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What are classic imaging findings of psoriatic arthritis?

Classic imaging features of psoriatic arthritis are erosive changes with bone proliferation about the in the interphalangeal joints (DIP and PIP) greater than the metacarpophalangeal joints. Erosions typically start marginally and proceed centrally within the joint which has been termed “pencil sharpening”. Periosteal new bone formation is classic. Hand involvement is more common than feet involvement. Remember the classic sausage digit. In the spine, psoriasis classically presents with large lateral paravertebral ossification with preserved disk spaces and relatively preserved facet joints. Whenever you are shown an image of large lateral paraspinous bridging ossification on board exams you need to consider the possibility of psoriatic arthritis.

What are key differences between rheumatoid arthritis and psoriatic arthritis?

Distribution: Rheumatoid arthritis is often symmetric and psoriatic arthritis is often asymmetric. Rheumatoid arthritis favors metacarpophalangeal joints and psoriasis favors the interphalangeal joints. Psoriasis classically has bony proliferation whereas rheumatoid arthritis does not.

Bone mineral density: rheumatoid arthritis is associated with osteoporosis unlike psoriasis.

Laboratory testing: Psoriatic arthritis is seronegative. RA has classic laboratory markers to include rheumatoid factor.

What are key differences between reactive arthritis and psoriatic arthritis?

Both of these entities are associated with bone proliferative changes and osseous erosions. Both can have sausage digit. Both are associated with unilateral sacroiliitis or bilateral asymmetric sacroiliitis. Essentially these are really difficult to differentiate based on imaging. However, psoriasis is more common in the hands and reactive arthritis is more common in the feet. Use clinical history as well to differentiate between these. Psoriasis will classically have skin changes that most commonly occur prior to bony changes but this is not always the case. Reactive arthritis will have recent infectious illness.

What are key differences between erosive osteoarthritis and psoriatic arthritis?

Erosive osteoarthritis is most classic for seagull erosions (central erosions) with osteophyte formation. Psoriatic arthritis will have peripheral erosions. Erosive arthritis will not have bone proliferative changes as with psoriasis. Presentation in a post-menopausal woman favors erosive osteoarthritis. Diffuse swelling of the digit (sausage digit) is seen with psoriasis and not erosive osteoarthritis.

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What are top differential considerations for unilateral versus bilateral sacroiliitis?

Bilateral symmetric: In terms of arthritis, I would think of ankylosing spondylitis first. Unilateral: Think infection vs psoriasis vs reactive arthritis. Bilateral asymmetric think psoriasis or reactive arthritis.

See more complete discussion of sacroiliitis with differential diagnosis here: https://radiopaedia.org/articles/sacroiliitis-differential?lang=us

What are classic imaging features in the spine of ankylosing spondylitis?

Buzzwords for ankylosing spondylitis include “shiny corners” with sclerosis involving the corners of the vertebral bodies and “bamboo spine” with diffuse syndesmophytes that may fracture with trauma. The “Romanus lesion” is an MRI finding of early ankylosing spondylitis manifesting as edema in the corners of the vertebral bodies (T1 dark and T2 bright) that will eventually progress to show the syndesmophytes and shiny corners on CT/radiography.

Ankylosing spondylitis is most associated with lung disease in which distribution?

Ankylosing spondylitis is associated with upper-lobe-predominant interstitial lung disease with small cystic spaces.

True or false: If you see spine disease suggestive of ankylosing spondylitis with absence of sacroiliac involvement this is still likely ankylosing spondylitis.

False. Spine disease without sacroiliac joint disease is unlikely to be seen with ankylosing spondylitis.

Why might one consider radiation therapy to the hip following hip replacement in a patient with ankylosing spondylitis?

For patients with ankylosing spondylitis, prophylactic radiotherapy after hip replacement may be considered due to high likelihood of developing heterotopic ossification and subsequent joint stiffness.

Can you name classic spondyloarthropathies with HLA B27 associations?

Ankylosing spondylitis, psoriatic arthritis, inflammatory bowel disease related arthritis, reactive arthritis.

Can you differentiate on imaging the skeletal findings from ankylosing spondylitis and inflammatory bowel disease related arthritis?

Classically no. You must rely on other findings to differentiate these entities. For example, characteristic bone findings of ankylosing spondylitis vs inflammatory bowel disease related arthritis in a patient with a colostomy is more likely to be the latter.

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What are differences between the imaging manifestations of ankylosing spondylitis and diffuse idiopathic skeletal hyperostosis (DISH) in the spine?

Bulky osteophytes with disk space preservation is most likely diffuse idiopathic skeletal hyperostosis (DISH). Remember DISH, by itself, is not related with sacroiliitis. Shiny corners with syndesmophytes is ankylosing spondylitis and ankylosing spondylitis is associated with sacroiliitis. As a reminder psoriatic arthritis is associated with unilateral large bridging osteophytes.