

A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide, partially overlapping the text.

22 y/o male with longstanding back pain

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A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide. The leaf has a prominent central vein and several smaller veins branching off, with a scalloped edge.

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Early findings of Ankylosing Spondylitis



AP radiograph of the SI joints demonstrates widening of the SI joint spaces and bilaterally symmetric iliac predominant sclerosis and erosions.

Sacroiliitis, Bilateral and Symmetric

Imaging Features

- +/- Osteopenia
- +/- Sclerosis
- Erosions and widening of sacroiliac joint spaces
- Eventual fusion of sacroiliac joints
- Spine
 - Vertical syndesmophytes
 - Osteitis or resorption at the anterior corners of vertebral bodies
 - Eventual fusion of vertebral bodies and facets

Sacroiliitis, Bilateral and Symmetric

General Features

- Inflammatory arthropathy and enthesopathy with predilection for axial skeleton
- Age: onset peaks at ~15-30 years, rare after 50
- M > F : 2.5-5:1
- Etiology: possible molecular mimicry between arthritogenic bacteria that resemble HLA-B27

Sacroiliitis, Bilateral and Symmetric

Ankylosing Spondylitis

- “Pseudo-widening” of SI joint spaces which eventually progresses to ankylosis
- Osteitis at anterior corners of vertebral bodies: “shiny corners”
- Resorption of corners: vertebral body squaring
- Eventual spinal fusions: “bamboo spine” with dagger sign
- Complete fusion in 43% of patients with AS > 40 years
- Fusion and osteoporosis puts spine at risk for fracture from mild trauma
- Other axial joints: Sternoclavicular, costochondral, costovertebral
 - Erosions and eventual fusion

Sacroiliitis, Bilateral and Symmetric

General Information

- Bilateral, symmetric: Ankylosing spondylitis and inflammatory bowel disease (may appear asymmetric early in disease).
- Bilateral, asymmetric or unilateral: Psoriatic arthritis, Reactive arthritis, and septic arthritis.

References

1. Jang JH et al: Ankylosing Spondylitis: Patterns of radiographic involvement. *Radiology* 258:192-8,2011
2. Tuite MJ: Sacroiliac joint imaging. *Semin Musculoskelet Radiol.* 12(1):72-82, 2008