Lytic lesion 3rd metacarpal and soft tissue swelling due to tuberculosis. Healing pathologic fracture through the lesion. Vascular calcification.
QUIZ	INFECT	INFECT14	Infectious discitis and osteomyelitis. Narrow disc, sclerotic adjacent vertebrae with irregular endplates.
QUIZ	INFECT	INFECT15	Chronic osteomyelitis (Brodie's abscess) proximal tibia. Radiolucency with surrounding sclerosis in proximal tibial metaphysis. Linear and serpiginous radiolucencies (as opposed to round), also known as "tunneling" are suggestive of infection. Sclerosis reflects chronicity.
QUIZ	INFECT	INFECT16	Hydatid disease tibia, cervical spine and pelvis of different patients. 75% of larvae trapped in lung, 15% in the liver, and some of the remaining 10% may land in the skeleton. Daughter cysts in the medullary canal cause pressure erosion. The entire length of a bone often becomes involved.
QUIZ	INFECT	INFECT17	Osteomyelitis of several toes. Make the diagnosis when there is definite bone destruction like this and you will be specific although not sensitive.
QUIZ	INFECT	INFECT18	Infantile cortical hyperostosis left scapula and clavicle. Unfortunately an amputation was performed. This disease seems to have largely disappeared.
QUIZ	INFECT	INFECT19	Discitis and osteomyelitis spine. All masses behind the heart are not hiatus hernias. Kyphosis on lateral view chest should be a clue to look carefully. MRI shows details and effects on neighboring structures.
QUIZ	INFECT	INFECT20	Histologic osteomyelitis 4th metatarsal, although no organisms cultured.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	INFECT	INFECT21	Tuberculosis shoulder with extraarticular fusion. Osteoporosis, erosions humeral head, glenoid.
QUIZ	INFECT	INFECT22	IVDA with skin ulcers and periostitis. Common in "skin poppers."
QUIZ	INFECT	INFECT23	Staph. aureus osteomyelitis proximal tibia extending from metaphysis into epiphysis and joint. (1936 images for you history buffs)
QUIZ	INFECT	INFECT24	Yaws (Treponema pertenuae) of tibia with development of secondary squamous carcinoma.
QUIZ	INFECT	INFECT25	Chronic osteomyelitis following open fracture of tibia.
QUIZ	INFECT	INFECT26	Osteomyelitis left ischium. Culture negative for tuberculosis. (1936 image) FYI tuberculosis of ischium referred to as "weaver's bottom"
QUIZ	INFECT	INFECT27	Tuberculosis of the knee. Marginal erosions, cartilage narrowing and "kissing sequestra". Some features resemble neuropathic joint.
QUIZ	INFECT	INFECT28	Chronic osteomyelitis patella. Old fracture. Sclerosis and enlargement of patella.
QUIZ	INFECT	INFECT29	Skin ulcerations and periostitis tibias and fibulas in "skin popper". Also IVDA, HIV+.
QUIZ	INFECT	INFECT30	Skin and soft tissue ulcerations and periostitis tibia and fibula in "skin popper".
QUIZ	INFECT	INFECT31	Skin and soft tissue ulcerations and periostitis radius and ulna in "skin popper".
QUIZ	INFECT	INFECT32	Coccidiomycosis patella. DDX for patellar lytic lesion includes chondroblastoma, ABC, Langerhans Cell Histiocytosis, chronic osteomyelitis, dorsal defect of patella, degenerative cyst.
QUIZ	INFECT	INFECT33	Proteus infection in foot and leg of diabetic with soft tissue gas formation. Gas gangrene is an emergency with a 25% mortality rate.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	INFECT	INFECT34	Tuberculosis spine (at least partially healed) with soft tissue mass with calcification, bone destruction and gibbus deformity. Calcified abscess in left psoas. Fusion lower lumbar spine.
QUIZ	INFECT	INFECT35	Tuberculosis of shoulder (carries sicca=dry rot) tendency to little pus formation in the shoulder. Markedly eroded humeral head. (image 1936)
QUIZ	INFECT	INFECT36	Tuberculosis proximal phalanx of index finger with periosteal reaction and enlargement. Intramedullary lytic lesion better seen in later image. (spina ventosa--short bone inflated with air) Tuberculous dactylitis is typically seen in children, multiple foci in 35%
QUIZ	INFECT	INFECT37	Osteomyelitis with destruction of proximal and middle phalanges little toe in diabetic.
QUIZ	INFECT	INFECT38	Chronic osteomyelitis tibia and fibula complicated by squamous cell cancer developing in the draining sinus tract from the distal tibia, causing the more sharply-margined bone formation.
QUIZ	INFECT	INFECT39	Tuberculous arthritis and osteomyelitis elbow with marked bone destruction and soft tissue mass with calcifications. (mass may be in expanded joint space)
QUIZ	INFECT	INFECT40	Sarcoid ulna, humerus. Lytic lesion with sclerotic margins extensor surface proximal ulna and lytic lesion distal humerus. 5% of patients with sarcoidosis have bone involvement. It is rare without skin involvement.
QUIZ	INFECT	INFECT41	Tuberculosis of patella. Positive cultures from the lytic lesion. PPD+.
QUIZ	INFECT	INFECT42	Chronic osteomyelitis (Brodie's abscess) proximal tibia. Lytic lesions with thick sclerotic margins.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	INFECT	INFECT43	Syphilis (<i>Treponema pallidum</i>) fibula. Thick, well-consolidated periosteal reaction.
QUIZ	INFECT	INFECT44	Marked periosteal reaction tibia and fibula underlying chronic ulceration.
QUIZ	K	K01	Typical osteoarthritis of the knees with medial compartment narrowed more than lateral (95% of cases). In contrast, symmetrical involvement suggests RA.
QUIZ	K	K02	Standing flexed PA view of knee shows complete loss of cartilage in the medial compartment whereas the standing AP view indicates less severe disease. The knee wears maximally in 28 degrees of flexion as demonstrated by arthroscopy, surgery and anatomical studies.
QUIZ	K	K03	Conventional arthrogram showing medial meniscus tear and popliteal cyst. Patient was too heavy for MR scanner table.
QUIZ	K	K04	Left knee shows joint effusion. Right knee does not have effusion. Fluid contained CPPD crystals. Joint was acutely painful. Diagnosis: pseudogout.
QUIZ	K	K05	Hemophilic arthropathy: both medial and lateral compartments are affected by severe "degenerative" type changes in a younger male patient. Features sometimes seen include enlarged intercondylar notch, squaring of the inferior surface of the patella and increased radiodensity of the synovium due to hemosiderin deposition.
QUIZ	K	K06	Rheumatoid arthritis. Narrowing of cartilage in both medial and lateral compartments which would be unusual for osteoarthritis. Small marginal erosions. Relative lack of osteophytes. Moderate joint effusion and probably hyperplastic synovium in suprapatellar bursa.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	K	K07	Degenerative arthritis of knees. Medial compartment narrowing with associated varus deformity. Large loose bodies in popliteal cyst on right side.
QUIZ	K	K08	Degenerative arthritis with joint effusion and large loose body in anterior knee joint.
QUIZ	K	K09	Multiple bone infarcts. The serpiginous margin resembles the plain radiographic appearance of an old infarct. MRI findings may be seen while the conventional radiograph is normal. Note joint effusion and subchondral fracture of femur.
QUIZ	K	K10	Healing fracture fibula in near anatomic alignment. Old bone infarct in tibia. The peripheral, serpiginous, calcified margin is typical.
QUIZ	K	K11	Knee joint effusion on the left, none on the right. The lateral view is key to detection of effusion where the suprapatellar bursa is seen to be distended with fluid.
QUIZ	K	K12	Calcified popliteal artery aneurysm. Minimal degenerative arthritis patellofemoral joint. Popliteal artery aneurysm is highly associated with abdominal aortic aneurysm, so the latter should be sought. Popliteal aneurysms can thrombose and throw emboli to the feet.
QUIZ	K	K13	AVN femoral condyles in patient treated with steroids for retinitis. Small bilateral effusions. Especially on the left side notice marked femoral abnormality with preservation of the cartilage indicating bone rather than primary joint process.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	K	K14	AVN femoral condyles in patient with SLE treated with steroids. This combination of inciting factors may lead to widespread areas of AVN. SLE alone is said to cause AVN, but it is very difficult to find such a case or report of such a case.
QUIZ	K	K15	Stress fracture of the tibia. Note how this mimics osteoid osteoma to some extent. The clinical history, of repetitive activity or unusual activity, etc. , is very important in suggesting the possibility of stress fracture.
QUIZ	K	K16	Gout with large cysts/erosions around the knee joints. Bilateral joint effusions, right more than left. Typical changes of gout were present in hands and feet.
QUIZ	K	K17	Osteogenic sarcoma (conventional) of the femur. Such intense sclerosis is seen in little else. Sunburst periosteal reaction. Metaphyseal location. Soft tissue mass. Remember that the distal femur is a favorite location for many malignancies (fastest growing growth plate)
QUIZ	K	K18	Rickets: widened growthplates, splaying and cupping of the metaphyses and bowing deformities.
QUIZ	K	K19	Rupture of the patellar tendon with resultant "patella alta." Minimal osteoarthritis knee joint. Note that the patellar tendon is not seen in its usual location. Quad tendon is rippled.
QUIZ	K	K20	ACL and other ligament disruptions. Note anterior subluxation of the tibia on the femur.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	K	K21	Knee arthrogram demonstrates popliteal cyst with extravasation (mostly of air) into the calf. Ultrasound exam prior to this study was negative. Both ultrasound and arthrography are falsely negative in a small percentage of popliteal cysts. Patient had "pseudothrombophlebitis."
QUIZ	K	K22	Severity of degenerative arthritis better demonstrated on lateral view. This can happen because of flexion and valgus or varus stress during lateral exam. Check for joint narrowing on both views.
QUIZ	K	K23	ACL repair using the middle 1/3 of the patellar tendon. Bone attached to both ends of the segment of tendon was taken from patella and tibial tuberosity. Interference fit screws jam the bone plugs into tunnels in tibia and femur.
QUIZ	K	K24	Hemophilic arthropathy knees. Severe "degenerative type" changes in all compartments in a young male. Note radiodense synovium due to hemosiderin.
QUIZ	K	K25	Degenerative arthritis with large subchondral cysts. Large cysts can be occasionally seen with almost any type of arthritis.
QUIZ	K	K26	On conventional radiography a small round or oval radiodensity seen anteriorly in the region of knee joint occupied by the menisci may represent the transverse ligament seen "on end".
QUIZ	K	K27	CPPD arthropathy of knee. Chondrocalcinosis menisci. Patellofemoral joint especially severely involved. CPPD crystals are especially prone to deposit in fibrocartilage, but hyaline cartilage is frequently involved also.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	K	K28	Childhood dermatomyositis with extensive soft tissue calcifications in muscles and subcutaneous tissues. Calcification is more common in children than adults with dermatomyositis. Severe vasculitis is a bad prognostic sign. Severity of vasculitis varies inversely with severity of soft tissue calcification.
QUIZ	K	K29	Pelligrini- Stieda disease: post-traumatic calcification in the MCL near the femoral attachment. Also bone infarct in tibia.
QUIZ	K	K30	Multiple cases of loose bodies in the knee joint, some in popliteal cysts. One case shows osteochondritis dissecans as the source of the loose body.
QUIZ	K	K31	Patient with hot, swollen knees with septic arthritis superimposed on AVN due to SLE with steroid treatment.
QUIZ	K	K32	Infected TKR. Large suprapatellar bursa effusion with gas bubbles in the fluid. This is a constrained prosthesis of the type used when ligamentous structures are deficient.
QUIZ	K	K33	Chondrocalcinosis menisci of knee. Think of CPPD arthropathy, hyperparathyroidism, hypothyroidism, hemochromatosis. Hand has TFC calcification, wrist joint narrowing. Views of the wrist, knee and symphysis will detect the vast majority of cases of chondrocalcinosis.
QUIZ	K	K34	CPPD arthropathy of the knee. Chondrocalcinosis menisci. Severe change in patellofemoral joint.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	K	K35	Charcot joints, knee and hip. Neuropathic arthropathy often shows what looks like very severe degenerative change, disorganization, bone fragments. Bones may appear to have been "cut off" as if by surgery. Metallic compounds were sometimes injected to treat syphilis (densities in buttocks).
QUIZ	K	K36	Giant cell tumor of tibia. Eccentric lytic lesion extending up to the articular surface. No calcified matrix. Age usually 20-40 years.
QUIZ	K	K37	Gout causing a lytic lesion in the patella. Typical changes in the foot. Differential diagnosis of lytic patellar lesions includes various infections, chondroblastoma, EG, dorsal defect of patella, ABC.
QUIZ	K	K38	Genu recurvatum. This results from injury to the anterior tibia/tibial tuberosity growth plate causing the tibial articular surface to slope downward anteriorly. A rather frequent cause is incorrect placement of the traction pin in the proximal tibia when treating femur fractures in children. Fractures in this region can also have the same effect.
QUIZ	K	K39	Osteopetrosis. Very sclerotic bones. "Erlenmeyer flask" deformity of distal femurs. "Bone within a bone" appearance in pelvis. "Sandwich vertebrae."
QUIZ	K	K40	Hemophilic arthropathy. Large destructive lesions.
QUIZ	K	K41	Nonossifying fibroma of tibia. Eccentric, well-defined lytic lesion with sclerotic, often lobulated border located in metaphyseal or metadiaphyseal region. Smaller version with same histology is fibrous cortical defect.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	K	K42	Heterotopic ossification around knees and hips after paralysis due to GSW. Ossification occurs distal to the level of the neurologic lesion but usually not distal to the knees. Limitation of joint motion causes difficulty with positioning, transfers.
QUIZ	K	K43	Marked subperiosteal hemorrhage and subsequent periosteal new bone formation following femoral fracture in child with neuromuscular difficulty. Periosteum is more easily elevated in children.
QUIZ	K	K44	Loose, displaced patellar component of TKR. Tibial component loosening is the most common.
QUIZ	K	K45	Nursing home image. That's "marked" chondrocalcinosis. Fibrocartilage locations likely to calcify: menisci, TFC, symphysis pubis, glenoid and acetabular labra.
QUIZ	K	K46	Probable post-traumatic chondrocalcinosis. Image with IM rod was taken about one week after the date of injury film (GSW).
QUIZ	K	K47	Quadriceps tendon avulsion from superior pole of patella in patient with chronic renal failure who attempted to rise from a chair. Usually the tendon or its insertion are diseased for this to occur.
QUIZ	K	K48	Gaucher's disease. "Erlenmeyer flask" deformity of distal femurs due to packing of the marrow with Gaucher's cells. Three types, all autosomal recessive. Disorder of cerebroside metabolism. Hepatosplenomegaly. Pathologic fractures. Osteonecrosis.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	K	K49	Prominent sulcus (more than 1.5 mm deep) in lateral femoral condyle due to prior ACL tear. During injury the condyle impacts on the posterior edge of the tibial plateau. This accounts for the location of bone bruises seen on MRI.
QUIZ	K	K50	Loose TKR (do not know about infection). Note radiolucency at bone-cement interface.
QUIZ	K	K51	Osteochondritis dissecans left medial femoral condyle, lateral aspect. This is the most common location.
QUIZ	K	K52	Gaucher's disease with AVN of femoral condyles. "Erlenmeyer flask" deformity distal femurs. Accumulation of glucocerebrosides in reticuloendothelial system (may also see hepato-splenomegaly). Defective glycosylceramide-beta-glucosidase.
QUIZ	K	K53	Tear posterior horn medial meniscus. Joint effusion. Popliteal cyst. Bone bruise medial femoral condyle.
QUIZ	K	K54	Standing flexed PA view of knees shows cartilage wear better than standing AP view. Maximum wear occurs at 28 degrees of flexion.
QUIZ	K	K55	Osteopoikilosis. Also enchondroma distal right femur.
QUIZ	K	K56	Rupture of patellar tendon resulting in very high position of patella. Contralateral side for comparison. Minimal DJD
QUIZ	K	K57	Rheumatoid arthritis with large subchondral cysts. Marginal erosion right medial tibial plateau.
QUIZ	K	K58	Hemophilic arthropathy, knees, shoulder. Degererative-type changes involve both medial and lateral compartments. Shoulder arthritis at an early age. These features make you suspicious that this isn't your ordinary osteoarthritis.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	K	K59	Juvenile rheumatoid arthritis. Symmetrical cartilage narrowing. 27 year old.
QUIZ	K	K60	Pigmented villonodular synovitis (PVNS). Erosive changes on both sides of a joint may suggest this. Erosions are more common in "tighter" joints like the hip. Usually affects one joint. Knee is common. No calcifications, unlike synovial osteochondromatosis. Early on, joint cartilage thickness is relatively normal, unlike RA.
QUIZ	K	K61	Occult tibial plateau fracture on plain radiograph. Injured 1-12-02. Plain radiograph 1-30-02. MRI 2-8-02. Knee films show effusion but there was no cross-table lateral view to detect hemarthrosis.
QUIZ	MET	MET01	Renal osteodystrophy. Erosion distal clavicles due to secondary hyperparathyroidism. Note "cup" shape of end of clavicle in contrast to pointed configuration in rheumatoid arthritis. All the bones have increased density.
QUIZ	MET	MET02	Multiple well-defined lytic lesions with sclerotic margins left ilium, left femoral neck, right superior pubic ramus, left scapula, left 3rd and 4th metacarpals, and left third proximal phalanx. These are "brown tumors" due to hyperparathyroidism Sclerotic lesion right ilium is probably a "brown tumor" which has filled in.
QUIZ	MET	MET03	Diffusely dense bones due to renal osteodystrophy. Use spleen size to aid in differential diagnosis. Big spleen with myelofibrosis and sclerosis, mastocytosis, lymphoma.
QUIZ	MET	MET04	Clavicle erosion, dense bones (see spine through heart), and cardiomegaly in renal osteodystrophy.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	MET	MET05	Rickets left wrist and elbow with widened growthplates and cup-shaped metaphyses. Later residual bowing in lower extremities.
QUIZ	MET	MET06	Renal rickets. Widened growth plates and cup-shaped metaphyses.
QUIZ	MET	MET07	Acromegaly. Enlarged sella. Hyperostotic areas in calvarium. Angle of jaw more obtuse. Vertebrae may be enlarged in AP dimension. Joint cartilage thicker than normal but predisposed to early arthritic change.
QUIZ	MET	MET08	Renal osteodystrophy. Triangular pelvis reflecting soft bone of osteomalacia. Soft tissue calcifications: metastatic calcifications. Widened SI joints. Bone resorption medial proximal tibias and distal clavicle.
QUIZ	MET	MET09	Secondary hyperparathyroidism with bone resorption distal clavicle, around SI joints and symphysis pubis.
QUIZ	MET	MET10	Renal osteodystrophy. Periosteal new bone formation femurs. This is more common in secondary than in primary hyperparathyroidism.
QUIZ	MET	MET11	Renal osteodystrophy. Patient on dialysis. Subperiosteal bone resorption medial proximal tibias--typical location. Periosteal new bone formation femurs.
QUIZ	MET	MET12	Tertiary hyperparathyroidism. Chronic renal failure patient on dialysis. Subperiosteal bone resorption hands. Vascular calcifications. "Salt and pepper" skull. Loss of lamina dura around roots of teeth.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	MET	MET13	Secondary hyperparathyroidism. Patient with medullary cystic disease of kidneys. Presented when he avulsed both triceps tendons at elbows. Great example of subperiosteal bone resorption and acroosteolysis in hands. Subperiosteal resorption medial proximal tibias. Periosteal reaction femur.
QUIZ	MET	MET14	Acromegaly and myelosclerosis. Cartilage is thick (in the knees) but has gone to pot in the shoulders. Acromegaly is a cause of premature degenerative arthritis. Large sella. Large external occipital protuberance. Huge spleen and sclerotic bones: remember the spleen can help with the differential diagnosis of sclerotic bones.
QUIZ	MET	MET15	Brown tumor in secondary hyperparathyroidism. Subperiosteal bone resorption medial proximal tibias (better seen on right side).
QUIZ	MET	MET16	Hypoparathyroidism. Osteosclerosis. Marginal sclerosis of iliac crest is typical. Sclerosis lumbar spine.
QUIZ	MET	MET17	"Renal rickets". Osteopenia, prominent osteochondral junctions
QUIZ	MET	MET18	Osteoporosis: examples of prominent vertical trabeculae in spine in osteoporosis (an "early" sign). Osteoporosis-related fractures= Colles, hip, proximal humerus. Biconcave vertebrae. Compression fractures. Kyphosis. Note that prominent vascular calcification often coexists with osteoporosis: a potential source of error in AP DEXA scans of L-spine.
QUIZ	MET	MET19	Rickets. Wide growth plates. Lack of vitamin D and sunlight.

