Chronic Reactive Arthritis (Reactive Arthropathy)

- Arthritis occurring as part of triad of arthritis, urethritis (cervicitis), and conjunctivitis.
- Inflammatory arthritis thought to be a sequela of infectious diarrhea, urethritis, or cervicitis.
- < 33% manifest full triad at presentation
- Clinical Issues
  - Heel pain in 61%
    - » One of most disabling features
  - Small joints of feet (64%)
  - "Sausage" digits (52%)
  - Low back pain in 61% (radiograph changes in 20%)
  - M:F = 1:1-2:1 (enteric vs. urogenital)
  - HLA-B27 associated; Whites affected more commonly than other racial groups (4:1)

Checklist

- Axial disease in chronic reactive arthritis (CRA) is identical to that of psoriatic arthritis (PsA)
- Look carefully at soft tissues; "sausage" digit suggests either CRA or PsA
- Posterior calcaneus erosions not unique to CRA
  - Consider also RA, PsA, AS/IBD arthritis
- CRA may present with severe symptoms in HIV patients; consider this underlying disease

Reactive arthropathy

- In particular, the calcaneus is a common site of involvement with bony proliferative changes including erosions, enthesophytes, and fluffy periosteal reaction.
- The posterior-superior aspect of the calcaneus is a frequent site of erosion due to adjacent bursitis.
- There is often secondary Achilles tendinitis and thickening of the soft-tissues.
- In the hands, reactive arthropathy affects the interphalangeal joints and MTPs with erosions and diaphyseal periostitis.
- Reactive arthropathy may affect the spine with formation of coarse bony bridging, which may be difficult to distinguish from psoriatic arthritis.

Imaging

- Best diagnostic clue
  - Calcaneus: erosions and enthesitis at tuberosity
  - "Sausage" digit and periosteal reaction, especially toes
    - » Fingers occasionally involved
  - Axial disease
    - » Bilateral sacroiliitis
    - » Bulky, asymmetric paravertebral ossification
- Location
  - Calcaneus > toes > other lower extremity joints
  - SI joints (SIJs)
  - Thoracolumbar > cervical spine
- Morphology
  - Erosions, periosteal reaction, enthesitis, ankylosis

Demographics

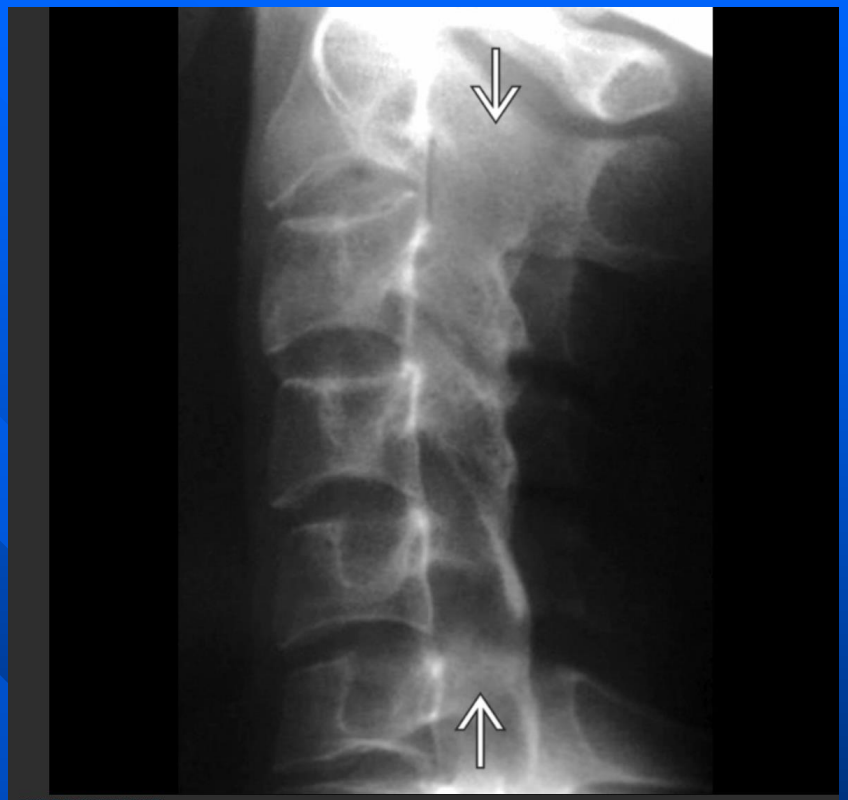
- Age
  - Onset: 16-60 years old, majority 20-40 years old
  - Mean: 26 years old
- Sex
  - M:F = 2:1, urogenital origin
  - M:F = 1:1, enteric origin
- Ethnicity
  - Whites affected more commonly than Blacks or other racial groups (4:1)
    - » Non-Whites have lower frequency of HLA-B27 (+)

