Is it really Rheumatology? – Shoulder, back and hand clinical pearls

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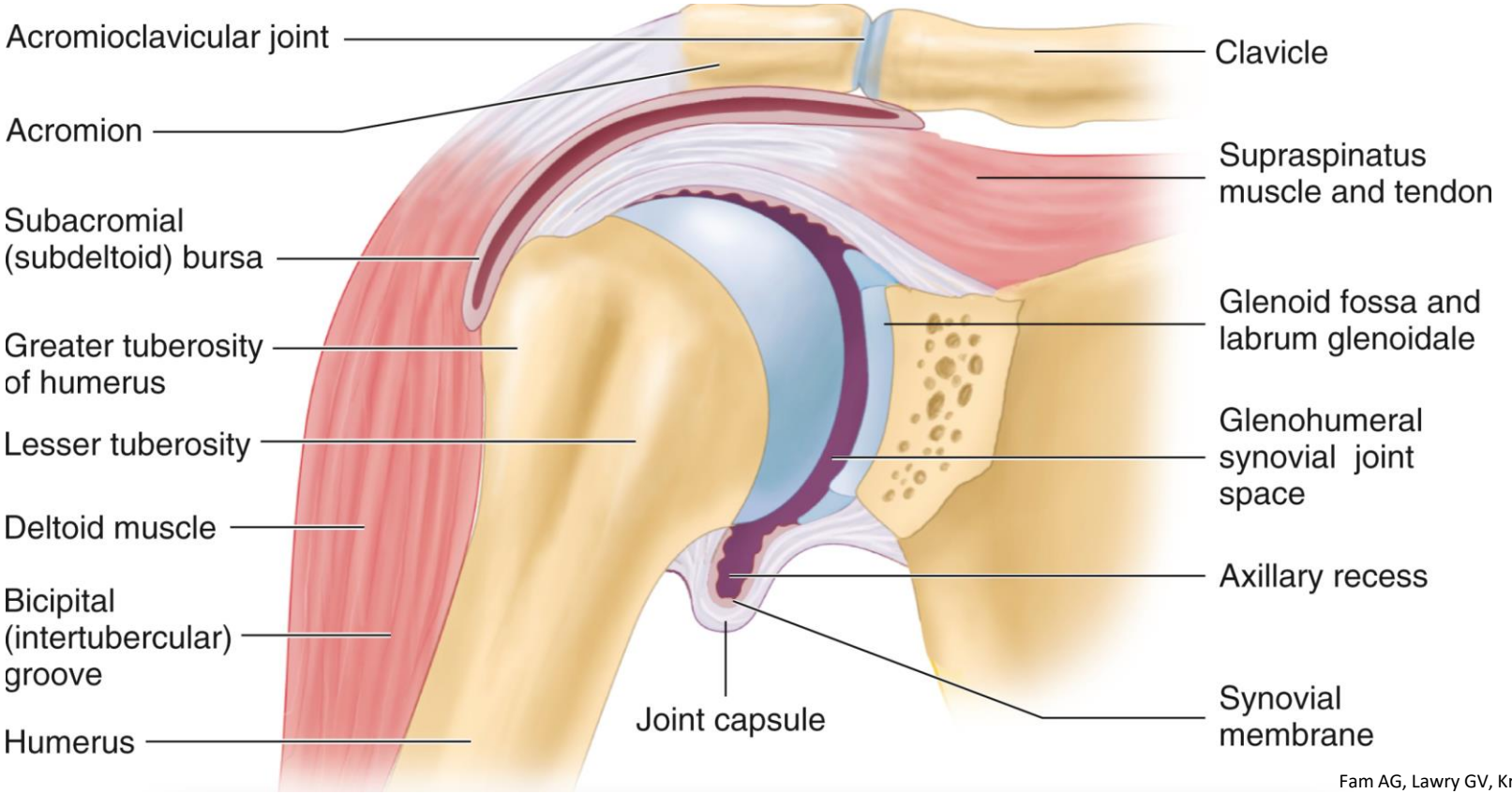
Shoulder Pain

- Shoulder pain is a common presenting complaint
- Accounted for 1.2% of all GP presentations in 2015-16 [1]
- The shoulder joint is a complex joint and is dependent on multiple structures for stability
- Multiple structures may produce pain, including:
  - Articular structures
  - Periarticular structures
  - Neurological lesions
  - Referred and other causes

Shoulder Anatomy



Fam AG, Lawry GV, Kreder HJ, Hawker G, Jerome D. Fam's Musculoskeletal Examination and Joint Injection Techniques E-Book. (2nd Edition). [Insert Publisher Location]: Elsevier - OHCE; 2014.