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QUIZ	PA	PA18	D.I.S.H.. Large bridging osteophytes of the vertebrae with relatively normal disc height. SI joints spared. Facet joints still visible.
QUIZ	PA	PA19	JRA. Cartilage narrowing in the intercarpal and wrist joints. Soft tissue swelling around several PIP joints. Osteoporosis.
QUIZ	PA	PA20	Sequential radiographs show time course of an insufficiency fracture of the tibia. Patient is osteoporotic and has lateral compartment knee arthritis. On 11/16 there is pain but no fracture visualized. On 12/22 fracture healing is evident. MRI or bone scan could make the diagnosis sooner.
QUIZ	PA	PA21	Spondylolysis L5 with Grade II spondylolisthesis L5 on S1. Note dogs with defective necks on oblique views. Also degenerative disc disease L5-S1 with disc narrowing. (At this level disc narrowing is sometimes a normal variant)
QUIZ	PA	PA22	Reiter's syndrome. Patient had balanitis, uveitis, sausage digits. Note "sausage digits" right 1st and 3rd toes. Reason for 4th toe amputation unknown.
QUIZ	PA	PA23	Long-standing degenerative arthritis with multiple loose bodies in the shoulder joint. Possibly synovial osteochondromatosis, but hard to tell at this stage of disease. Early on, synovial osteochondromatosis would have multiple loose bodies without much degenerative change.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	PA	PA24	Osteoarthritis of the hip. Note the old cortex of the medial aspect of the femoral head and the new bone formation medial to it as the head subluxes laterally. The shape can simulate an old slipped capital femoral epiphysis, but the old cortical line shows that it is not. Medial osteophyte is called "elephant trunk" osteophyte.
QUIZ	PA	PA25	Old avulsion of ischial apophysis on the right.
QUIZ	PA	PA26	Osteoarthritis most severe in the DIP joints with "seagull" appearance. Less severe changes in 1st CMC and multangular-scapoid joints. Septic arthritis middle finger DIP joint: focal osteoporosis, cortical margins gone. Soft tissue swelling.
QUIZ	PA	PA27	Hemochromatosis. Dense liver on non-contrast CT scan. Arthritic changes in MCP joints. Prominent "beaklike" osteophytes are present on the radial aspects of several metacarpal heads. Intercarpal joints narrowed. Cystic changes. In the hip a wedge-shaped area of radiolucency in the subchondral portion of the femoral head is said to be typical. Osteoporosis, diabetes, abnormal skin pigmentation, cirrhosis and cardiac failure are other features of this disorder.
QUIZ	PA	PA28	Hemophilic arthropathy. Both medial and lateral compartments of knee joint severely narrowed, unlike DJD. Favorite joints are knee, ankle, elbow.
QUIZ	PA	PA29	Scleroderma. Interstitial fibrosis, most prominent in the lower lungs. One T-spine compression fracture, possibly related to steroid therapy-increased osteoporosis.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	PA	PA30	D.I.S.H.. Large bridging osteophytes of the vertebrae with relatively normal disc height. SI joints spared. Enthesophytes at pelvic muscle insertion sites. Ligamentous part of SI joints but not the synovial part may be involved.
QUIZ	PA	PA31	Ankylosing spondylitis. SI joints are partially fused. "Squaring" of anterior surface of vertebral bodies.
QUIZ	PA	PA32	Chronic renal disease with secondary "tumoral calcinosis" (Pathologically the lesions look like the "idiopathic " tumoral calcinosis lesions)
QUIZ	PA	PA33	Reiter's syndrome. Asymmetric paraspinal ossifications thoracolumbar spine. Both SI joints are probably fused (early in the disease asymmetry is more common than in AS, but later both joints are usually involved. Most patients have SI involvement after several years).
QUIZ	PA	PA34	Reflex sympathetic dystrophy (aka Sudek's atrophy). Painful hand following minor trauma about one month previously. Severe osteoporosis. Soft tissue swelling and persistent pain. Radionuclide bone scan or MRI could show hyperemia.
QUIZ	PA	PA35	Rheumatoid arthritis. Marked cartilage narrowing MCP joints with erosions and subluxations. Intercarpal joints narrowed. Carpal bone erosions . Ulnar styloid erosions, etc. Scapholunate ligament on right probably gone.
QUIZ	PA	PA36	Rheumatoid arthritis. Both compartments of knees involved with cartilage narrowing without much in the way of osteophytes. MPT joints severely involved with cartilage narrowing, erosions, subluxations.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	PA	PA37	Rheumatoid arthritis-hands of case PA36. Erosions MCP,s, carpals, ulnar styloid. Osteoporosis.
QUIZ	PA	PA38	Ankylosing spondylitis with AVN femoral heads secondary to steroid therapy. Note fused SI joints. AVN Stage II or III on right and Stage III on left(note the deformity of the articular surface on the left). Lateral view of hip often shows deformity better.
QUIZ	PA	PA39	Renal osteodystrophy with bone resorption due to hyperparathyroidism in many sites. Deformity of thorax and pelvis. "Rugger jersey" spine. "Brown tumor" with pathologic fracture left humerus.
QUIZ	PA	PA40	Rheumatoid arthritis. Impressive periarticular osteoporosis. Soft tissue swelling around wrist due to synovium. Small erosion right ulnar styloid process.
QUIZ	PA	PA41	Psoriatic arthritis. Interphalangeal joints of thumbs show nice "pencil in cup" deformities. Multiple fusions of joints of left fingers. Fusions are much more common in psoriatic arthritis than in degenerative arthritis.
QUIZ	PA	PA42	Hemochromatosis. Degenerative-type changes in the 2nd and 3rd MCP joints (favorites) with distinctive osteophytes on radial aspect of metacarpal heads. This disorder and CPPD favor the MCP's. Dense liver on non-contrast CT scan due to iron deposition. Other causes of dense liver include Amiodarone, gold and thoratrast.
QUIZ	PA	PA43	Psoriatic arthritis. Marked DIP and PIP joint changes. Erosions, cartilage loss. Fusion of right 5th PIP and DIP joints and right 3rd and 4th DIP joints. Fuzzy calcaneal spurs and erosions near retrocalcaneal bursae.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	PA	PA44	Renal osteodystrophy. Subperiosteal bone resorption in phalanges and possibly some widening of SI joints (Manifestations of secondary hyperparathyroidism. "Rugger jersey" spine.
QUIZ	PA	PA45	Scleroderma. Soft tissue calcification near elbow. Loss of soft tissue thickness over the distal phalanges of hands.
QUIZ	PA	PA46	CPPD and acromegaly- a known association. Chondrocalcinosis TFC,s, menisci and hyaline cartilage of knees. Broad tufts of distal phalanges, large thumb sesamoid, broad phalanges are typical of acromegaly.
QUIZ	PA	PA47	Chronic osteomyelitis tibia. Lytic lesion tibia with thick, sclerotic margin and thick periosteal new bone formation. Also degenerative arthritis knee and ankle.
QUIZ	PA	PA48	Renal osteodystrophy. Note subperiosteal bone resorption in the phalanges, especially on the radial side. Resorption clavicles. Deformity thorax. "Salt and pepper" skull. Vascular calcifications.
QUIZ	PAGETS	PAGETS01	Paget's disease in an osteoporotic patient. Coarse trabeculation. Acetabular protrusion. The differential diagnosis for acetabular protrusion includes conditions with soft bones, inflammatory arthritis, Marfan syndrome, idiopathic, etc.
QUIZ	PAGETS	PAGETS02	Paget's disease 3rd metacarpal. Enlarged, sclerotic bone (no biopsy proof). Rare location.
QUIZ	PAGETS	PAGETS03	Paget's disease tibia. Enlargement, coarse trabeculation, sclerosis, bowing. Rectangular defect is biopsy site. Nothing natural is this shape.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	PAGETS	PAGETS04	Paget's disease distal one half radius. Cannot R/O secondary sarcoma, however Paget's can extend into the neighboring soft tissue. Lesion extends all the way to one end of the bone and the opposite end of the lesion has the "blade of grass" margin. Enlargement, coarse trabeculae, sclerosis.
QUIZ	PAGETS	PAGETS05	? Paget,s disease of a phalanx. Sclerotic, enlarged. (No proof)
QUIZ	PAGETS	PAGETS06	Paget's disease thoracolumbar spine. Multiple "picture frame" vertebrae.
QUIZ	PAGETS	PAGETS07	Paget's disease L1. Enlarged vertebra with "picture frame" appearance.
QUIZ	PAGETS	PAGETS08	Paget's disease calcaneus. Sclerosis, coarse trabeculation. Lesion discovered several years previously on bone scan. Paget's shows increased radionuclide uptake.
QUIZ	PAGETS	PAGETS09	Pagets disease of visualized pelvis and femurs with coarse trabeculation and sclerosis. Patient has suffered bilateral subtrochanteric fractures (fixed on left with a special nail for this type of fracture). Such fracture location is very uncommon except in Paget's and osteomalacia. The unfixed fracture is transverse (uncommon in normal bone) with the "broken banana" appearance.
QUIZ	PAGETS	PAGETS10	Paget's disease tibia. Sclerosis, coarse trabeculation and bowing with incomplete fracture of anterior cortex (convex surface). In contrast, the Looser's zones in osteomalacia involve the concave side of the bone. Note typical sparing of the fibula.
QUIZ	PAGETS	PAGETS11	Paget's disease tibia. Enlargement, coarse trabeculation, sclerosis, fibula spared.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	PAGETS	PAGETS12	<p>Paget's disease tibia. Enlarged, sclerotic proximal tibia (all the way to the end of the bone) with distal "flame shaped" or "blade of grass" shaped margin. Fibula spared. Later suffers transverse, "broken banana" fracture.</p>
QUIZ	PAGETS	PAGETS13	<p>Paget's disease ulna. Lesion starts at proximal end of bone and displays sclerosis and coarse trabeculation and causes some bowing. Patient suffered avulsion fracture of the triceps attachment which may reflect the weakness of Pagetic bone (despite the robust appearance).</p>
QUIZ	PAGETS	PAGETS14	<p>Paget's disease tibia starting at the proximal end, showing expansion and coarse trabeculation and sclerosis and having a distal "flame shaped" margin. Fibula spared.</p>
QUIZ	PAGETS	PAGETS15	<p>Paget's disease skull with impressive maxillary involvement. The calvarium shows the "cotton-wool appearance of the mixed (lytic and blastic) phase of Paget's. When the skull base is involved the weak bone may lead to basilar invagination and pressure on the cord and brainstem.</p>
QUIZ	PAGETS	PAGETS16	<p>Paget's disease involving the entire right femur. There is enlargement, coarse trabeculation and sclerosis. An acute, transverse, "broken banana" fracture is present. There is a healed subtrochanteric fracture. Varus angulation of the femoral neck may be the result of the prior fracture or Paget's. Fractures in Paget's are associated with an increased incidence of osteosarcoma --more than the increased incidence with Paget's alone.</p>