Spine

- Thoracolumbar > cervical involvement
- Bulky paravertebral ossification
  - Sometimes referred to as nonmarginal syndesmophytes
  - Seen best on AP view; extends around disc space, rather than along annulus fibrosis
  - Asymmetric: skips bodies; does not always involve both right and left sides
- Usually can be differentiated from both spondylosis of osteoarthritis and syndesmophytes of AS
  - Early bone formation is fluffy and amorphous in all these processes and less easily differentiated
- Cervical spine less frequently or severely involved
  - May show atlantoaxial subluxation
- Facet fusion may occur
  - Less frequent and severe than in AS
  - Presence should not be used to exclude CRA
- Other axial joints may show inflammatory change
  - Costovertebral, sternoclavicular, symphysis pubis

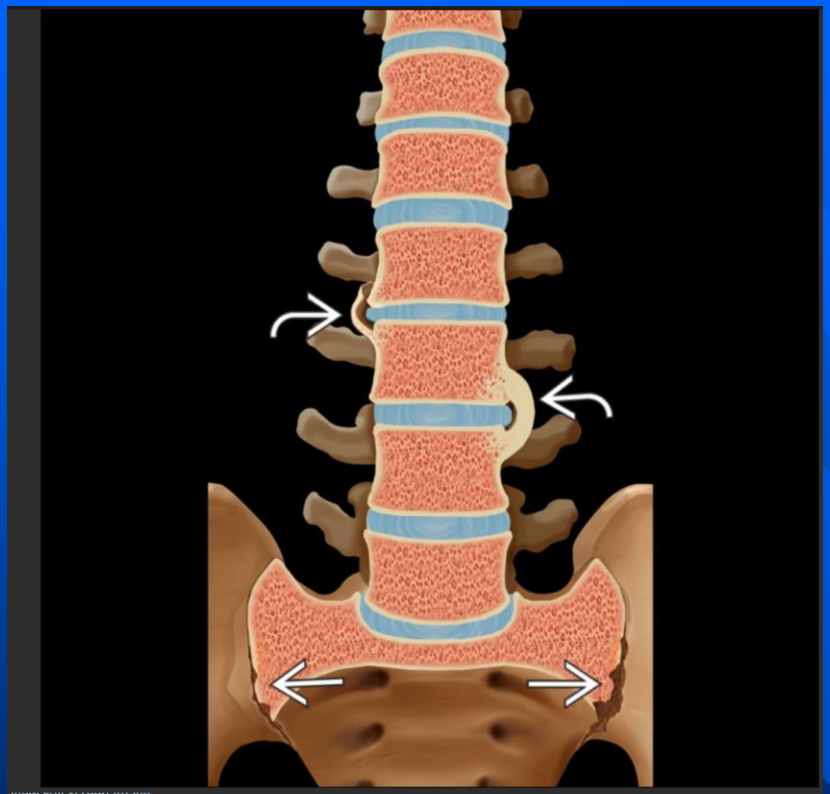
View Full Screen Image

Lateral radiograph in the same patient shows early "squaring" of the anterior margins of the vertebral bodies at the thoracolumbar junction →. This is more typical of ankylosing spondylitis but can occur with any of the spondyloarthropathies.