Differential Diagnosis Shoulder pain [2]

Articular Causes
Glenohumeral Joint and Acromioclavicular Joint Arthritis – OA, RA, PsA, trauma, infection, crystal (e.g Gout, CPPD)
Ligamentous/labral lesions
GH and ACJ instability
Fracture, ON, infection, neoplasm

Differential Diagnosis Shoulder Pain [2]

Periarticular Causes
Impingement and rotator cuff tendinitis
Bicipital tendinitis
Rotator cuff and long biceps tendon tears
Subacromial bursitis
Adhesive capsulitis

Differential Diagnosis Shoulder Pain [2]

Referred and other causes
Angina
Diaphragmatic and infradiaphragmatic disorders – pericarditis, pleuritis, gallbladder disease, subphrenic abscess
Axillary artery/vein thrombosis
Polymyalgia Rheumatica
Myositis
Fibromyalgia

Key Features on History

- Is there a history of Trauma?
  - Consider fracture, GHJ/SCJ subluxation, ACJ sprain etc.
- What is the onset?
  - Acute unilateral onset in absence of trauma raises risk of septic joint or crystal arthropathy
- Is there nocturnal pain?
  - Consider adhesive capsulitis
- Is the pain anterolateral/worse when lying on affected side?
  - Suggestive of subacromial bursitis/supraspinatus tendinopathy
  - Consider rotator cuff tear

Key Features on History

- Early morning stiffness
  - >30-45 minutes of EMS suggests an inflammatory process, including:
    - RA, peripheral spondyloarthropathy
    - Adhesive Capsulitis
    - Polymyalgia Rheumatica – critical for diagnosis
  - <30-45 mins early morning stiffness suggests non-inflammatory pathology
- Are other joints affected?
  - Other small joint swelling and pain suggests concomitant inflammatory arthritis i.e. RA or PsA
- Is/are the other shoulder/hips affected?
  - Bilateral shoulder and or hip involvement, associated with EMS suggestive of PMR in patients >50yo

Key features on history

- Is the pain posterior/associated with trap/neck?
  - Suggests referred pain from c-spine
- Is the pain localised to scapula/neck with upper limb radiation?
  - Suggestive of radiculopathy
  - Esp. if paraesthesia in hand
- Is diffuse pain worse at end of day or with use?
  - Suggestive of GHJ OA

Key Examination Features

- Inspect for swelling of GHJ/SCJ/ACJ
  - Suggestive of synovitis in these joints
- Palpate for tenderness in GHJ/SCJ/ACJ
  - Diffuse tenderness may suggest GHJ arthritis or capsulitis
- Palpate Bicipital Groove/Supraspinatus Tendon
  - Suggestive of tendinopathy

Key Examination Features

- Assess for range of motion
  - Pain with reduced RoM on active and passive movement suggestive of intrinsic GHJ arthritis
    - Includes OA, Inflammatory arthritis or Adhesive Capsulitis
  - Pain on active movement only suggests tendinopathy
- Painful arc (between 60-120°) of abduction is suggestive of subacromial impingement
  - Rotator cuff tendinitis or subacromial bursitis.