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	PAGETS	PAGETS17	Paget's disease with "picture frame" vertebra L1. Also degenerative arthritis and disc disease with anterior subluxation of L4 on L5 because of the facet arthritis. Later a posterior fusion is performed. Note some screws in the discs. This is not particularly bad within a fusion but a bad idea at the end of a fusion.
QUIZ	PAGETS	PAGETS18	Paget's disease of pelvis and femur with typical features. In the pelvis one can contrast the size of the involved superior pubic ramus with the uninvolved side. In the femur the involvement extends proximally from the distal end of the bone. Proximal margin has "blade of grass" shape.
QUIZ	PAGETS	PAGETS19	Paget's disease of the right side of the pelvis (provides nice contrast with uninvolved side). Complications of Paget's, acetabular protrusion and hip arthritis, are present on the involved side.
QUIZ	PAGETS	PAGETS20	Paget's disease of the pelvis complicated by both arthritis and osteogenic sarcoma. Most sarcomas in Paget's are lytic and carry a very bad prognosis. Paget's disease and prior radiation therapy are the major underlying conditions in osteosarcoma arising in older individuals.
QUIZ	PAGETS	PAGETS21	Paget's disease of the mid tibia. This is one location where it may involve the mid portion of the bone without extending to one end. Note "blade of grass" margins.
QUIZ	PAGETS	PAGETS22	Paget's disease tibia. Enlargement, bowing, sclerosis. Fibula spared.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	PAGETS	PAGETS23	Paget's disease of left femur with transverse, subtrochanteric fracture. Most old people fracture the femoral neck or intertrochanteric portion.
QUIZ	PAGETS	PAGETS24	Paget's disease of the tibia. Lesion starts from proximal end of bone, shows enlargement, coarse trabeculation, and sclerosis. "blade of grass" distal margin. Fibula not involved.
QUIZ	PAGETS	PAGETS25	Pagets disease of pelvis and femur with transverse, "broken banana" fracture of femur. Broken banana included in images for comparison.
QUIZ	PAGETS	PAGETS26	Paget's disease thoracic spine with sclerotic, enlarged vertebral body. Patient suffered pathologic fracture with spinal cord compression.
QUIZ	PAGETS	PAGETS27	Paget's disease patella. Sclerotic, enlarged patella. Fixation wire from prior fracture. Opposite patella for size comparison.
QUIZ	PO	PO1	Wrong size head component for hemiarthroplasty does not seat in acetabulum and dislocates.
QUIZ	PO	PO2	Pin tract infection. Focal radiolucency due to bone resorption around two distal anchor screws near the entry side. Uniform radiolucency along the length of the pin would be more typical for loosening.
QUIZ	PO	PO3	Head of femoral component too large to fit acetabular component. After it is changed it fits well.
QUIZ	PO	PO4	"Cement arthrogram." Bone cement injected to reinforce screw placement filled the hip joint.
QUIZ	PO	PO5	IM rod placed to treat mid femur fracture. Note that placement of the proximal locking screw caused an additional fracture. (One would not use an IM rod to treat an intertrochanteric fracture)

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	PO	PO6	Pin used to reinforce fusion of cervical spine has moved, compromising spinal canal. Note that bone cement was used for part of the fusion. This is a clue that the procedure was probably done for malignancy.
QUIZ	PO	PO7	Worn and probably loose acetabular component. Radiolucency at bone-cement interface around the femoral component is probably OK (less than 1.5mm).
QUIZ	PO	PO8	Non-stable fusion proven by vacuum cleft discs appearance on extension view in contrast to flexion view. Note also radiolucent "halo" around the right upper screw.
QUIZ	PO	PO9	High tibial osteotomy cut "free hand" goes into joint. One case shows use of pins to guide cut. This procedure was used widely prior to TKR for treatment of medial compartment arthritis.
QUIZ	PO	PO10	Fusion for "hangman's" fracture. Lower screws did not catch as much bone as desired.
QUIZ	PO	PO11	Left L3 pedicle screw not in pedicle.
QUIZ	PO	PO12	Intraoperative misplacement of femoral component.
QUIZ	PO	PO13	Placing screws in the disc does not provide much holding power. Note that the screw pulled out a bit. Also, placing a screw into the disc at the end of a fusion helps destroy the disk which is already subjected to increased stress by the fusion.
QUIZ	PO	PO14	Loose acetabular component of THR . Position suggests it has moved. Large radiolucency around acetabular component. Arthrogram confirms loosening as contrast medium dissects entirely around the acetabular component.

