

Checklists for Hand Pain

Imaging Findings	Cause
Bone Abnormalities	
Discontinuous cortex and displaced bone fragment on XR, CT and MR; abnormal SI on MR	Fracture of the phalanges or metacarpals
Focal lucency on XR and CT; reparative new bone/periostitis on XR, CT, and MR; abnormal SI on MR	Stress fracture
Destroyed bone cortex, absent trabeculae, associated soft tissue mass on XR, CT, and MR; increased (with blastic) versus decreased (with lytic) bone density on XR, CT; abnormal bone marrow SI with MR	Primary and metastatic bone tumors
Ulnar minus variant on XR, CT, and MR; dense lunate on XR, CT; small lunate XR, CT, and MR; abnormal SI on MR	Avascular necrosis of the lunate (Keinbock's)
Displaced fragment of bone at the insertion of the extensor tendon	Mallet finger
Articular Abnormalities (CMC, MCP, IP)	
Displaced bones on XR, CT, and MR; associated fracture (see above); accompanying ligament or tendon tear (see below)	Dislocation of the CMC, MCP, PIP, or DIP joints
Osteophytes, joint space loss, joint subluxation, subchondral marrow change including cysts on XR, CT, and MR. DIP and PIP >> MCP	Osteoarthritis
Deminerlization on XR and CT; erosions and joint space loss on XR, CT, and MR; abnormal SI on MR	Rheumatoid arthritis
Calcifications within the soft tissues and chondrocalcinosis on XR and CT; corticated non-marginal erosions with "overhanging edges" on XR, CT, and MR; secondary degenerative changes	Crystal arthropathy (gout, CPPD)
Periostitis; changes resembling rheumatoid arthritis when inflammatory.	Psoriatic arthritis
Mono-articular effusion and erosion.	Septic arthritis
Juxta-articular Abnormalities	
Radio-opaque foreign bodies (metal, rocks, glass) are dense on XR and CT whereas wood splinters are of similar density to soft tissue and thus difficult to see. Foreign bodies (including wood) may be echogenic and shadow-casting on US. MR characteristics depend on the structure of the foreign body: there may be a signal void (calcium, non-ferromagnetic metals, glass, wood) or artifact (ferromagnetic material)	Retained foreign body
(Usually not done.) Flexion of the ulnar sided fingers on XR, CT, and MR	Dupuytren's contracture
(Usually not done.) Reactive changes along the radial cortex on XR, CT, and MR; thick irregular tendons on MR	De Quervain's tenosynovitis
Indirect signs (e.g. widening of the scapho-lunate interval) with XR, CT, and MR; swelling and discontinuity of the tendon or ligament on US and MR	Ligament and tendon tears
Swelling on XR and CT; discontinuity of the tendon or ligament or abnormal SI	Torn tendon or

on MR	ligament
(Usually not done.) Swelling and abnormal SI of the nerve on MR	Carpal tunnel syndrome / median neuropathy
(Usually not done.) Deformed Guyon canal from prior trauma on CT or MR	Ulnar neuropathy
Soft tissue swelling on XR, CT, and MR; fluid in the tendon sheaths and abnormal tendon signal on MR	Tenosynovitis
(Usually not done.) Soft tissue mass on XR, CT, and MR	Ganglion/tendon cyst
Demineralization on XR and CT; abnormal marrow SI on MR; diffuse abnormal uptake on nuclear medicine bone scan	Complex regional pain syndrome
(Usually not done.) Normal on XR, CT; normal or possibly increased SI of the tendon on MR	Trigger finger

DICTIONARY TEMPLATE WITH PROMPTS FOR HAND RADIOGRAPHS PERFORMED FOR HAND PAIN

HAND RADIOGRAPHS

INDICATION: Hand pain.

COMPARISON: [Check priors to see if following a known lesion.]

TECHNIQUE: [].

Bones: [Discontinuous bone cortex or displaced bone fragment (fracture). Periostitis (stress fracture, infection, psoriatic arthritis). Erosion (infection, inflammatory arthropathy). Osteophytes or subchondral cysts (osteoarthritis). Peri-articular lucency (inflammatory arthropathy, complex regional pain syndrome, disuse osteoporosis). Destroyed bone cortex, absent trabeculae, with or without associated soft tissue mass (primary and metastatic bone tumors). Ulnar minus variant with abnormal density of the lunate (avascular necrosis of the lunate).]

Joints: [Dislocation with or without associated fracture. Osteophytes, joint space loss, joint subluxation, subchondral cysts and/or sclerosis (osteoarthritis). Demineralization, erosions, and loss of joint space (rheumatoid arthritis, psoriatic arthritis). Chondrocalcinosis or synovial calcifications (crystal arthropathy). Mono-articular effusion and erosion (septic arthritis).]

Juxta-articular tissues: [Foreign body. Flexion of ulnar sided fingers (Dupuytren's contracture). Widened scapho-lunate interval (laxity or discontinuity of the interosseous ligament). Soft tissue swelling (tenosynovitis, ganglion or tendon cyst).]

IMPRESSION: []

DICTIONARY TEMPLATE WITH PROMPTS FOR HAND MRI PERFORMED FOR HAND PAIN

MRI HAND

INDICATION: Hand pain.

COMPARISON STUDIES: [Check priors to see if following a known lesion.]

TECHNIQUE: []

FINDINGS:

Bones: [Discontinuity of bone cortex (fracture, tumor, inflammation, or infection). Erosion (inflammatory arthropathy, infection). Increased signal on T2 weighted images (contusion, fracture, tumor, infection, avascular necrosis). Diffuse abnormal signal intensity (complex regional pain syndrome).]

Articulations: [Cartilage loss (arthritis). Effusion (arthritis, trauma, infection).]

Juxta-articular tissues: [Focal fluid signal intensity collection (ganglion).]

Ligaments: [Normal radial and ulnar collateral ligaments. Displacement of the deep aponeurosis along the thumb UCL.

Tendons: [Abnormal intrinsic signal or swelling (partial thickness tendon tear). Discontinuity (full thickness tendon tear). Excessive fluid in the tendon sheath (tenosynovitis). Adjacent fluid-filled pocket (tendon cyst).

Nerves: Swelling [(neuritis). Extrinsic compression.]

IMPRESSION: []