Special Tests

Table 2-2

SENSITIVITY AND SPECIFICITY OF COMMON SPECIAL TESTS OF THE SHOULDER

Special Test	Sensitivity (%)	Specificity (%)	N	Reference
Neer impingement sign	86	49	552	Park et al., 2005
Hawkins impingement sign	76	45	552	Park et al., 2005
Jobe sign, empty can sign	53	82	552	Park et al., 2005
Lift-off test	17	92	68	Barth et al., 2006
Belly press test	40	98	68	Barth et al., 2006
Yergeson sign	13	94	132	Parentis et al., 2006
Speed test	40	75	552	Park et al., 2005
O'Brien test	63	50	132	Parentis et al., 2006
Crank test	13	83	132	Parentis et al., 2006
Anterior apprehension test	72	96	363	Farber et al., 2006
Relocation test	81	92	363	Farber et al., 2006

- Fam AG, Lawry GV, Kreder HJ, Hawker G, Jerome D. Fam's Musculoskeletal Examination and Joint Injection Techniques E-Book. (2nd Edition). [Insert Publisher Location]: Elsevier - OHCE; 2014.

Special Tests I do Routinely

- Hawkins/Kennedy (impingement)
- Empty Can (Supraspinatus tendinopathy/impingement)
- Resisted external rotation (Infraspinatus)
- Lift-off test (Subscapularis)

Notes on PMR

- Essentially all patients have elevated CRP
  - ESR can be misleading as reference ranges not adjusted for age:
    - Male UL = Age/2
    - Female UL = (Age/2)+10
  - Other Diagnoses **much more likely** if CRP is normal
- Bilateral involvement of hips/shoulders required
- Early morning stiffness >45 mins required (<30 mins more suggestive of OA)
- If starting prednisolone – 15mg is standard starting dose
  - Lack of response to 15mg prednisolone should prompt consideration of other diagnoses
- Question for GCA symptoms -> if present discuss with Rheumatologist urgently (same day)

Hand Pain

- Hand pain or stiffness is a common presentation in primary care and cause of referral to rheumatology.
- Generally, most important to differentiate between inflammatory and non-inflammatory causes.

DDx Hand Pain

- Non-inflammatory – Osteoarthritis
- Inflammatory:
  - Rheumatoid arthritis
  - Psoriatic Arthritis/peripheral SpA
  - CTD related arthritis – SLE/MCTD/Scleroderma
  - Crystal arthropathy – CPPD/Gout
- Neurologic:
  - Nerve entrapment
- Vascular:
  - Raynaud’s phenomenon