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QUIZ	PO	PO15	Hook has slipped off the inferior end of the Harrington distraction rod. These are Harrington distraction and compression rods, not used much any more.
QUIZ	PO	PO16	AVN of the lunate treated with silastic prosthesis which dislocated dorsally. The native lunate generally dislocates in a volar direction.
QUIZ	PO	PO17	Acetabular component, loose at cement-bone interface, has turned upside down. Femoral component dislocated.
QUIZ	PO	PO18	Nuts missing from lower set of hooks. ?Ran out of nuts?
QUIZ	PO	PO19	Loose acetabular component has rotated. Note placement of prosthesis in contrast to location of native acetabulum.
QUIZ	PO	PO20	Broken acetabular component. Note asymmetry of femoral and acetabular components. Moderate cartilage narrowing medially in left hip.
QUIZ	PO	PO21	Loosening and "subsidence" of femoral component of THR. Radiolucency of more than 1.5 mm at the cement-bone interface.
QUIZ	PO	PO22	Loose femoral component. "Particle disease" in this case due to cement fragments. Lytic lesions can occur anywhere the particle-laden fluid can access--as around the tip of the femoral component in this case.
QUIZ	PO	PO23	Ulnar impaction syndrome. Degenerative cysts in lunate associated with positive ulnar variance. Treatment of ulnar variance with osteotomy.
QUIZ	PO	PO24	Paraplegia after spinal surgery. Screw at T11 is probably the culprit.

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QUIZ	PO	PO25	Pedicle screws obviously do not hold well in the disc. In the middle of a fusion this usually does not make any difference. At the end of the fusion a previously -normal disc can be injured. This disc is already put under increased stress by the presence of the fusion and may fail prematurely.
QUIZ	PO	PO26	"Careless drilling"-- Note holes in the radius from drilling through the ulna and the intervening soft tissues into the radius. This caused heterotopic bone formation and loss of pronation-supination.
QUIZ	PO	PO27	Traction pin placed in tibia for femur fracture goes through growth plate. This can cause genu recurvatum deformity if anterior portion of plate fuses prematurely.
QUIZ	PO	PO28	
QUIZ	PO	PO29	Allograft to replace bone resected for tumor treatment. Given no history, differing size and density of bone may be a clue to differentiate allograft from osteotomy.
QUIZ	PO	PO30	Leg lengthening procedure using IM rod with proximal locking screws to maintain alignment and external fixator to move the bone segments. Unfortunately, the fixator screws locked the distal end of the IM rod. Attempted distraction bends screws and gets little results.
QUIZ	PO	PO31	Bad day in the OR. Misplaced femoral component.
QUIZ	PO	PO32	Allograft for chondrosarcoma resection. Foreign bone recognized by size and density. Often you get no history.
QUIZ	PO	PO33	Old fashioned hemiarthroplasty. Broken stem. No cartilage left in acetabulum.

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QUIZ	PO	PO34	Fusion L4-5. Minimal subluxation L4 on 5--fused in that position (usually subluxations are fused in situ). Pedical screws in L4 hemangioma (apparently this causes no problem). Note characteristic appearance of hemangioma on preop CT and on the conventional image.
QUIZ	PO	PO35	Femur fracture in 3 year old reduced to anatomic alignment (rather than left overriding) actually overgrows and becomes too long relative to the uninjured side due to the hyperemia of healing. Override up to about 3cm is often a good thing.
QUIZ	PO	PO36	Rotational malalignment post external fixation. This is difficult to detect. Often it is easier clinically. None-the-less: the knee is close to lateral and the ankle AP on one of the views.
QUIZ	PO	PO37	Retained drain fragment.
QUIZ	PO	PO38	Bone cement embolization during vertebroplasty. This is more apt to cause a problem when a great number of levels are done.
QUIZ	PO	PO39	Nonunion femoral neck fracture not well seen on conventional image. Conventional tomogram shows fracture line well. MRI, of course, shows signal void due to the screws. Presumably reconstructed CT's would have been satisfactory.
QUIZ	PO	PO40	Cast much too short for distal femur fracture--needs half-Spika.
QUIZ	PO	PO41	Cast for distal tibia/fibula fractures wedged on the wrong side. (recognized and promptly corrected)
QUIZ	PO	PO42	Bent screw proves intraarticular location.
QUIZ	PO	PO43	Subsidence of prosthesis into the femur with fracture and shedding of the sintered spheres of the porous coat material surfacing the stem of the prosthesis (hummingbird shot).

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QUIZ	PO	PO44	The recent (skin staples) left hemiarthoplasty has the wrong size femoral head component which does not fit in the acetabulum
QUIZ	PO	PO45	Multiple serial bone marrow biopsies have left the bone near the SI joints looking like a woodpecker was working there. Healing of these can cause confusing appearances on radionuclide bone scan and on MRI.
QUIZ	PO	PO46	Left side pedical screws did not catch much bone. Ideally, one needs to be looking directly along a screw (or needle) to tell where it is. That is why multiplane fluoroscopy is so useful.
QUIZ	PO	PO47	Both components of TKR are loose. More than 1.5 mm radiolucency at cement -bone interface around the acetabular component and prosthesis-cement separation around the femoral component (no gap permitted there).
QUIZ	PO	PO48	Resection of distal portions of 2nd - 5th proximal phalanges somewhat resembles neuropathic arthropathy.
QUIZ	PO	PO49	Broken compression rods. Often these abnormalities are seen on only one of many views. One needs to check the hardware in all projections.
QUIZ	PO	PO50	Loose femoral component of THR. Cement fracture near tip. Gap at prosthesis-cement interface.
QUIZ	PO	PO51	Missing nut on third screw from bottom on the right. ? In a hurry? Out of nuts??
QUIZ	PO	PO52	Heterotopic bone formation between radius and ulna after plate and screw fixation. One must try to not disturb the tissues between the bones.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	PO	PO53	Fixation of this distal femur fracture with plate and screws resulted in an additional fracture into the perviously pristine joint.
QUIZ	PO	PO54	Contrast medium extravasation at injection site. Fortunately, this is usually tolerated quite well with "non-ionic" contrast medium. If the amount is estimated to exceed 100cc, a plastic surgery consult should be called.
QUIZ	SH	SH01	Severe shoulder arthritis in acromegaly. The cartilage is thicker than normal to start with but does not hold up well.
QUIZ	SH	SH02	Prominent rhomboid fossa right clavicle. Costoclavicular ligament attaches here. Do not mistake for lytic lesion.
QUIZ	SH	SH03	Polyostotic fibrous dysplasia with McCune-Albright syndrome. Involvement of both humerus and scapula greatly narrows the possibilities. Humerus lesion is quite long, also decreasing possibilities.
QUIZ	SH	SH04	Calcific tendonitis long head of biceps tendon. Calcification occurs near musculotendinous junction about 6 cm inferior to humeral head. Calcification projects medial to shaft of humerus on internal rotation.
QUIZ	SH	SH05	Fibrodysplasia ossificans progressiva. Extensive soft tissue heterotopic bone formation. Can interfere with respiration and movement. Characteristic short great toe aids in diagnosis.
QUIZ	SH	SH06	Avascular necrosis humeral head. Sclerotic bone gives "snowcap" appearance. This patient had multiple infarcts elsewhere.
QUIZ	SH	SH07	Rheumatoid arthritis shoulder with pointed erosion of distal clavicle (in contrast to cup-shaped distal clavicle in hyperparathyroidism).

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QUIZ	SH	SH08	Osteosarcoma proximal humerus. Lytic, aggressive lesion with soft tissue extension and periosteal reaction. DDX: Ewing's sarcoma and possibly osteomyelitis.
QUIZ	SH	SH09	Fracture humeral neck and head with associated lipohemarthrosis (fat-fluid level on upright views). Inferior subluxation of humeral head "drooping shoulder" caused by joint effusion.
QUIZ	SH	SH10	Osteochondroma scapula. Lesion has nice example of cartilage type matrix calcification. This is a large lesion and could also be a low grade chondrosarcoma. The femur and humerus are the most common locations for osteochondromas.
QUIZ	SH	SH11	Rheumatoid arthritis. Erosions of humeral head. Probably some cartilage narrowing in shoulder joint.
QUIZ	SH	SH12	Ochronosis. Another cause of severe shoulder arthritis. Spine changes are distinctive with universal disc narrowing and calcification. Defective homogentisic acid oxidase.
QUIZ	SH	SH13	Patient with pulmonary edema. Incidentally noted chondrocalcinosis of the articular (hyaline) cartilage of the shoulders (humeral heads). One would expect that knee, wrist and symphysis pubis would also be involved.
QUIZ	SH	SH14	Posterior dislocation left shoulder. Humeral head may be "stuck" in internal rotation. "Trough line": impaction fracture of anterior aspect of humeral head from striking posterior glenoid--equivalent of the Hill-Sachs deformity associated with anterior dislocation.
QUIZ	SH	SH15	Shoulder erosive changes in juvenile rheumatoid arthritis.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	SH	SH16	Fibrodysplasia ossificans progressiva. Extensive soft tissue heterotopic bone formation. Can interfere with respiration and movement. Characteristic short great toe aids in diagnosis. Great toes abnormal in 100%, thumbs abnormal in 50%.
QUIZ	SH	SH17	Synovial osteochondromatosis, shoulder joint. Multiple similar-sized loose bodies in the axillary and subscapular recesses of the shoulder joint.
QUIZ	SH	SH18	Charcot shoulder. Neuropathic joint with appearance simulating surgical resection. Sclerosis. Bony detritus in axillary recess.
QUIZ	SH	SH19	Neuropathic right shoulder joint secondary to degenerative changes in the cervical spine. Note also right hemidiaphragm elevation due to paralysis (C3,4 and 5 keep the diaphragm alive).
QUIZ	SH	SH20	Juvenile rheumatoid arthritis shoulder. Note multiple erosions of left humeral head.
QUIZ	SH	SH21	Tuberculosis of the shoulder with erosions and intraarticular calcifications.
QUIZ	SH	SH22	Anterior dislocation of shoulder with Hill-Sachs deformity, also shown on CT.
QUIZ	SH	SH23	"Drooping shoulder" is a term applied to the appearance of inferior subluxation of the humeral head. It usually results from a joint effusion or a neuromuscular disorder affecting the deltoid muscle. This patient struck a telephone pole on his ATV, avulsing portions of the brachial plexus and fracturing his humerus.
QUIZ	SH	SH24	AVN humeral head in patient with sickle cell disease. Infarcts and resultant endosteal bone formation in the humerus give the "bone-within-a-bone" appearance.

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QUIZ	SH	SH25	Loose body in axillary recess of shoulder joint. Moderate arthritic change shoulder joint. Loose body has grown considerably since it started as a small cartilage or cartilage/bone fragment. "Loose bodies" can even acquire a blood supply from the synovium in some cases.
QUIZ	SH	SH26	"Luxatio erecta" type of shoulder dislocation. Worker fell through floor. Forced abduction of humerus levers head out of glenoid using acromion as a fulcrum.
QUIZ	SH	SH27	Large loose bodies in subdeltoid recess of shoulder joint (beneath coracoid process). Moderate degenerative arthritis shoulder joints.
QUIZ	SH	SH28	Huge "loose body" in subscapular recess (beneath coracoid process). Moderate degenerative arthritis of shoulder joint.
QUIZ	SH	SH29	Unfused ossification center for acromion best seen on axillary view of the shoulder. This is normal in a young person. If fusion fails to occur an "os acromiale" results. This can be symptomatic and cause impingement--degenerative changes between os acromiale and remainder of acromion impinge on superior surface of rotator cuff.
QUIZ	SH	SH30	Normal shoulder arthrogram. Joint holds about 16 cc of fluid. Note biceps tendon outlined in biceps tendon sheath.
QUIZ	SH	SH31	Shoulder arthrogram. Rotator cuff tear. Contrast medium fills shoulder joint and subdeltoid-subacromial bursa. On the axillary view contrast medium should not cross the neck--that is a sign of a rotator cuff tear with contrast in subdeltoid-subacromial bursa.