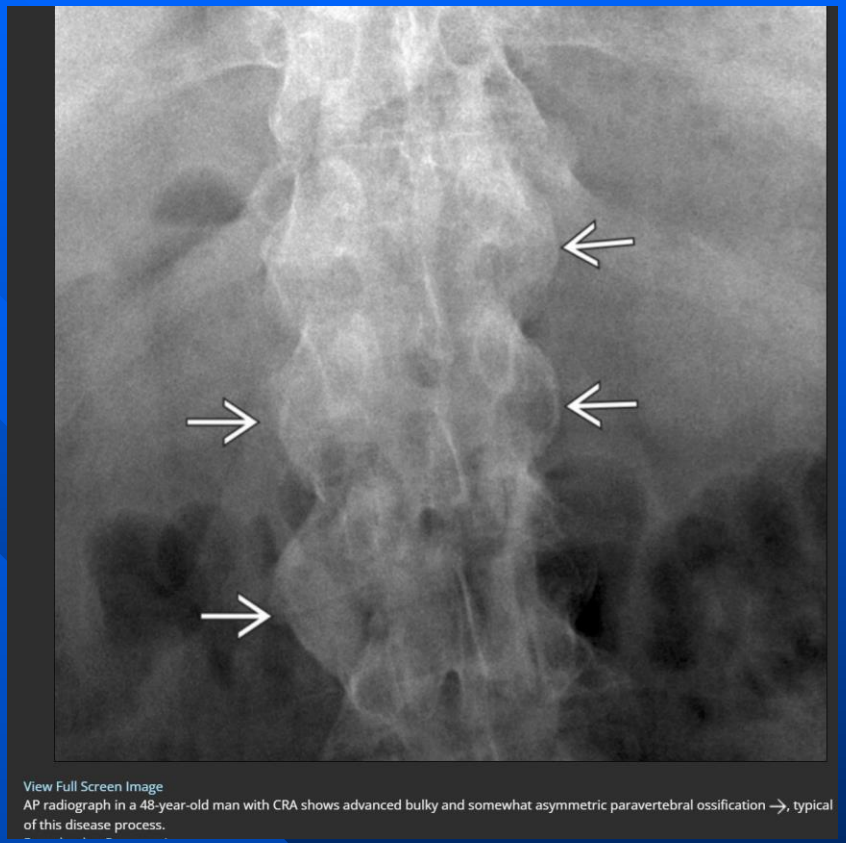
View Full Screen Image

Lateral radiograph of the cervical spine shows ankylosis of the facets → without paravertebral ossification. The facet ankylosis is more suggestive of ankylosing spondylitis than CRA, although any of the axial spondyloarthropathies can produce this. This patient was diagnosed with CRA.



View Full Screen Image

Coronal cut graphic of the lumbosacral spine depicts the axial abnormalities commonly found in chronic reactive arthritis (CRA). There is bilateral though asymmetric sacroiliitis →. There is also bulky paravertebral ossification bridging the vertebral bodies ↗ that is commonly asymmetric and non-marginal.