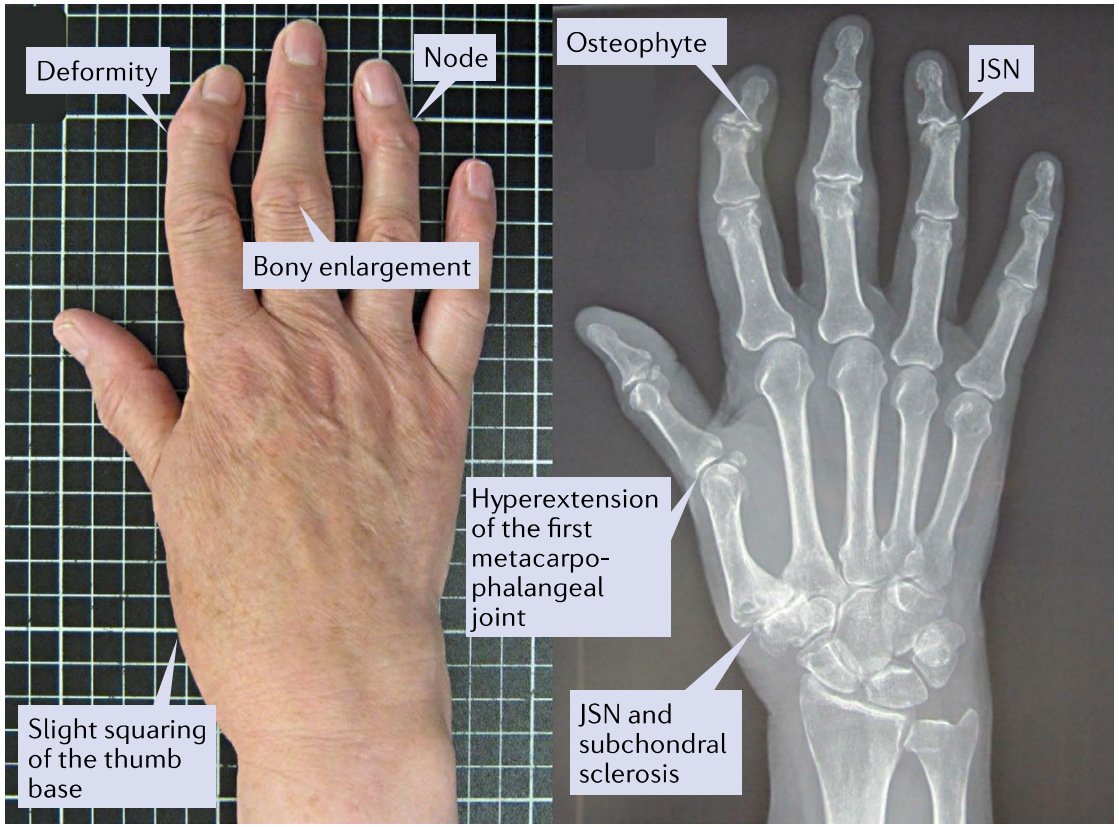
History

- What joints are involved?
  - DIPJ are never involved in RA
    - Should consider either OA or PsA
  - Is the 1st CMCJ most affected? – suggestive of OA
- Is there Early Morning Stiffness?
  - >30-45mins – suggests inflammatory cause?
- Is the pain worse after use/at the end of the day?
  - Suggestive of OA
- Are there acute, recurrent episodes?
  - May be suggestive of crystal arthropathy

Assessing for synovitis

- Synovitis presents as often tender, diffuse, boggy swelling, with or without warmth
- Effusion may also be present
- Bony swelling in OA (i.e. Heberden/bouchard's nodes) may be tender, but will not exhibit bogginess
  - Swelling will be (esp in DIPJ) nodular, as opposed to diffuse
- Palpating the joints in two planes allows for detection of effusion by ballooning

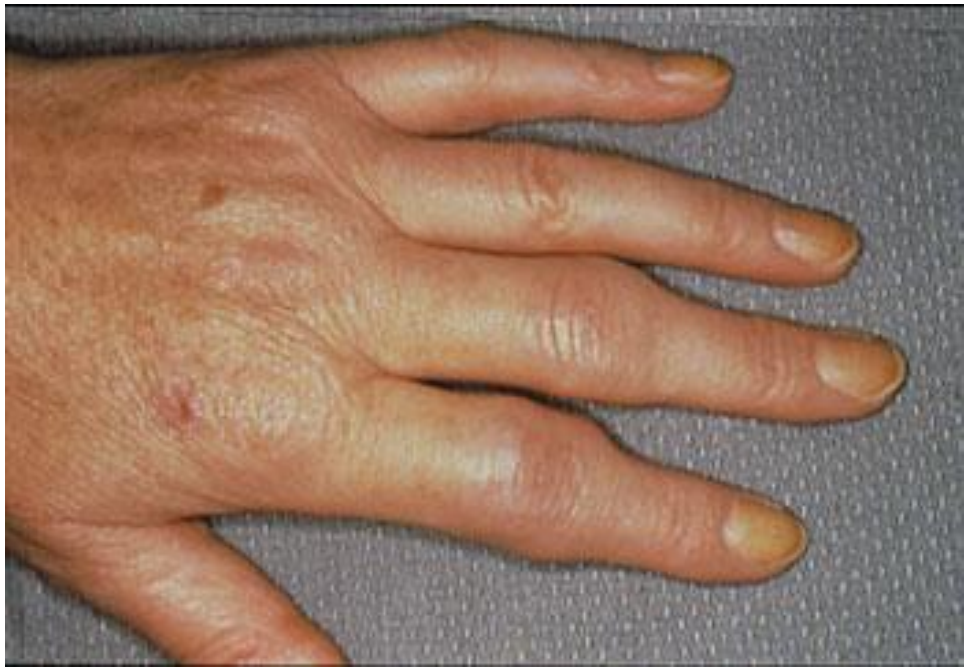
Osteoarthritis



- Clinical features include:
  - Bouchard/Heberden's nodes (PIPJ/DIPJ)
  - Squaring of the base of the thumb
  - Can have deformity (particularly of DIPJ) – Ulnar Drift
  - 1st CMPJ tenderness
  - May have reduced RoM of joints with time – difficulty making fist
  - Generally slowly progressive deformity and loss of function