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QUIZ	SH	SH32	"Vacuum cleft" in shoulder joint (on internal rotation view). This patient was suspected of having a joint infection. The "vacuum cleft" makes effusion and infection unlikely. (Unless, of course, it was actually gas produced by organisms in the joint)
QUIZ	SH	SH33	Superior subluxation of humeral head indicating chronic degeneration of rotator cuff (which would normally separate humeral head and acromion). MRI confirms rotator cuff tear with retraction of supraspinatus.
QUIZ	SH	SH34	AVN humeral head. Subchondral fracture. (Lung disease in one patient)
QUIZ	SH	SH35	Rheumatoid arthritis shoulder. Erosions humeral head and cartilage narrowing in glenohumeral joint.
QUIZ	SH	SH36	Enchondroma humerus. Fairly common incidental finding on chest imaging. Stippled matrix calcifications more central than the calcification in bone infarct which tends to be a serpiginous outline of the lesion.
QUIZ	SH	SH37	Calcific tendonitis infraspinatus and long head of biceps.
QUIZ	SH	SH38	Increased density caused by overlap of humeral head and acromion can mimic AVN. "pseudosnowcap."
QUIZ	SH	SH39	Calcific tendonitis in supraspinatus and subscapularis (one case) and in the infraspinatus and supraspinatus in the other case.
QUIZ	SH	SH40	Calcific tendonitis long head of biceps. Also old injury to inferior glenoid rim.
QUIZ	SH	SH41	Chondrocalcinosis shoulder. Infiltrates/edema lungs.
QUIZ	SH	SH42	Neuropathic shoulder joint.. Humerus appears "resected". Sclerosis. "Bone fragments. Patient had chronic dislocation of contralateral shoulder.

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QUIZ	SH	SH43	Sprengel's deformity left shoulder. Omovertebral bone connects scapula to cervical spine. Cervical spine anomalies frequently associated.
QUIZ	SH	SH44	Anterior dislocation shoulder. Note that the head is inferiorly displaced as well.
QUIZ	SH	SH45	Hyperparathyroidism with medial proximal humerus erosion and some "tunneling" of the cortex and lytic lesions around shoulder secondary to beta-microglobulin amyloid deposition secondary to dialysis for chronic renal failure. Clips present in neck from parathyroid surgery.
QUIZ	SH	SH46	Posterior dislocation of shoulder. Axillary view shows the humeral head impacted on the posterior glenoid rim. Posterior dislocation is uncommon and often missed. It may occur secondary to electric shock or seizure.
QUIZ	SH	SH47	Gout involving many areas. Distal clavicles eroded. Olecranon bursitis. Typical erosions in feet.
QUIZ	SH	SH48	Ossification of coracoclavicular ligament. Conoid (medial) and trapezoid portions. Commonly follows AC separation with injury to the coracoclavicular ligament.
QUIZ	SH	SH49	Calcific tendonitis supraspinatus. Very large calcification. Probably the most common site of calcific tendonitis in the shoulder.
QUIZ	SH	SH50	Synovial osteochondromatosis shoulder joint.
QUIZ	SH	SH51	Calcific tendonitis long head of biceps tendon. Calcification occurs at musculotendinous junction, about 6 cm inferior to shoulder joint. Visible medial to humeral shaft on internal rotation.
QUIZ	SH	SH52	AVN humeral head in patient with sickle cell disease. Infarcts and resultant endosteal bone formation in the humerus give the "bone-within-a-bone" appearance.

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QUIZ	SH	SH53	Osteonecrosis secondary to radiation therapy for breast cancer.
QUIZ	SH	SH54	Heterotopic bone near the shoulders in quadriplegic patient. Heterotopic bone forms distal to the level of neurologic injury and generally not distal to the knee.
QUIZ	SH	SH55	"Drooping shoulder" is a term applied to the appearance of inferior subluxation of the humeral head. It usually results from a joint effusion or a neuromuscular disorder affecting the deltoid muscle. In this case the underlying cause was stroke, probably the most common cause.
QUIZ	SH	SH56	Avascular necrosis of the humeral head due to Steroid treatment in 21 year old with SLE. This combination of disease and treatment makes for a high incidence of AVN. SLE alone is said to cause AVN, but it is very difficult to find such a case.
QUIZ	SH	SH57	Heterotopic bone formation around shoulder and hip in patient who was "paralyzed" for 3 months of intubation. Following that, she was at rehabilitation facility for 2 months and noted decreased range of motion.
QUIZ	SH	SH58	Paget's disease of the humerus complicated by the development of osteogenic sarcoma. Paget's and radiation therapy are the major predisposing factors in development of osteogenic sarcoma in older persons.
QUIZ	SH	SH59	Tuberculosis of the shoulder with erosions of humeral head. (caries sica=dry rot-- there is a relative lack of pus formation in tb of the shoulder)

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QUIZ	SH	SH60	Ankylosing spondylitis. Many joints totally fused in this patient. Note that in the left shoulder there is a fracture of the heterotopic bone. This was why the image was taken. Read Arthritis in Black and White. Be surprised.
QUIZ	SH	SH61	Synovial osteochondromatosis biceps tendon sheath.
QUIZ	SH	SH62	Loose body in biceps tendon sheath.
QUIZ	SH	SH63	Patient with Ehler's -Danlos syndrome, could dislocate her shoulder easily. Arthrogram shows humeral head located and dislocated.,
QUIZ	SH	SH64	Heterotopic bone around the left shoulder in head-injury patient who remained unconscious for a long period.
QUIZ	SK	SK01	Paget's disease. Basilar invagination with odontoid tip more than 5 mm above a line from the hard palate to the posterior edge of the foramen magnum. "Cotton wool" appearance with multiple fluffy sclerotic areas.
QUIZ	SK	SK02	Paget's disease. Osteoporosis circumscripta in occiput. Patchy sclerotic areas. Sclerotic area anteriorly could also be hyperostosis frontalis interna. The lytic area would be "hot" on radionuclide bone scan.
QUIZ	SK	SK03	Achondroplasia. Large skull, small face. Note small AP diameter of spinal canal in cervical spine.
QUIZ	SK	SK04	Depressed skull fracture. If there is significant depression the bone should be elevated. If you are in a disadvantaged land without CT, tangential radiographs can show the amount of depression.
QUIZ	SK	SK05	Torus palatinus. Bony overgrowth from hard palate, well seen on basal and Water's views.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	SK	SK06	Trimalar fracture of facial bones. Fractures of inferior and lateral orbit and zygomatic arch result in a mobile bone fragment. Maxillary antrum on right is opacified with blood.
QUIZ	SK	SK07	Depressed skull fracture. If there is significant depression the bone should be elevated. If you are in a disadvantaged land without CT, tangential radiographs can show the amount of depression.
QUIZ	SK	SK08	Calcification in astrocytoma. Thinning of dorsum sella due to increased intracranial pressure. If you cannot identify an intracranial calcification as a common benign one you must suspect tumor.
QUIZ	SK	SK09	Groove for middle meningeal artery seen crossing the sella can mimic a fracture line.
QUIZ	SK	SK10	"Blow out" fracture of orbit with blood in maxillary antrum and depressed orbital floor fragment.
QUIZ	SK	SK11	Lateral orbital rims and walls resected in some sort of decompression procedure.
QUIZ	SK	SK12	Submandibular gland calculi.
QUIZ	SK	SK13	Multiple myeloma with multiple sharply defined lytic lesions in the skull and nice example of endosteal scalloping in the femur. Calcification pineal (unrelated).
QUIZ	SK	SK14	Acute maxillary sinusitis with mucosal thickening and air-fluid level and normal image on same patient at a different time. You must have a horizontal x-ray beam to demonstrate air-fluid levels.
QUIZ	SK	SK15	Acute frontal sinusitis with air-fluid level in left side frontal sinus. Frontal sinusitis is worrisome due to proximity of the brain.
QUIZ	SK	SK16	Choroid plexus calcifications.
QUIZ	SK	SK17	Sickle cell anemia with expanded diploic space. Note aerated paranasal sinuses to differentiate from thalassemia major.

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QUIZ	SK	SK18	Sickle cell anemia with expanded diploic space and "hair on end" appearance. Note aerated paranasal sinuses to differentiate from thalassemia major.
QUIZ	SK	SK19	Calcification of pineal and habenular commissure (C-shaped calcification anterior to pineal and opening toward pineal--this commissure handles information which goes in one ear and comes out the other).
QUIZ	SK	SK20	Periapical abscess left 1st molar (radiolucency around the root of a tooth with a cavity) Also note impacted left third molar.
QUIZ	SK	SK21	Hyperostosis due to meningioma.
QUIZ	SK	SK22	Tuberous sclerosis. Intracranial calcifications often in a paraventricular location. May have focal hyperostoses or diffuse calvarial thickening.
QUIZ	SK	SK23	Myeloma. "Raindrops"
QUIZ	SK	SK24	EG aka Langerhans Cell Histiocytosis with lytic lesions in skull and femur. Always include in DDX of pediatric lytic lesion.
QUIZ	SK	SK25	Sturge-Weber Syndrome. Intracortical calcification.
QUIZ	SK	SK26	Normal skull. Keepng you honest.
QUIZ	SK	SK27	Sturge-Weber Syndrome. Intracortical calcification. Hemiatrophy.
QUIZ	SK	SK28	Pituitary calculus. Rare stuff. Probably due to infarction.
QUIZ	SK	SK29	Hypopituitarism. Calcification of basal ganglia and dentate nuclei.
QUIZ	SK	SK30	Pneumocephalus due to perforation of left frontal sinus by osteoma. Most common location for oseoma.
QUIZ	SK	SK31	Skull fracture with subsequent development of leptomenigeal cyst. "growing fracture"