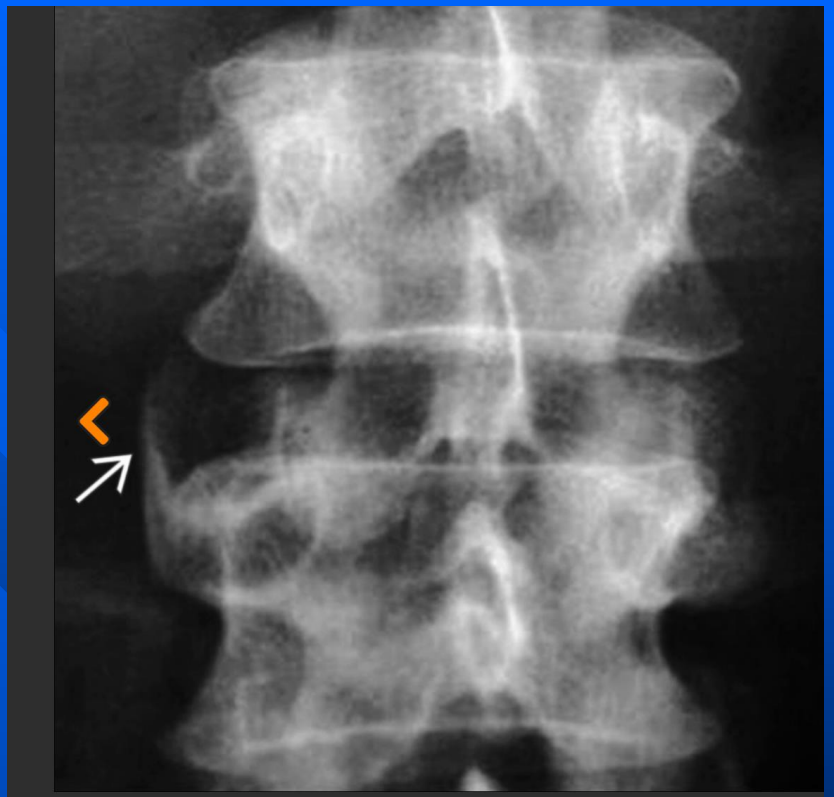


View Full Screen Image

AP radiograph in a 48-year-old man with CRA shows advanced bulky and somewhat asymmetric paravertebral ossification →, typical of this disease process.

View Full Screen Image

Lateral radiograph in a patient with CRA shows bridging syndesmophytes → at 2 levels of the cervical spine. The patient had more advanced and bulky syndesmophytes involving the thoracolumbar spine (not shown). Normal bone density is more typical of CRA or psoriatic arthritis (PsA).

