Ankylosing Spondylitis

Definition of ankylosing spondylitis (AS)

- An inflammatory disease of the spine affecting young (usually) HLA-B27 positive adults.
  - HLA-B27 is present in about 8% of normal population, but up to 90% of patients with ankylosing spondylitis
  - Possible environmental trigger in these patients: potentially gut micro-flora or mechanical (as yet uncertain)
- Males are affected more than women (3:1)
- "Rule of twos": ank spond occurs in:
  - 0.2% of the general population
  - 2% of HLA-B27 positive people
  - 20% of HLA-B27 positive people with an affected family member

Presentation of ankylosing spondylitis

- Episodic inflammation of the sacroiliac joints in late teens/early 20s
- Morning low back pain and stiffness
  - Improves on exercise
  - May radiate into both buttocks
- Extra-spinal features
  - Other joint pain
    - Hips (in about 1/3 of patients)
    - Shoulder girdle, costochondral joints
    - Peripheral joint involvement in about 25%, usually oligo-articular, large joint & asymmetric
  - Inflammation of the Achilles tendon insertion (enthesitis)
  - Uveitis
  - Aortitis & aortic insufficiency
  - Apical fibrosis

Mnemonic for ankylosing spondylitis

- The six "A"s of Ank spond:
  - Atlanto-axial subluxation
  - Anterior uveitis
  - Apical fibrosis
  - Aortic regurgitation
  - Amyloidosis (renal)
  - Achilles involvement (enthesitis)

Examination of ankylosing spondylitis

- Reduced flexion in the lumbar spine
  - Modified Shober's test: Distance between the midpoint of the posterior superior iliac spines and a point 10cm vertically above when standing erect, following maximal forward flexion of the spine (normal > 15cm)
  - Also reduced rotation at lumber, thoracic and cervical spine
- Cervical spine mobility
  - Increased occiput to wall distance
- Reduced chest expansion often present (restrictive pattern on lung function tests)
- Bath Ankylosing Spondylitis Disease Activity Index is used to assess burden of active disease

Investigations in ankylosing spondylitis

Bloods

- CRP and ESR usually raised
- HLA testing is rarely indicated. Many HLA-B27 positive don't get AS, and some people without it do.
    - Prevalence 2-8% (30% in eskimos!)

Imaging

- Plain X-rays
    - Loss of definition, then sclerosis, of sacroiliac joints
        - Bilateral sacroiliac erosion on X-Ray is the most suggestive feature of AS, more than HLA-B27 positivity
    - Sclerosis of intervertebral joints and the insertions of intervertebral ligaments
    - Late changes
        - Sacroiliac joints fus
        - Intervertebral discs, facet joints and syndesmophytes all fuse
            - This is 'bamboo spine' or tramline appearance
- MRI spine

Treatment of ankylosing spondylitis

- Morning exercises to preserve flexibility
- NSAIDs during exacerbations
- Local steroid injections for peripheral arthritis
- DMARDs such as methotrexate and sulphasalazine may help with peripheral arthritis but not particularly effective for spinal disease
- TNF-alpha blocker drugs are effective in severe disease
- Please see DMARD {link} pages for further details

Prognosis of ankylosing spondylitis

- Most patients do well with exercise and analgesia
- 80% are employed
- Hip disease is more disabling than other components
- Indicators of poor prognosis:
    - High ESR
    - Poor response to NSAIDs
- NB the rigid AS spine requires very little force to fracture – have a high index of suspicion