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	SK	SK32	Tuberous sclerosis. Intracranial calcifications often in a paraventricular location. May have focal hyperostoses or diffuse calvarial thickening. Mutations to two tumor-suppressor genes. Triad: epileptic seizures, mental retardation and skin lesions.
QUIZ	SK	SK33	Normal lamina dura around roots of teeth (white line). Periodontal inflammation makes it disappear.
QUIZ	SK	SK34	Hyperparathyroidism (secondary). "Salt and pepper" skull, loss of lamina dura around tooth roots, resorption of distal clavicle, apparent widening of SI joints, subperiosteal bone resorption medial proximal tibias.
QUIZ	SK	SK35	Hyperostosis planum sphenoidale due to overlying meningioma.
QUIZ	SK	SK36	Osteoma temporal bone. Osteomas usually involve membranous bone.
QUIZ	SK	SK37	Facial fracture with air-fluid level seen in maxillary antrum on cross-table lateral C-spine view. Remember this is the only trauma view likely to show air-fluid levels (horizontal x-ray beam).
QUIZ	SK	SK38	Hemiatrophy of brain. Note upward tilt of petrous bone on that side, displacement of superior sagittal sinus (falx calcification), tilt of crista gali. Normal for comparison.
QUIZ	SK	SK39	Right orbit blow-out fracture. Note air-fluid level on cross-table lateral view and the depressed floor fragment on the Water's view.
QUIZ	SK	SK40	Pneumosinus dilans: enlarged sphenoid sinus with blistering of the planum sphenoidale associated with planum meningioma.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	SK	SK41	Hemangioma of left frontal bone. Web-like trabecular pattern. Most often cavernous hemangiomas in the skull.
QUIZ	SK	SK42	Glial rests in the occiput. Normal variant.
QUIZ	SK	SK43	Metastatic breast cancer. Multiple ill-defined lytic lesions. Contrast to well-defined lesions of multiple myeloma.
QUIZ	SK	SK44	Air-fluid level in sphenoid sinus due to basal skull fracture. Part of the fracture is seen above the sella.
QUIZ	SK	SK45	Enlarged sella due to pituitary adenoma. Chromophobe adenoma is the variety most likely to enlarge the sella and may lead to visual field defects and hypopituitarism. Eosinophilic adenomas are associated with other changes of gigantism, acromegaly. Basophilic adenomas rarely enlarge sella.
QUIZ	SK	SK46	Thalassemia major. "Hair on end" appearance of enlarged diploic space. Non-aerated paranasal sinuses: contrast to sickle cell disease.
QUIZ	SK	SK47	Large frontal sinus osteoma. This is the most common location for this lesion. Incidence of 0.42% in patients having sinus radiographs.
QUIZ	SK	SK48	Intracranial calcification in ependymoma. Unless you can be sure of the typical benign appearance of an intracranial calcification, investigate with cross-sectional imaging. Highest incidence of calcification in oligodendroglioma (46.7%). Ependymoma (14.6%, or if supratentorial 32%).
QUIZ	SK	SK49	Dentigerous cyst. Cyst with unerupted tooth inside.
QUIZ	SK	SK50	Fracture through frontal sinus with pneumocephalus.
QUIZ	SK	SK51	Thick skull due to loss of brain volume following shunting.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	SS	SS01	Bone infarcts in left femur giving a bit of the "bone within a bone" look. Sickle cell disease.
QUIZ	SS	SS02	Avascular necrosis femoral head. The "bone within a bone" appearance of the femoral shaft, due to additional infarcts, makes sickle cell disease the most likely etiology for the AVN.
QUIZ	SS	SS03	Gallstones and a calcified spleen in sickle cell disease. The difusely calcified speen is pathognomonic of this diagnosis.
QUIZ	SS	SS04	Sickle cell disease with gallstones and vertebral endplate deformities. These are not the best example of endplate deformities which classically have the "Lincoln Log" appearance.
QUIZ	SS	SS05	Sickle cell disease with bony sclerosis, vertebral deformities and small, calcified spleen. The lateral view is usually necessary to appreciate the classic rectangular (as opposed to biconcave) endplate depressions of sickle cell disease.
QUIZ	SS	SS06	Sickle cell disease with bilateral femoral head AVN, stage III on the right and Stage II on the left. Stage III disease with articular surface deformity will progress to arthritic change requiring prosthetic replacement. Sometimes coring procedures can help in Stage II disease.
QUIZ	SS	SS07	Sickle cell disease with AVN femoral heads which required THR on right. Acetabular protrusion. Sickle cell disease is one of the causes of acetabular protrusion near the bottom of the list. "Bone within a bone" appearance left femur.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	SS	SS08	Sickle cell disease. Small calcified spleen visible on both the chest and abdomen images. Cardiomegaly. Vertebral deformities, some of which have a rectangular depression suggestive of sickle cell disease.
QUIZ	SS	SS09	Sickle cell disease. Bony sclerosis. Vertebral deformities. Gallstones.
QUIZ	SS	SS10	Sickle cell disease. Calcified spleen. Possible ascites. Possible hepatomegaly.
QUIZ	SS	SS11	Sickle cell disease. Bony sclerosis. Gallstones. Classic "Lincoln Log " vertebral endplate deformities seen on lateral view chest. These result from infarction of the central portion of the end plate (which has a poor blood supply) during childhood.
QUIZ	SS	SS12	Sickle cell hemoglobin D disease. Vertebral endplate deformities. Bony sclerosis shoulder- possibly AVN.
QUIZ	ST	ST01	Post traumatic ossification in the Achilles tendon.
QUIZ	ST	ST02	HPO: hypertrophic pulmonary osteoarthropathy. Widespread periosteal reaction in this case secondary to lung neoplasm.
QUIZ	ST	ST03	Calcified varicose veins Also moderate degenerative arthritis of the knee joint.
QUIZ	ST	ST04	Soft tissue ossifications due to chronic venous stasis. Lower leg is the typical location. Clinical manifestations include chronic dermatitis and cellulitis and atrophy of skin and subcutaneous tissue.
QUIZ	ST	ST05	Oval calcifications due to cisticercosis. Calcification at the site of the death of the larvae of the pork tapeworm, Taenia soleum.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	ST	ST06	Soft tissue calcification in dermatomyositis. Patient had Raynaud's and dysphagia. The sheet-like calcification (as though along soft tissue planes) is rather typical of this disorder.
QUIZ	ST	ST07	Soft tissue calcification in dermatositis: as in this case, these are sometimes large cystic collections of semifluid material which may show fluid-fluid levels on cross-sectional imaging
QUIZ	ST	ST08	Periosteal reaction tibia and fibula due to chronic venous stasis. Patient had ulcerations due to the venous stasis. Venous stasis is the most common etiology of extensive periosteal reaction in the lower legs.
QUIZ	ST	ST09	Soft tissue mass posterior to distal femur was popliteal artery aneurysm. Remember the association of these with abdominal aortic aneurysm. If you find the former be sure to seek the latter. PAA can thrombose and throw emboli distally.
QUIZ	ST	ST10	Osteomyelitis of radius and ulna in a "skin popper". Periosteal reaction and bone destruction. The bone destruction permits a pretty specific diagnosis of osteomyelitis. The periosteal reaction could be secondary to overlying chronic inflammation without actual osteomyelitis.
QUIZ	ST	ST11	Myositis ossificans in gluteus muscle. Buttocks and thigh are rather common sites of trauma leading to myositis ossificans.
QUIZ	ST	ST12	Heterotopic bone formation secondary to paraplegia caused by GSW. Bone like this obviously limits range of motion and can make positioning of a paralyzed individual difficult. In this case, patient heard a snap in his left leg corresponding to fracture of heterotopic bone.

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QUIZ	ST	S713	Heterotopic bone formation near hips (with extraarticular fusion) and knees in paraplegic. Bone is always distal to the level of the neurologic injury and usually not distal to the knee..
QUIZ	ST	ST14	Prepatellar bursitis with marked soft tissue swelling anterior to the patella. This generally results from chronic recurrent trauma due to kneeling: bricklayers, carpetlayers, nuns. Also know as housemaid's knee.
QUIZ	ST	ST15	Myositis ossificans in the thigh, a common location. Bone has become attached to the femur.
QUIZ	ST	ST16	Soft tissue calcification in SLE. Scleroderma could look identical.
QUIZ	ST	ST17	Myositis ossificans in gluteus. Fell onto this area from a ladder 22 years previously. Has since had "popping" in his hip.
QUIZ	ST	ST18	Periostitis / ?osteomyelitis tibia and fibula in "skin popper". Note ulceration of overlying soft tissue.
QUIZ	ST	ST19	Myositis ossificans in thigh and buttocks. Favorite locations.
QUIZ	ST	ST20	Chronic venous stasis with reticular soft tissue ossification as well as periosteal reaction on fibula. Unrelated ossifications in plantar fascia.
QUIZ	ST	ST21	HPO: hypertrophic pulmonary osteoarthropathy. Widespread periosteal reaction in this case secondary to lung neoplasm. Hypertrophic Osteoarthropathy can also be seen with CF, Chronic lung fibrosis, Chronic infection, chronic liver disease, IBD, mesothelioma, etc.
QUIZ	ST	ST22	Hypertrophic osteoarthropathy in a 27 year old welder. Other causes of widespread periosteal reaction: pachydermoperiostosis, thyroid acropachy, chronic venous stasis (usually legs), hypervitaminosis A.

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QUIZ	ST	ST23	HPO with chronic interstitial lung disease. Note periosteal reaction on humerus on chest image. Also enlarged PA's due to pulmonary hypertension. Cardiomegaly.
QUIZ	ST	ST24	HPO due to lung cancer. Peripheral lesions have a higher association with HPO. Remember that many large muscles attach to the femur. You can have some areas of muscle attachment which look like "periosteal reaction" which are normal.
QUIZ	ST	ST25	Soft tissue calcification due to dermatomyositis.
QUIZ	ST	ST26	HPO secondary to chronic lung abscess.
QUIZ	TLSP	TLSP01	Sickle cell disease bone changes. "Lincoln log vertebrae". Sclerosis humeral heads.
QUIZ	TLSP	TLSP02	Sickle cell disease vertebral changes over time. In childhood growth arrest of central portion of vertebra occurs, resulting in central rectangular depression as the rest of the vertebra continues to grow taller (as opposed to smooth biconcave appearance of osteoporotic vertebrae).
QUIZ	TLSP	TLSP03	Deformity of L3 vertebra is called a limbus vertebra. It results from disc herniation between the body and the ring apophysis during childhood, separating off the apophysis (See normal child spine included to show apophysis). Herniations of disc material into the endplates are seen in T12-L3 and are called Schmorl's nodes.
QUIZ	TLSP	TLSP04	Aortic aneurysm. Often incidental findings are more important than the spine findings. Do not miss aneurysms, gallstones and renal stones.

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QUIZ	TLSP	TLSP05	Lung cancer metastatic to L-spine. Note "missing pedicle" L3 on right and possibly L4 on right. A "missing pedicle" is empirically more likely to be due to metastasis than myeloma.
QUIZ	TLSP	TLSP06	Ankylosing spondylitis. Fusion of SI joints. Straightening of anterior surfaces of vertebrae. Syndesmophytes.
QUIZ	TLSP	TLSP07	Reiter's syndrome. Asymmetrical paravertebral ossifications (wide-swinging bridging osteophytes). Asymmetric SI joint abnormalities. "Fuzzy" calcaneal spurs. Erosion calcaneus at site of retrocalcaneal bursa. Psoriatic arthritis could do the same things.
QUIZ	TLSP	TLSP08	Vacuum cleft vertebral body. This is a sign of avascular necrosis. It is seen in the center of a fractured vertebral body. The diagnostic usefulness of the sign is that it indicates that the fracture is unlikely to be a pathologic fracture due to metastasis. The vacuum cleft disc at L2-3 is a sign of degenerative disc disease. It is usually not present with infection.
QUIZ	TLSP	TLSP09	Osteoporosis. Vertical vertebral striations due to greater preservation of weight-bearing vertical trabeculae than horizontal trabeculae is a relatively early plain roentgenographic sign of osteoporosis.
QUIZ	TLSP	TLSP10	Hemangiomas of T12 and L1. Prominent vertical trabeculation. The appearance is distinctive on CT and MRI as well. Common in middle aged and elderly females. Present in 10% at autopsy. Most are asymptomatic but may cause symptoms by expansion or fracture.