Marshall, M., Watt, F. E., Vincent, T. L., & Dziedzic, K. (2018). Hand osteoarthritis: clinical phenotypes, molecular mechanisms and disease management. Nature Reviews. Rheumatology, 14(11), 641–656. https://doi.org/10.1038/s41584-018-0095-4

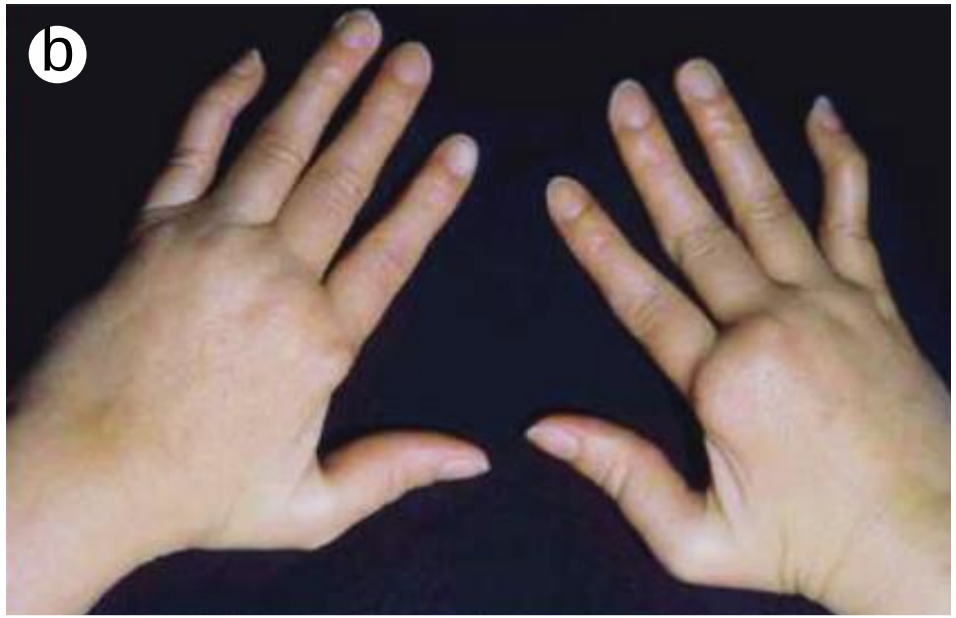
Rheumatoid Arthritis



https://www.hopkinsarthritis.org/arthritis-info/rheumatoid-arthritis/ra-symptoms/

- In early disease, generally symmetrical, small joint arthritis
  - Affects MPCJ, PIPJ
- Deformity will be absent in early disease, as will erosions on plain films