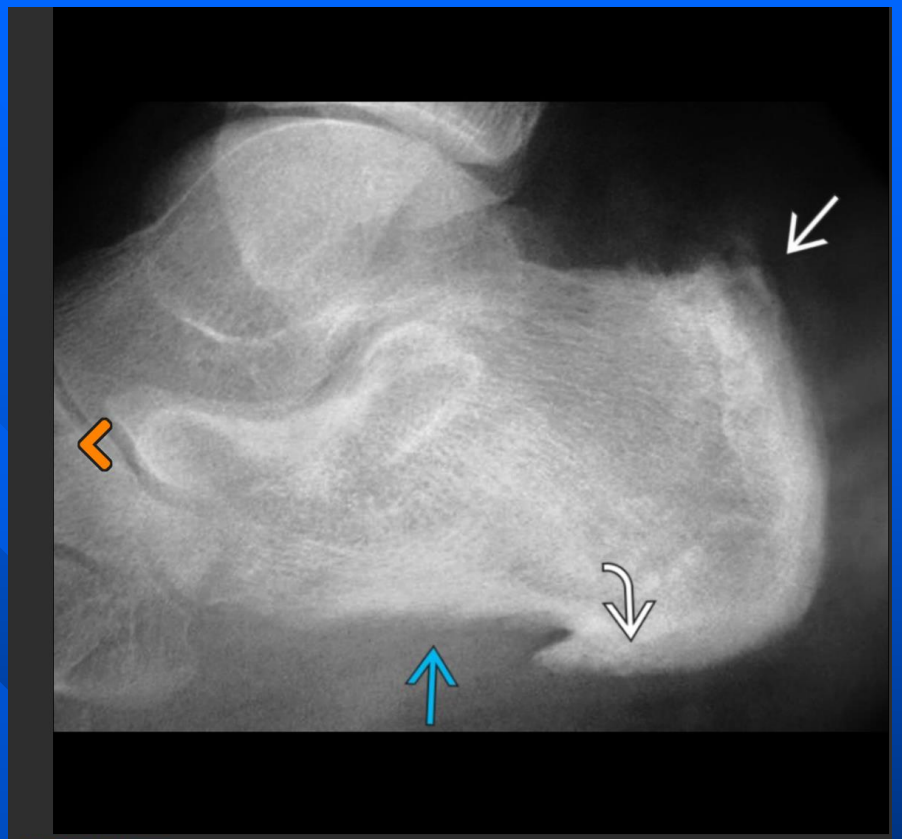


View Full Screen Image

AP radiograph shows early paravertebral ossification in a patient with CRA →. Note that it arises from the vertebral body some distance from the endplate and extends toward the vertebral body above. This is the nonmarginal pattern of CRA and PsA.

View Full Screen Image

Lateral radiograph in a 43-year-old man with heel pain shows a concavity in posterior tuberosity of the calcaneus. There is enthesitis with erosion and fluffy periosteal reaction at the origin of plantar fascia, a classic finding in CRA or PsA.



View Full Screen Image

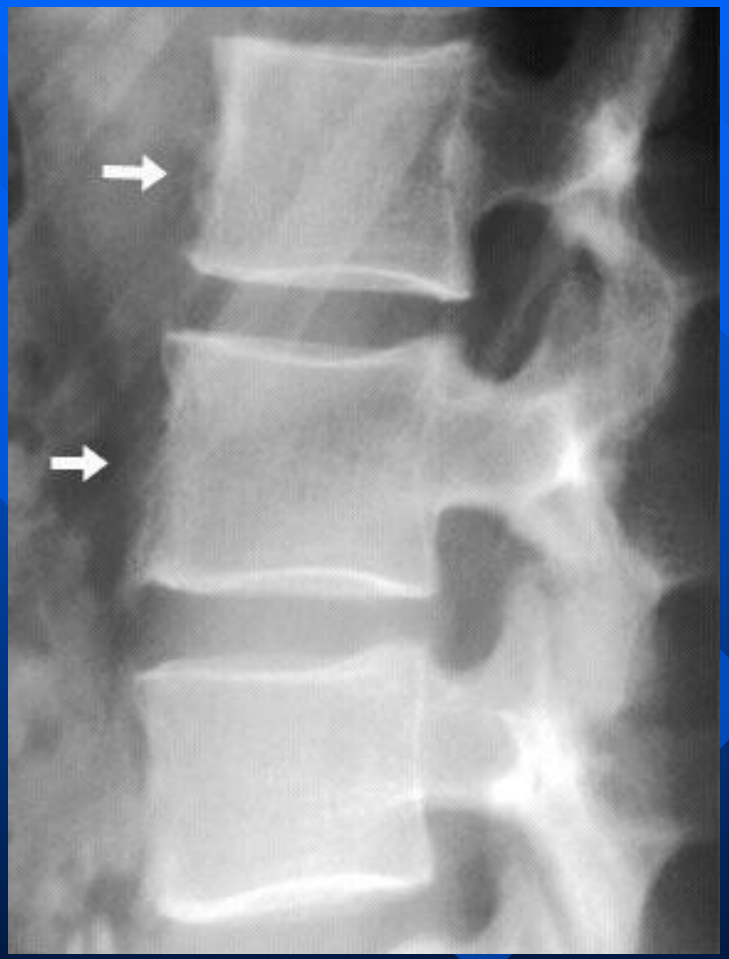
Lateral radiograph shows a classic presentation of CRA with fluffy periosteal reaction and enthesitis changes at the posterior calcaneus as well as the plantar fascia and long plantar ligament origins. Such reactive change should suggest spondyloarthritis.

Reiter syndrome

Reiter's syndrome

Sclerosis and ill-definition of both SI joints

Reiter's syndrome



Bony proliferation (arrows)

Reiter's syndrome with Erosions