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QUIZ	TLSP	TLSP11	Ankylosing spondylitis. Romanus lesion. Osteitis of corners of vertebral bodies. "Shiny corners". Straightening of contour of anterior edge of vertebral bodies.
QUIZ	TLSP	TLSP12	Ankylosing spondylitis. Straightening of anterior margins of vertebrae. "Shiny corners". Bilateral SI joint sclerosis and erosion.
QUIZ	TLSP	TLSP13	Ossification of posterior longitudinal ligament in lumbar region. (74% C-spine, 15 % T-spine and 10 % L-spine) Ossification acts like a space occupying lesion in the spinal canal. Underlying canal size is important. Symptoms of myelopathy or radiculopathy correlate with residual canal size. 50% association with D.I.S.H.. 2:1, M:F. Japanese.
QUIZ	TLSP	TLSP14	Calcified disc. One of the signs of degenerative disc disease (along with vacuum cleft disc and disc narrowing).
QUIZ	TLSP	TLSP15	Hake vertebrae. Real "fish vertebrae. The biconcave vertebral shape seen in osteoporosis reminded someone of the shape of a codfish vertebra. The market did not have any codfish.
QUIZ	TLSP	TLSP16	"Steroid spine". Some "codfish vertebra" deformities. Osteoporosis. Thick endplates probably result from healing of microfractures with exuberant callous and are distinctive for steroid excess.
QUIZ	TLSP	TLSP17	Scheuermann's disease. Multiple irregular end plates with anterior wedging of vertebrae leading to kyphosis. Probably defective end plates permit intravertebral disc herniations.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	TLSP	TLSP18	Degenerative arthritis and degenerative disc disease L-spine. Cholelithiasis. Always check for gallstones, renal stones and aneurysms.
QUIZ	TLSP	TLSP19	Severe degenerative changes in the facet joints-hypertrophic changes. Also D.I.S.H.-type osteophytes spine. Osteophytes bridging lower left SI joint.
QUIZ	TLSP	TLSP20	Sacroiliitis. Changes look like AS although this patient is said to be fine post surgery. Not infrequently patients with AS are operated upon for disc disease which is not really the cause of their pain.
QUIZ	TLSP	TLSP21	Paget,s disease with "picture frame" vertebrae in Lumbar spine. Widespread changes elsewhere including greatly enlarged skull.
QUIZ	TLSP	TLSP22	Unstable fusion: L2-S1 fusion with rods and screws. The appearance of a vacuum cleft in the L2-3 disc on the extension view is definitive proof of motion between L2 and L3 on flexion-extension--indicating fusion is not yet solid.
QUIZ	TLSP	TLSP23	Spinal fusion with some of the screws extending out the anterior side of the vertebral column. What do big red and the cava think about this?
QUIZ	TLSP	TLSP24	Spinal fusion with loose screws in L3. Radiolucent halos indicate loosening (and/or infection). This is confirmed by motion between screws and vertebra on the flexion-extension views. The flexion-extension views proove lack of fusion. The radiolucency alone does not prove lack of fusion, only that there was motion at some time.

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QUIZ	TLSP	TLSP25	Ankylosing spondylitis and ulcerative colitis. The arthritis which accompanies IBD is identical to ankylosing spondylitis. Note spine and SI joint fusion. Symmetrical narrowing of hip joint cartilage typical of inflammatory arthropathy.
QUIZ	TLSP	TLSP26	Scoliosis in patient with history of polio. Neuromuscular disorders tend to lead to long C-shaped curves. The gracile humeri would also be typical of a lack of muscle activity.
QUIZ	TLSP	TLSP27	"Congenital" scoliosis. This term is used to describe scoliosis caused by spinal anomalies such as hemivertebrae and bars. Hemivertebrae are associated with extra ribs which make finding them easier. Counting the ribs bilaterally is probably useful.
QUIZ	TLSP	TLSP28	"Limbus vertebra" L4. this results from herniation of a portion of the disc between the body and ring apophysis during childhood. The disc at that level is usually narrowed, as in this case.
QUIZ	TLSP	TLSP29	Multiple gallstones identified on L-spine exam. Sometimes the non-spine findings may be of the most significance (although gallstones may be asymptomatic in a large percentage of cases).
QUIZ	TLSP	TLSP30	"Vacuum cleft vertebral body" . Fracture of osteonecrotic vertebral body. Sign is best seen on extension views. It is usually not seen in pathologic fractures due to metastasis.

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QUIZ	TLSP	TLSP31	"Dog vertebrae". Individuals who do not spend much time in an upright, weight-bearing position tend to have vertebrae with increased ratio of height to width. Dogs too have dog vertebrae. Angulation of the femoral neck is another skeletal feature influenced by weight bearing.
QUIZ	TLSP	TLSP32	"Steroid spine." Biconcave vertebrae as seen in standard-issue osteoporosis with thick, fuzzy endplates due to healing of microfractures with hyperplastic callous do to steroids. No Arnold, not anabolic steroids.
QUIZ	TLSP	TLSP33	Ankylosing spondylitis. Squaring of anterior aspect of vertebrae. Syndesmophytes. Pelvis of this patient shows SI joint fusion and impressive enthesophytes. C-spine is fused with the facet joints fused.
QUIZ	TLSP	TLSP34	"Dog vertebrae". Abnormally tall vertebral bodies in an individual who did not spend much time in an upright, weight-bearing posture. Note also shunt tubing.
QUIZ	TLSP	TLSP35	Metastatic prostate cancer. Blastic and a few lytic metastases. This is the leading cause of blastic metastases in males. In a female, breast cancer would be likely. A lytic component to the metastases makes the danger of pathologic fracture greater (obviously).
QUIZ	TLSP	TLSP36	Paget's disease involving two thoracic vertebrae with sclerosis and "picture frame" appearance in the lower one. Enlargement of the bone may aid in the diagnosis of Paget's in some cases (versus metastasis).
QUIZ	TLSP	TLSP37	Charcot Spine with huge osteophytes. Note injection sites in buttocks for treatment of Syphilis with metallic compounds (neoursphenamine?). Ascending aorta aneurysm is also typical of syphilis.

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QUIZ	TLSP	TLSP38	Marfan syndrome with scoliosis and acetabular protrusion, both common in this disorder. "Dural ectasia", cardiac and aortic abnormalities are common.(Question: why might it be difficult to make radiologic diagnosis of frostbite in patient with Marfan's?)
QUIZ	TLSP	TLSP39	"Chance "fracture L4 in lap-belted passenger involved in head-on collision. Note distraction of posterior elements at this level.
QUIZ	TLSP	TLSP40	Myeloma with multiple vertebral fractures. Think of myeloma when osteoporosis seems to be excessive for age. Diffuse osteoporosis is one of the presentations.
QUIZ	TLSP	TLSP41	Tuberculosis RUL lung and spine. Note the extensive paraspinous mass. Except for lung infiltrate, neurofibromatosis might give similar ppearance on frontal CXR.
QUIZ	TLSP	TLSP42	Long "C"-shaped scoliosis in polio. This shape is typical of neuromuscular disorders. In contrast, the typical idiopathic curve is right thoracic, left lumbar "S" - shaped.
QUIZ	TLSP	TLSP43	Spondyloepiphyseal dysplasia tarda. Typical vertebral shape, disc calcifications. "X-linked", males only.
QUIZ	TLSP	TLSP44	Old, healed tuberculosis of the spine with kyphosis. Note that the orthopaedic surgeon has misnumbered the vertebrae. Trace the posterior elements anteriorly to avoid overlooking partially destroyed vertebrae.
QUIZ	TLSP	TLSP45	More "Missing" vertebrae. Posterior elements with no corresponding body.

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QUIZ	TLSP	TLSP46	"Missing vertebrae" T9 and T10 largely destroyed by metastatic breast cancer. If you notice an angular kyphosis trace the posterior elements anteriorly to be sure a corresponding body is present.
QUIZ	TLSP	TLSP47	Two relatively severe compression fractures. The local kyphosis should alert you to examine the spine in greater detail.
QUIZ	TLSP	TLSP48	Thoracoplasty done for treatment of tuberculosis long ago. Scoliosis is a well-known complication of thoracoplasty.
QUIZ	TLSP	TLSP49	"Cupid's bow" shape of vertebral end plates on frontal view. Also characteristic shape on lateral (posterior indentation): normal anatomic variant.
QUIZ	TLSP	TLSP50	Scoliosis and delayed bone age secondary to 6000cGy radiation treatment for Wilm's tumor. Osteochondromas may form in the radiation field also. Malignant tumors can also develop: it generally takes 6000cGy and latency is 5-30 years.
QUIZ	TLSP	TLSP51	Scoliosis as a complication of osteogenesis imperfecta.
QUIZ	TLSP	TLSP52	Scoliosis as a complication of osteogenesis imperfecta.
QUIZ	TLSP	TLSP53	Large thoracic spine osteophyte mimics mass on lateral chest. The facts that the density overlies the spine and occurs at the level of a disk and that other large osteophytes are present aid in the diagnosis. CT is diagnostic if necessary to exclude lung mass and identify the cause of the density.

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QUIZ	TLSP	TLSP54	"Missing vertebra" upper thoracic spine. Badly collapsed vertebral bodies can sometimes be overlooked (not by you, of course). Some people can't resist labeling vertebrae with numbers. If you do so and don't see the "missing" vertebra your error will be immortalized.
QUIZ	TLSP	TLSP55	AP view: In the lower cervical-upper thoracic region one sees the vertebral bodies rather than the posterior elements. PA view: in the same region one sees the posterior elements rather than the body. This effect results from thoracic kyphosis and the divergent x-ray beam.
QUIZ	TLSP	TLSP56	Gibbus deformity thoracic spine due to EG (Langerhans Cell Histiocytosis). There are also infiltrates and nodules in the lungs. Spine changes are much easier to see with MRI.
QUIZ	TLSP	TLSP57	Retroperitoneal air seen on L-spine study done for back and right hip pain. Patient was osteoporotic and a fracture was suspected (none found). CT showed air to come from rupture of diverticular abscess.
QUIZ	TLSP	TLSP58	"Straight back" syndrome. Can have spurious heart murmurs. As with pectus excavatum, can have infiltrate-like appearance in RML region on frontal view.
QUIZ	TLSP	TLSP59	Fibrous dysplasia involving ribs, spine, sternum, scapula and clavicle.
QUIZ	TLSP	TLSP60	Tuberculosis of thoracic spine. Kyphosis. Paraspinal mass. Pleural effusions.
QUIZ	TLSP	TLSP61	Osteopetrosis. "Sandwich" vertebrae.
QUIZ	TLSP	TLSP62	Neurofibromatosis with posterior vertebral scalloping. The scalloping if at multiple levels is usually due to "dural ectasia" which is also seen in Marfan syndrome and Ehlers-Danlos syndrome.

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QUIZ	TLSP	TLSP63	Renal osteodystrophy showing resorption of distal clavicles (hyperparathyroidism) and sclerosis of the the upper and lower margins of the vertebrae giving the "rugger jersey" appearance. Also present: cardiomegaly and pleural effusions.
QUIZ	TLSP	TLSP64	Spinal fusion with rods and screws. Vacuum cleft appears in disc on extention, showing that the fusion is not solid.(Your friend the vacuum cleft)
QUIZ	TLSP	TLSP65	Vacuum cleft vertebral body (sign of osteonecrosis with fracture) seen better on extension view. Your friend the vacuum cleft indicates that the pathologic fracture is likely not due to metastasis.
QUIZ	TLSP	TLSP66	Scheuermann's disease. Multiple irregular end plates with anterior wedging of vertebrae leading to kyphosis. Probably defective end plates permit intravertebral disc herniations.
QUIZ	TLSP	TLSP67	Findings associated with paraplegia. GSW with bullet fragments in and around L1 (causative). Fusion of SI joints (secondary to paraplegia).
QUIZ	T	T01	Fracture through mid talus with marked displacement. Later AVN proximal portion talus (sclerotic relative to distal portion). Know Hawkins' sign: subchondral radiolucent line due to osteoporosis excludes AVN.
QUIZ	T	T02	The "defensive wound": see Fargo. Also note that bullets often stop just beneath the skin on their way out due to the elasticity of the skin.
QUIZ	T	T03	"Rotary foot". Think about this next time you see someone permit a child anywhere near someone mowing a lawn. Eye injuries are even more likely.

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QUIZ	T	T04	Dynamic hip screw permitting impaction to occur during the healing process (as it was designed to do--hence dynamic). A rigid screw would either punch through the head or maintain distraction of the fragments.
QUIZ	T	T05	Dislocations of the bases of the 4th and 5th metacarpals with few small fracture fragments, best seen on lateral view.
QUIZ	T	T06	Post-traumatic AVN of the 2nd metatarsal head. Freiberg's disease. Usually in women--possibly related to high heel shoes.
QUIZ	T	T07	Salter III Fracture distal tibia--Juvenile Tillaux fracture. Caused by pull of anterior distal tibiofibular ligament during external rotation. Fracture line should definitely be reduced to less than 2 mm: hopefully anatomic.
QUIZ	T	T08	"Chance" fracture of L2. Near-impossible diagnosis on frontal, underexposed conventional image but well seen on CT reconstructions. Distraction injury to middle and posterior columns and compression anteriorly. Associated with lap seat belts.
QUIZ	T	T09	Monteggia fracture-dislocation of the elbow repaired with pins and wire suture (tension band wiring). Radial head is still subluxed anteriorly--should align perfectly with capitellum on any view. Note also careless drilling.
QUIZ	T	T10	Supracondylar fracture of the humerus demonstrating the time course of appearance of periosteal reaction. If you want to see periosteal reaction to confirm or exclude a fracture, wait at least ten days.
QUIZ	T	T11	Fracture calcaneus involving the calcaneocuboid joint. Large calcaneal spurs.