Rheumatoid Arthritis



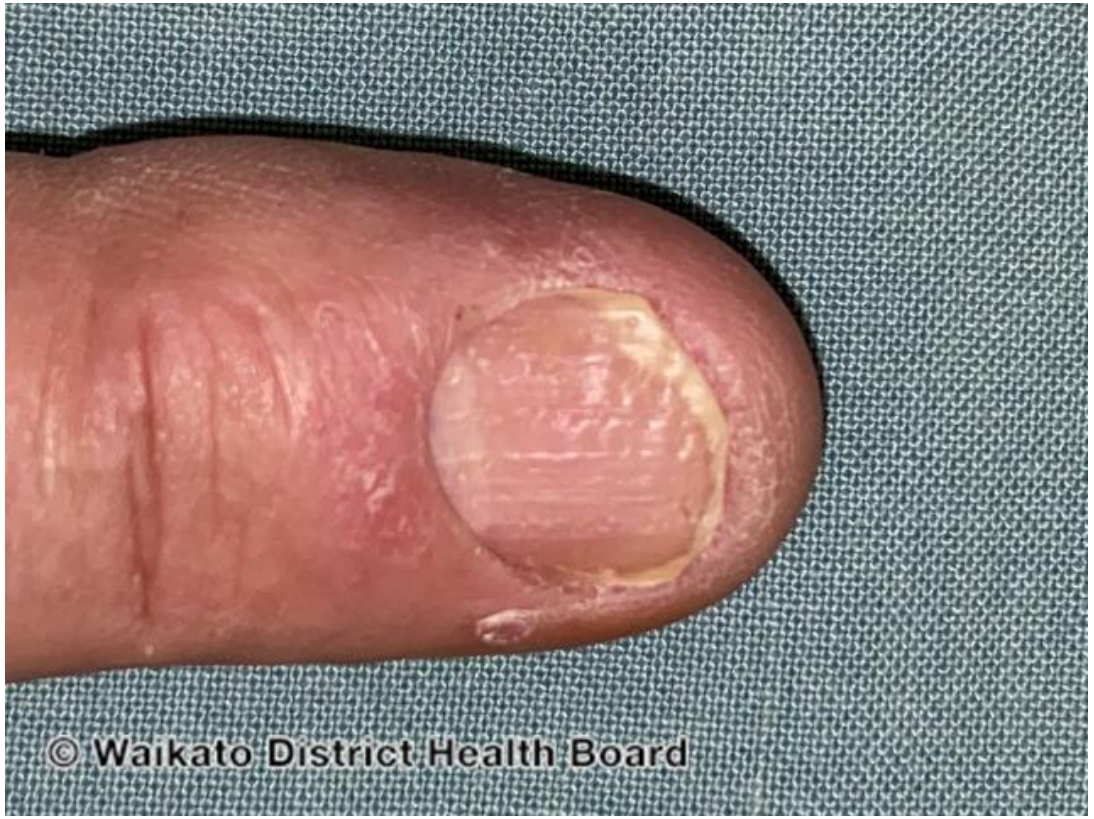
- Patients with advanced disease will present with:
  - Ulnar deviation
  - Volar subluxation
  - Z-thumb deformity
  - Swan-neck deformity
- Aim of treatment is to prevent these changes, early referral critical for commencement of appropriate DMARDs

Smolen, J., Aletaha, D., Barton, A. *et al.* Rheumatoid arthritis. *Nat Rev Dis Primers* **4**, 18001 (2018). https://doi.org/10.1038/nrdp.2018.1

