

Arthritis

Degenerative (DJD = OA)

Distribution	DIP, PIP, First CMC, Hips, Knees, Spine, First MTP. Sparing: MCP, Wrist, Elbow, Shoulder, Ankles
Primary	Age + mechanical force on normal bone = cartilage loss
Secondary	Underlying abnormal cartilage = CPPD, Trauma, Inflammatory Arthropathy, Hemochromatosis, DDH, Osteonecrosis, Loose Bodies
Radiographic	Assymetric joint space narrowing, subchondral sclerosis, subchondral cysts, Osteophytes, <i>NO OSTEOPOROSIS</i> .

Erosive OA

Radiographically	Erosive changes ("gull-wing") in OA distribution. Involvement of the 1st CMC helps differentiate from RA.
Demographics	Middle Aged Women

Inflammatory Arthritis

Autoimmune

RA	Diffuse Symmetric Joint Space Narrowing with Marginal Erosions (bare areas = capsular insertion sites), Periarticular Osteopenia and ST swelling, ulnar subluxation, Subchondral cysts, no osteophytes.
Distribution	Hands (2nd, 3rd MCPs, ulnar styloid erosion, subluxations); Shoulder (distal clavicle, rotator cuff tear, marginal erosions = hatchet deformity); Hips (concentric joint space narrowing, protrusion, secondary OA); Spine (odontoid erosion, atlanto-axial subluxation, apophyseal erosions); Feet (4th & 5th MTPs)
Scleroderma	Soft tissue calcification, Acroosteolysis, ST atrophy, erosions at DIP/PIP
SLE	Nonerosive arthritis (90%) = ligamentous laxity -> joint deformity in RA distribution.
Dermatomyositis	Widespread soft tissue calcification.

Seronegative

AS	SI joints = initial site (Bilateral, Symmetric erosions -> sclerosis -> ankylosis); Spine (squaring, shining corner {osteitis}, syndesomophytes {calcification of the annulus fibrosus}, bamboo spine); Hips>Shoulder (erosions, osteophytes)
Reiter Syndrome	Feet>>Hands (MTP [erosions]>calcaneus[enthesophytes, retrocalcaneal bursitis]>ankle>knee, +periostitis and periosteal new bone); SI joints (bilateral, assymetric); Spine (bulky thoracolumbar osteophytes).
Psoriasis	<i>Skin changes precede bone - 90%</i> . Productive and erosive change. Classic: Ivory Phalanx . Asymmetric oligoarthritis (DIP and PIP of hands - pencil in cup and acroosteolysis, severe joint space narrowing, soft tissue swelling= sausage digit). <i>Arthritis Mutilans</i> . Asymmetric spondylarthopathy of SI joints and spine (identical to Reiter's with assymetric bulky osteophytes).
Enteropathic (IBD)	SI joints identical to AS. Feet - similar to Reiters

Metabolic Arthritis

Gout	Over production (primary vs. secondary) or Underexcretion (renal failure) of uric acid. Lower extremities>upper. Small joints>large. 1st MTP is most common = podagra. Marginal, pararticular erosions with overhanging edges - sclerotic borders . Joint space preservation . Juxtaarticular soft tissue topi and Bursa definition with bursitis +/- calcification (50%) . Chondrocalcinosis.
CPPD	Intraarticular deposition -> chondrocalcinosis (hyaline and fibrocartilage, synovium, tendons, and ligaments) + DJD pattern in atypical joints: Patellofemoral, radiocarpal , second and third MCP . +Subchondral Cysts. " Hook Osteophytes " Associations: HPTH, Gout, Hemochromatosis.
Basic Calcium Phosphate	Not an arthropathy. Periarticular ST Calcium deposition -> inflammation without structural joint change.
Hemochromatosis	Iron or CPPD deposition. Similar pattern to CPPD. (+) Hook Osteophytes . Distinctive features: beakline osteophytes on MCP heads, generalized osteoporosis .
Wilson's	Copper deposition. Similar pattern to CPPD. (+) Hook Osteophytes . Distinctive features: subchondral fragmentation , generalized osteoporosis .
Ochronosis (Alkaptonuria)	Dystrophic calcification, osteoporosis, OA.
Amyloidosis	Nodular synovitis with erosions, preservation of joint space. Wrists, elbows, shoulders, hips.
Hemophilia	70% Monoarticular: Knee>elbow>ankle>hip>shoulder. Hemarthrosis -> periarticular osteoporosis . Chronically -> epiphyseal overgrowth , subchondral cyst, secondary OA. Classic : Widened intercondylar notch, square patella, similar appearance to JRA, enlarged radial head.

Infectious Arthritis

Organisms	Staphylococcus aureus (#1), B-Strep (infants), Hemophilus (pre-schoolers), Gram negative (DM, Etoh) , Gonococcal (sexually active youth), Salmonella (SSDz - Staph still #1), TB , Fungal (immunocompromised), Viral (kids), Lyme Dz.
Radiographic	Joint effusion. Periarticular osteoporosis, Periosteal reaction (benign -> aggressive), Bone destruction (multiple patterns), Local Cortical thickening, Ground Glass, Increased density, Sequestrum, Disk space narrowing with endplate erosion.

Neuropathic Arthritis

Etiologies	DM (foot), Tabes Dorsalis (knee), Syngomyelia (shoulder), Other
Radiographic	Joint instability. Joint effusion. 3 Types: (1) Hypertrophic change (20%) = fragmentation of articular bone + bony reaction. (2) Atrophic type (40%) = bone resorption of articular portion. (3) Combined type (40%)

New Bone formation

Psoriasis	Periosteal
Reiter's	Periosteal
OA	Osteophytes
CPPD	Osteophytes

Periarticular Osteopenia

RA	
Scleroderma	
Hemophilia	
Infection	

Calcifications

Scleroderma	Periarticular
SLE (Rarely)	Periarticular
CPPD	Articular
Chondrocalcinosis	Articular
Neuropathic	Joint space related
Synovial Osteochondromatosis	Joint space related
Fracture/OCD	Joint space related

Distribution

OA	Distal (DIP, PIP)	
Psoriasis	Distal (DIP, PIP)	
Reiters	Distal (DIP, PIP)	
RA	Proximal (MCP, Carpus)	Ulnar Styloid, Distal Clavicles
CPPD	Proximal (MCP, Carpus)	
Hemochromatosis/Wilson's	Proximal (MCP, Carpus)	

Soft Tissue Swelling

RA	Symmetric Bilateral
AS, Psoriasis, Reiters	Symmetric Bilateral
Psoriasis	Asymmetric of one digit
Reiters	Asymmetric of one digit
Gout	Lumpy-bumpy
Amyloid, Sarcoid	Lumpy-bumpy