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QUIZ	T	T12	Fracture triquetrum. A bone fragment lying posterior to the carpal bones most often originates from the triquetrum
QUIZ	T	T13	Lytic lesion near tip of femoral component of hip prosthesis resulted from "particle disease". This resulted in fracture. The lesions can be asymptomatic until fracture: one reason for obtaining routine follow up images every two years.
QUIZ	T	T14	Fracture of hook of hamate on the right--that is why you do not see the ring shadow of the hook on the right.
QUIZ	T	T15	Lateral subluxation patella on sunrise view. Small fracture fragment medial patella due either to avulsion by medial retinaculum or impaction on femoral condyle. Partially healed fibrous cortical defect distal femur.
QUIZ	T	T16	Avulsion of lesser trochanter ossification center by iliopsoas tendon.
QUIZ	T	T17	Avulsion anterior superior iliac spine by sartorius.
QUIZ	T	T18	Fractures of distal tibia and fibula and multiple metaphyseal corner fractures suggest child abuse.
QUIZ	T	T19	"Surface replacement" type hip prosthesis was claimed to "preserve bone stock." Usually, however, AVN resulted and the head collapsed. A more modern variant of this has been reinvented. Its fate is yet unknown.
QUIZ	T	T20	The femoral head component is not concentric with the acetabular component. This usually indicates a problem. In this case, cement fragments in the joint blocked reduction of the head.

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QUIZ	T	T21	"Vacuum cleft vertebral body"--sign of osteonecrosis and fracture. Empirically, the fracture is unlikely to be due to metastasis if a vacuum cleft is present.
QUIZ	T	T22	Os odontoideum. Dens not fused to C2 body permitting subluxation C1 on C2. Note how spinolaminar line is markedly distorted at C1-2. Fusion often required.
QUIZ	T	T23	Heterotopic bone formation around THR is really only important when it limits range of motion as in this case. It will recur after surgery unless something is done: radiation therapy or treatment with NSAIDS are effective for prevention.
QUIZ	T	T24	Comminuted fracture mid tibia and plastic bowing deformity of the fibula. Note how the fibular deformity maintains the tibial angulation after casting, which is not desirable.
QUIZ	T	T25	Effect of swallowing on the thickness of the soft tissues anterior to the cervical spine. Sometimes just getting another image will get rid of worrisome soft tissue.
QUIZ	T	T26	Galeazzi fracture-dislocation. Fracture of distal radius and dislocation of distal radioulnar joint. Ricardo Galeazzi, 1934. Less common than Monteggia.
QUIZ	T	T27	Spina bifida occulta mimics sacral fracture. CT makes it easy, as usual.
QUIZ	T	T28	Avulsion of ischial tuberosity by hamstrings.

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QUIZ	T	T29	Myositis ossificans in the thigh, one of the most common places for this to occur. Note that the ossification can become attached to underlying bone. Identification of trabeculae distinguishes bone from soft tissue calcification and may help in differential diagnosis.
QUIZ	T	T30	Myositis ossificans demonstrating peripheral calcification-associated with "zonal phenomenon" - malignancies, in contrast, tend to calcify centrally first.
QUIZ	T	T31	Stress fracture of fibula. Patient had run 4 miles per day for seven years. Something must have changed: road surface, shoes, speed. History is the key to stress fracture diagnosis. Bone scan and MRI provide earlier imaging diagnosis.
QUIZ	T	T32	Rotary foot. Why children should be nowhere near the mower.
QUIZ	T	T33	"Carpe bossu " syndrome. Pain and swelling over the dorsum of the hand at the bases of the second and third metacarpals. Accessory ossicle at this location, the os styloideum (9th carpal bone), can be struck and injured, resulting in pain.
QUIZ	T	T34	Minimally displaced calcaneal fracture
QUIZ	T	T35	"Chance" fracture L-spine. Note the fracture of the superior aspect L3 pedicles on the frontal view and separation of L2 and L3 spinous processes on the lateral view. There was a neurologic deficit.
QUIZ	T	T36	"Clenched fist" view useful in demonstration of scapholunate ligament injury (increased separation of scaphoid and lunate).
QUIZ	T	T37	Myositis ossificans thigh following a football injury.

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QUIZ	T	T38	Dislocation of radial head since childhood. The proximal radius is posterolaterally subluxed and overgrown in length. Radial head not properly formed.
QUIZ	T	T39	Some complications of paraplegia due to GSW. Loss of cartilage in hip and SI joints (lack of motion decreases nutrition to cartilage). Laminated bladder calculus. Probable decubitus ulcer near left ischium.
QUIZ	T	T40	Insufficiency fracture femur. Right hip pain without history of trauma. Fracture not seen on conventional image prospectively, seen on MRI the next day.
QUIZ	T	T41	AVN 3rd metatarsal head.
QUIZ	T	T42	Nonunion scaphoid fracture with AVN proximal portion. DISI pattern of instability on lateral view.
QUIZ	T	T43	AVN capitellum bilaterally in renal transplant recipient receiving steroids. AVN of capitellum is Panter's Disease.
QUIZ	T	T44	Dorsal dislocation of 4th and 5th metacarpals with associated small fracture fragments.
QUIZ	T	T45	Left femoral neck stress fracture. Bone scan makes the diagnosis. Note faint sclerotic line on earlier radiographs. New bone formation is seen along the medial femoral neck on the final radiograph.
QUIZ	T	T46	Bilateral distal scaphoid fractures. This fracture location does not lead to AVN.
QUIZ	T	T47	Sacral fractures, easy on CT, difficult on plain image. However, note disruption of arcuate lines is visible on the plain image. These lines are useful in detection of fractures and lytic lesions.
QUIZ	T	T48	Scapholunate ligament injury with increased angle between axes of scaphoid and lunate on lateral and separation on frontal view. Also distal radius fracture with impaction.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	T	T49	Dislocation of patellar component of TKR
QUIZ	T	T50	Avulsion of ossification center for anterior inferior iliac spine by straight head of rectus femoris.
QUIZ	T	T51	Right scaphoid fracture occult on CR, shown on MRI. Triquetrum fracture and radial head fracture on left.
QUIZ	T	T52	Fracture second metacarpal head and dislocation of proximal phalanx index finger. Note "bare" metacarpal head on lateral view.
QUIZ	T	T53	Monteggia fracture-dislocation. Fracture proximal ulna and dislocation of radial head. In this case anterior subluxation of radial head, the most common direction.
QUIZ	T	T54	Even while at fracture clinic for followup visit for his GSW Lemar liked to be able to keep in touch with other members of the organization.
QUIZ	T	T55	Radial head fracture. Positive "fat pad" sign. Fracture best seen on radial head-capitellum view. Bone scan shows increased radionuclide uptake at fracture site.
QUIZ	T	T56	Healing fractures fibula and talus. AVN of talar dome which fails to become osteoporotic like the surrounding bones.
QUIZ	T	T57	Scapula fracture, much better seen on "Y" view. "One view is no view."
QUIZ	T	T58	Scapholunate ligament injury with increased distance between scaphoid and lunate on frontal view.
QUIZ	T	T59	Dislocation of left proximal fibula in waterskiing accident. You can also do this by riding your horse too near a gatepost.
QUIZ	T	T60	Dislocation of left sternoclavicular joint. Lordotic view can help differentiate anterior from posterior dislocation. Posterior is more serious due to potential for damage to great vessels.

LAST NAME	FIRST NAME	ACC#	COMMENTS
QUIZ	T	T61	Comminuted fracture proximal humerus involving surgical neck and greater tuberosity. Fluid-fluid level in joint and inferior subluxation of humeral head due to lipohemarthrosis.
QUIZ	T	T62	Healing stress fracture proximal tibia in runner. DDX: osteoid osteoma, chronic sclerosing osteomyelitis.
QUIZ	T	T63	Buckle fracture distal radius. Follow up exam shows sclerosis due to healing (confirming the fracture, if there was any doubt).
QUIZ	T	T64	Femoral neck fracture on MRI.
QUIZ	T	T65	Os odontoideum. Dens not fused to C2 body permitting subluxation C1 on C2. Note how spinolaminar line is markedly distorted at C1-2. The pointed top of the C2 body and large distance to the rounded fragment of odontoid above indicate this is more likely a real os odontoideum rather than an ununited dens fracture.
QUIZ	T	T66	Fracture of scapula and ribs. Scapula fractures usually result from direct trauma, so check the nearby ribs for additional fractures.
QUIZ	T	T67	Monteggia fracture-dislocation. Fracture ulna and dislocation radial head. Notice that a line along the axis of the proximal radius does not pass through the center of the ossification center for the capitellum as it should.
QUIZ	T	T68	Arrow points to os styloideum between the bases of the second and third metacarpals. This can be struck during trauma to the dorsum of the hand and become painful. "Carpe bossu" syndrome.
QUIZ	T	T69	Impressive heterotopic bone formation following posterior dislocation of the hip. What nerve is at risk with posterior dislocation? (Or, for that matter, while doing SI joint injection).

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QUIZ	T	T70	Transverse fracture of medial malleolus and oblique fracture fibula. Small posterior lip tibia fracture. Fracture probably caused by pronation-external rotation injury.
QUIZ	T	T71	Hip prostheses with some wear, right more than left, and minimal "particle disease". 5 month intrauterine gestation.
QUIZ	T	T72	Anterior dislocation of talus and Salter I fracture distal fibula.
QUIZ	T	T73	Stress views showing serious deficiency of the lateral ligaments on the image labeled "G." In cases with less obvious abnormality, comparison with the opposite side helps as there is a range of normal.
QUIZ	T	T74	Femur fracture in near-anatomic alignment on this single view. Note bone resorption (focally on the entry side) around the anchor screws for the external fixation device. This indicates pin tract infection.
QUIZ	T	T75	Fracture-dislocation of thoracic spine secondary to electric shock and fall.
QUIZ	T	T76	Subtle fracture right distal radius (left for comparison). Cortical contours should not have any kinks.
QUIZ	T	T77	One of the rare cases where it is not abnormal for the femoral head to be asymmetrically placed within the acetabulum. This prosthesis was designed with extra HDPE in the area which wears the most.
QUIZ	T	T78	Osteochondral fracture articular surface of patella with fragment medially in suprapatellar bursa. Patellar defect best seen on the "sunrise" view.
QUIZ	T	T79	Hill-Sachs Deformity of humeral head following anterior dislocation. Note that the internal rotation view superficially looks somewhat like an external rotation view.

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QUIZ	T	T80	Left sacral fracture in lady who fell from a bike. Note the deformity of the neural foramina permitting the diagnosis on the plain roentgenogram.
QUIZ	T	T81	LisFranc fracture-dislocation on the right. Note how the bases of the metatarsals do not align with the cuneiforms and cuboid on the right in contrast to the normal left side. Practice is to reduce this fracture to anatomic alignment with internal fixation.
QUIZ	T	T82	Acute plastic bowing deformities generally occur in children, most commonly in the radius/ulna and tibia/fibula. Histologically, microfractures are seen on the concave side. On follow up images one sees periosteal new bone formation.
QUIZ	T	T83	Kohler's disease. Osteonecrosis of the tarsal navicular. There are normal variants of ossification which can have a similar appearance. Patients have limping and pain and warmth in the region. A normal radiographic appearance may be restored in 3 months to 4 years.