Psoriatic Arthritis

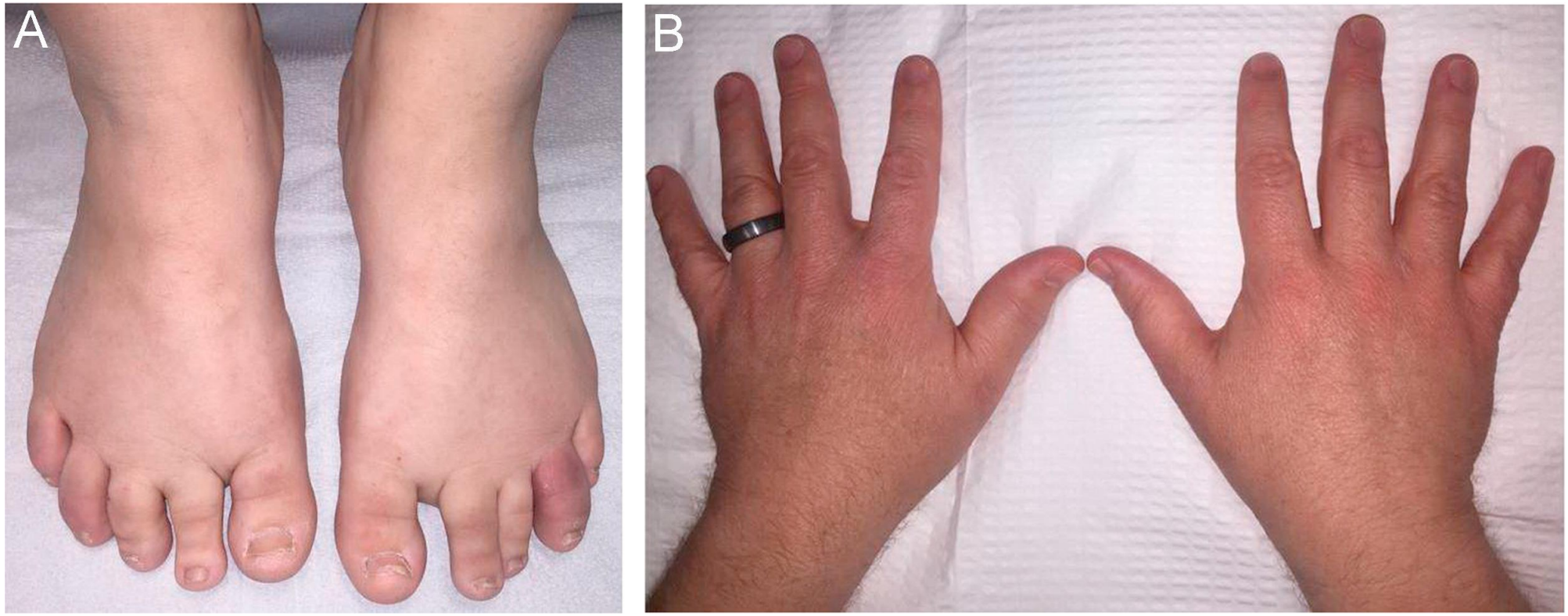
- Any joints in the hand may be affected, including DIPJs
- May demonstrate dactylitis – aka sausage digits
- Psoriatic nail changes increase the likelihood of psoriatic arthritis
- May have ‘telescoping’ of digits in late stages – arthritis mutilans
- Patients do not have to have psoriasis to have psoriatic arthritis – ask about family history of PsO
- Patients may also demonstrate enthesitis – check for achilles swelling/tenderness

Psoriatic Nail Changes



https://dermnetnz.org/topics/nail-psoriasis

Dactylitis

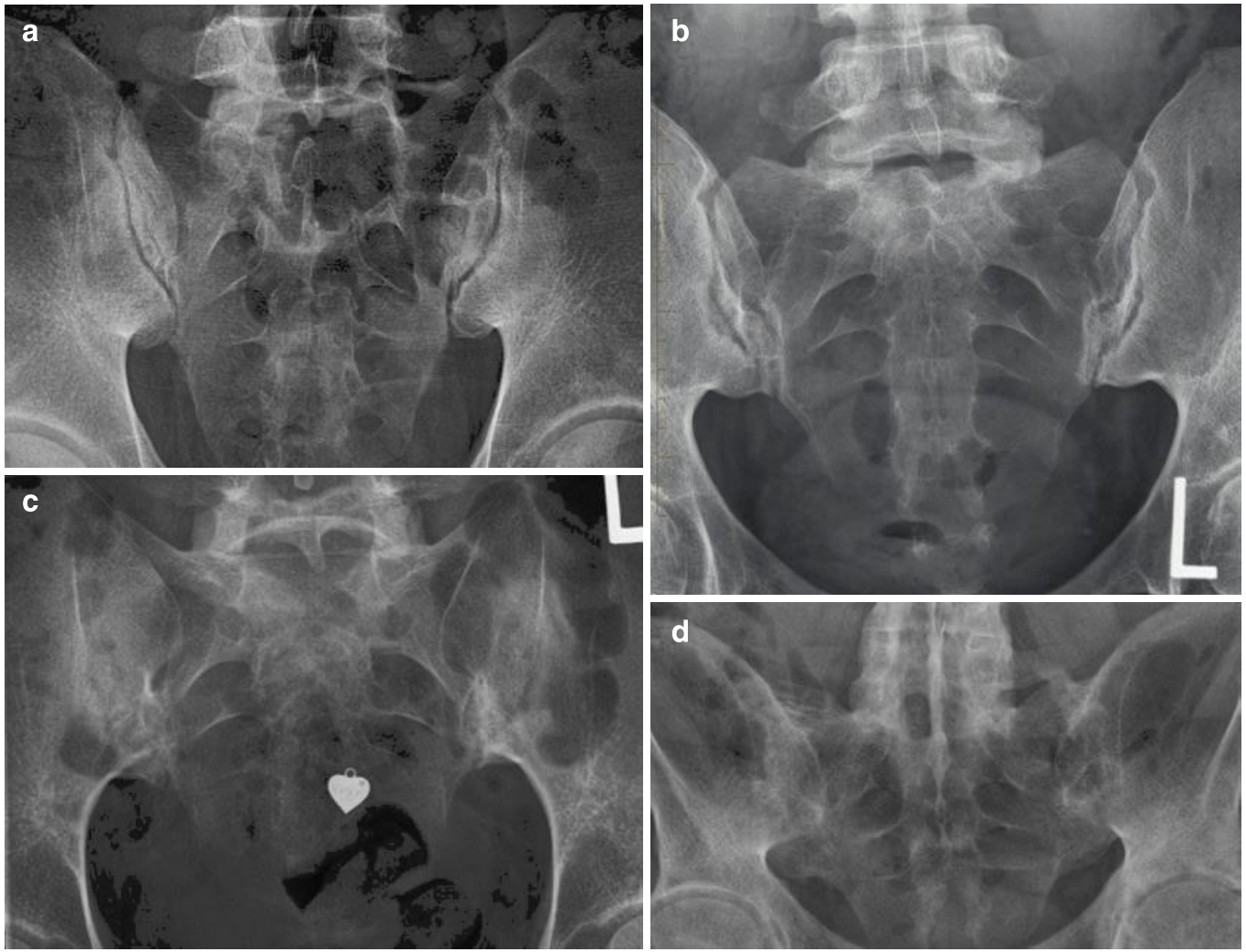


Kaeley GS, Eder L, Aydin SZ, Gutierrez M, Bakewell C. Dactylitis: A hallmark of psoriatic arthritis. Semin Arthritis Rheum. 2018 Oct;48(2):263-273. doi: 10.1016/j.semarthrit.2018.02.002. Epub 2018 Feb 14. PMID: 29573849.

Inflammatory Back Pain

- Lower back pain is a common presentation to primary care
- Suspicion for inflammatory back pain – i.e. Axial Spondyloarthropathy should trigger referral for rheumatological opinion
- ASAS criteria define inflammatory back pain as [8]:
  - Age of onset <40 years
  - Insidious onset
  - Improvement with exercise
  - No improvement with rest
  - Pain at night (improvement upon rising)
- Sensitivity 77.0% and specificity 91.7% if 4 or more criteria present for presence of IBP (not formal Ax-SpA diagnosis)

Inflammatory Back Pain



O'Neill, J. (2015). *Essential Imaging in Rheumatology* (1st ed. 2015.). Springer New York : Imprint: Springer.

Inflammatory back pain

- Other features not included in ASAS include:
  - Early morning stiffness
  - Radiation to buttocks, may alternate between sides
  - Patients may have concomitant, true hip pain (i.e. groin pain)
  - Presence of psoriasis, enthesitis or dactylitis should raise suspicion for Ax-SpA
- Should also ask about extra articular manifestations
  - Uveitis
  - IBD
  - Psoriasis

Inflammatory back pain

- Inflammatory back pain does not guarantee presence of AxSpA
  - In a US survey, 19.2% patients had back pain, 5-6% met criteria for IBP, and only 1% had formal Dx of AxSpA [9]
- A negative HLAB27 does not rule out Ax-SpA
  - Approx. 78% of patients with either AS or non-radiographic SpA are HLAB27 +ve [10]
- A normal CRP does not rule out Ax-SpA [11]
  - Elevated in 50-70% of AS Patients
  - Elevated in 30% of nr-SpA patients

Inflammatory back pain

- Normal SIJ films do not rule out Ax-SpA, especially in early disease [12]
  - Between 1-6 years of symptoms, only 50% of patients will exhibit SIJ changes on plain films
  - Radiographic change only becomes more likely after 6y of symptoms
- MR of the Sacroiliac joints is significantly more sensitive in detecting Ax-SpA in the early stages of disease

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